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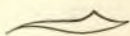
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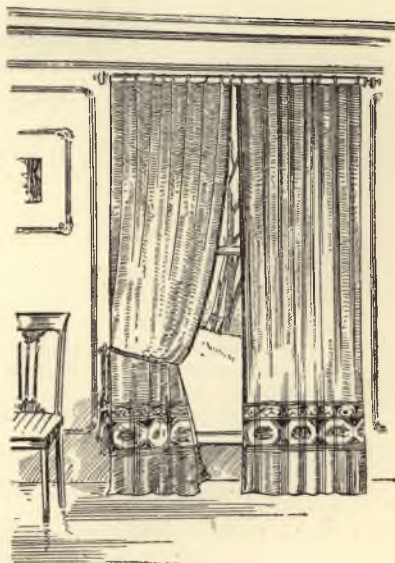
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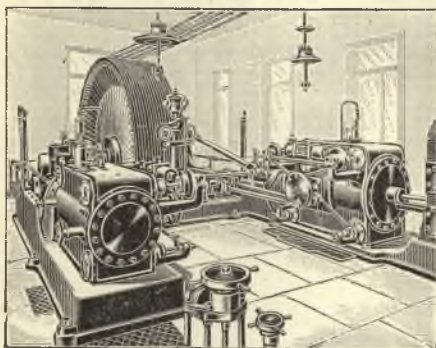
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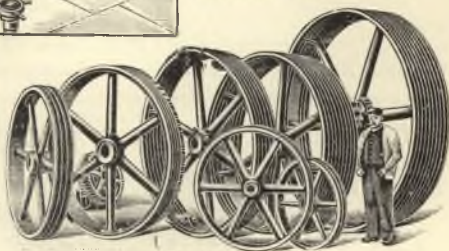
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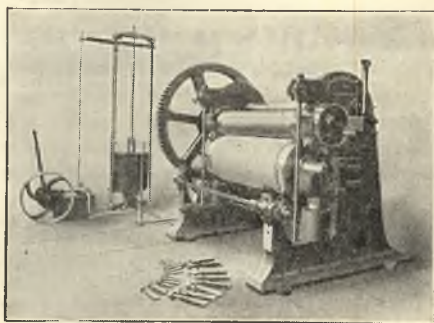
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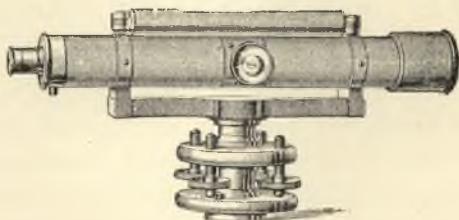
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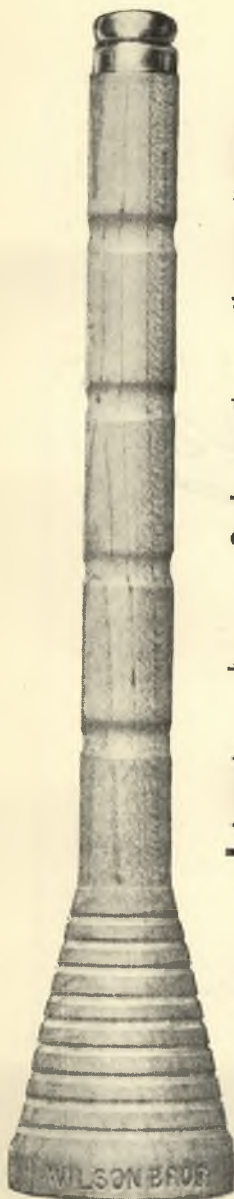
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ALMANAC, 1911-12

SEPTEMBER, 1911

1 F
2 S

3 S
4 M
5 Tu
6 W
7 Th
8 F
9 S

10 S
11 M

Supplementary Intermediate examination in Arts and Science, First M. B. examination, and Preliminary examination in Science (L. D. S.) begin.

12 Tu
13 W
14 Th
15 F
16 S

17 S
18 M
19 Tu
20 W
21 Th
22 F
23 S

Evening Class session (First Term) begins.

24 S
25 M
26 Tu
27 W
28 Th
29 F
30 S

Last day for sending in Essays for Gladstone Prize.

OCTOBER, 1911

1	S	
2	M	First Term in all Faculties begins. Admission of Students.
3	Tu	Admission of students. Entrance examination at 10 a.m. and 2 p.m.
4	W	
5	Th	
6	F	
7	S	
8	S	
9	M	
10	Tu	
11	W	Meeting of Finance Committee.
12	Th	
13	F	
14	S	
15	S	
16	M	Winter course in Agriculture (First Term) begins.
17	Tu	Meeting of Board of Faculty of Arts.
18	W	Meeting of Council.
19	Th	
20	F	
21	S	
22	S	
23	M	
24	Tu	
25	W	
26	Th	Meeting of Board of Faculties of Science and Technology.
27	F	
28	S	
29	S	
30	M	
31	Tu	

NOVEMBER, 1911

1	W	Meeting of Senate.
2	Th	
3	F	
4	S	
5	S	Meeting of Board of Faculty of Medicine. Meeting of Finance Committee.
6	M	
7	Tu	
8	W	
9	Th	
10	F	
11	S	Meeting of Council.
12	S	
13	M	
14	Tu	
15	W	
16	Th	
17	F	
18	S	
19	S	Meeting of Board of Faculty of Arts.
20	M	
21	Tu	
22	W	
23	Th	
24	F	
25	S	Last day of entry and payment of fees for Second and Final M.B., for D.P.H., and for First Professional and Final L.D.S. examinations.
26	S	
27	M	Meeting of Board of Faculties of Science and Technology.
28	Tu	
29	W	
30	Th	

7 DECEMBER, 1911

1	F	
2	S	
3	S	
4	M	
5	Tu	Meeting of Board of Faculty of Medicine.
6	W	Meeting of Senate.
7	Th	
8	F	
9	S	
10	S	
11	M	
12	Tu	
13	W	Meeting of Finance Committee. Final M.B. examination and Final and First Professional L.D.S. examinations begin.
14	Th	Terminal examinations in Faculties of Arts, Science and Technology begin. Second M.B. and D.P.H. examinations begin.
15	F	
16	S	
17	S	
18	M	
19	Tu	
20	W	First Term in all Faculties ends. Evening Class Session (First Term) ends. Meeting of Council.
21	Th	Degree Day at School of Medicine. Library closed until January 1.
22	F	
23	S	Winter course in Agriculture (First Term) ends.
24	S	
25	M	CHRISTMAS DAY.
26	Tu	
27	W	
28	Th	
29	F	
30	S	
31	S	

JANUARY, 1912

1	M	Library re-opened.
2	Tu	
3	W	
4	Th	Evening Class Session (Second Term) begins.
5	F	
6	S	
7	S	
8	M	Winter course in Agriculture (Second Term) begins.
9	Tu	
10	W	First Term in all Faculties begins. Meeting of Finance Committee.
11	Th	
12	F	
13	S	
14	S	
15	M	
16	Tu	Meeting of Board of Faculty of Arts.
17	W	Meeting of Council.
18	Th	
19	F	
20	S	
21	S	
22	M	
23	Tu	
24	W	
25	Th	Meeting of Board of Faculties of Science and Technology.
26	F	
27	S	
28	S	
29	M	
30	Tu	
31	W	Last day of entry for Clothworkers' Scholarships.

FEBRUARY, 1912

1	Th	Last day of entry for First M.B. (Part I) examination and Preliminary examination in Science (L.D.S.) in March.
2	F	
3	S	
4	S	Meeting of Board of Faculty of Medicine. Meeting of Senate.
5	M	
6	Tu	
7	W	
8	Th	
9	F	
10	S	
11	S	
12	M	
13	Tu	
14	W	Meeting of Finance Committee.
15	Th	
16	F	
17	S	
18	S	Meeting of Board of Faculty of Arts. Meeting of Council.
19	M	
20	Tu	
21	W	
22	Th	
23	F	
24	S	
25	S	
26	M	
27	Tu	
28	W	Meeting of Board of Faculties of Science and Technology. Last day of application for the 1851 Exhibition Scholarship.
29	Th	

MARCH, 1912

1	F	Last day of entry and of payment of fees for the June Degree examinations, for City and Guilds Institute examinations, for M.A. and M.Sc. examinations, for Diplomas in Commerce and for Teachers of French and German, and of application for Litt.D. and D.Sc.
2	S	
3	S	
4	M	
5	Tu	Meeting of Board of Faculty of Medicine.
6	W	Meeting of Senate.
7	Th	
8	F	
9	S	
10	S	
11	M	
12	Tu	
13	W	Meeting of Finance Committee.
14	Th	
15	F	
16	S	Winter course in Agriculture (Second Term) ends.
17	S	
18	M	
19	Tu	Meeting of Board of Faculty of Arts.
20	W	Meeting of Council.
21	Th	First M.B. (Part I) examination and Preliminary examination in Science (L.D.S.) begins.
22	F	
23	S	
24	S	
25	M	Surveying Class at Barden begins.
26	Tu	
27	W	First Term in all Faculties ends. Last day of application for Renewal of Scholarships.
28	Th	
29	F	Evening Class session (Second Term) ends.
30	S	
31	S	

APRIL, 1912

1	M	
2	Tu	
3	W	
4	Th	
5	F	GOOD FRIDAY. University closed.
6	S	University closed.
7	S	EASTER DAY.
8	M	University closed.
9	Tu	University closed.
10	W	Meeting of Finance Committee. Surveying Class at Barden ends.
11	Th	
12	F	
13	S	
14	S	
15	M	
16	Tu	
17	W	Meeting of Council. Summer course in Agriculture begins.
18	Th	
19	F	
20	S	
21	S	
22	M	
23	Tu	
24	W	Third Term in all Faculties begins.
25	Th	Meeting of Board of Faculties of Science and Technology. The Charter of the University received Royal Assent, 1904.
26	F	
27	S	
28	S	
29	M	
30	Tu	

MAY, 1912

1	W	Meeting of Senate. Last day of entry for the Entrance, Leighton, and Salt Scholarships.
2	Th	
3	F	
4	S	
5	S	
6	M	
7	Tu	Meeting of Board of Faculty of Medicine.
8	W	Meeting of Finance Committee.
9	Th	
10	F	
11	S	
12	S	
13	M	
14	Tu	
15	W	Meeting of Council.
16	Th	
17	F	
18	S	
19	S	
20	M	
21	Tu	Meeting of Board of Faculty of Arts.
22	W	
23	Th	
24	F	
25	S	Last day of entry for July Matriculation examination.
26	S	WHIT-SUNDAY.
27	M	University closed.
28	Tu	University closed.
29	W	
30	Th	Meeting of Board of Faculties of Science and Technology.
31	F	

JUNE, 1912

✓ 1	S	Last day of entry for the Ch.M. examination, and for the Infirmary Scholarship.
2	S	
3	M	
4	Tu	Meeting of Board of Faculty of Medicine.
5	W	Meeting of Senate.
6	Th	
✓ 7	F	
8	S	Last day of entry and payment of fees for Second and Final M.B., for First Professional and Final L.D.S., and for D.P.H. examinations.
9	S	
10	M	Degree examinations in Faculties of Arts, Science, and Technology begin.
11	Tu	
12	W	Meeting of Finance Committee.
13	Th	
14	F	
E. 15	S	
16	S	
17	M	
18	Tu	Meeting of Board of Faculty of Arts.
19	W	Meeting of Council.
20	Th	
21	F	
22	S	Second and Final M.B. and Ch.M. examinations, and First Professional and Final L.D.S. examinations begin.
23	S	
24	M	D.P.H. examination begins. University of Leeds Act received Royal Assent, 1904.
25	Tu	
26	W	
27	Th	
28	F	
29	S	Third Term in all Faculties ends. Degree Day. Summer Term in Agriculture ends.
30	S	

JULY, 1912

1	M	
2	Tu	
3	W	
4	Th	
5	F	
6	S	
7	S	
8	M	
9	Tu	
10	W	Meeting of Finance Committee.
11	Th	
12	F	
13	S	
14	S	
15	M	Opening of the Yorkshire College Buildings by the Prince and Princess of Wales, 1885.
16	Tu	
17	W	Meeting of Council.
18	Th	
19	F	
20	S	
21	S	
22	M	
23	Tu	
24	W	
25	Th	
26	F	
27	S	
28	S	
29	M	
30	Tu	
31	W	Library closed until August 16.

AUGUST, 1912

1	Th	
2	F	
3	S	
4	S	
5	M	BANK HOLIDAY. University closed.
6	Tu	
7	W	
8	Th	
9	F	
10	S	
11	S	
12	M	
13	Tu	
14	W	Last day of application for Teachers' Assisted Student-ships.
15	Th	Leeds University Act received Royal Assent, 1904.
16	F	Library re-opened.
17	S	
18	S	
19	M	
20	Tu	
21	W	
22	Th	
23	F	
24	S	
25	S	
26	M	
27	Tu	
28	W	
29	Th	
30	F	
31	S	Last day of entry for the Supplementary Intermediate examination in Arts and Science, for the First M.B. examination, and for the Preliminary examination in Science (L.D.S.).

SEPTEMBER, 1912

1	S	
2	M	Last day of entry for September Matriculation examination.
3	Tu	
4	W	
5	Th	
6	F	
7	S	
8	S	
9	M	Supplementary Intermediate examination in Arts and Science, First M.B. examination, and Preliminary examination in Science (L.D.S.) begin.
10	Tu	
11	W	
12	Th	
13	F	
14	S	
15	S	
16	M	
17	Tu	
18	W	
19	Th	
20	F	
21	S	
22	S	
23	M	
24	Tu	
25	W	
26	Th	
27	F	
28	S	
29	S	
30	M	Last day for sending in Essays for Gladstone Prize.

THE UNIVERSITY OF LEEDS

THE CHARTER

EDWARD VII, by the Grace of God, of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas, King, Defender of the Faith. To all to whom these presents shall come, greeting.

Whereas by Charter of Her Late Majesty Queen Victoria, dated 20th April, 1880, the Victoria University was founded and constituted having its seat in the City of Manchester.

And whereas the Owens College, Manchester, was thereby constituted a College in the University and provision was made that other Colleges might from time to time be admitted as Colleges in the University in the manner and subject to the conditions therein prescribed.

And whereas the University College, Liverpool, was by resolution of the Court of the University admitted as a College of the University on the 5th November, 1884, and The Yorkshire College, Leeds, was by resolution of the said Court admitted as a College in the University on the 3rd November, 1887, but no other College has been so admitted.

And whereas the said University College, Liverpool, has presented to Us in Our Council a humble Petition under the Common Seal of that College praying us to erect a University within the City of Liverpool.

And whereas the Owens College, Manchester, has presented to Us in Our Council a humble Petition under the Common Seal of that College praying that a new or supplemental Charter may be granted so as to constitute and continue the Victoria University as a University in Manchester without association with any College except the Owens College.

And whereas the Yorkshire College, Leeds, has presented to Us in Our Council a humble Petition under the Common Seal of that College, praying Us to erect a University having its seat in Leeds.

And whereas we have taken the said Petitions into Our Royal consideration and are minded to accede thereto.

Now therefore know ye that We, by virtue of Our Royal Prerogative and all other powers in that behalf enabling us of Our Special Grace certain knowledge and mere motion by these presents Do for Us, Our Heirs and Successors, grant, will, direct, and ordain as follows :

I. There shall be from henceforth for ever in Our said City of Leeds a University of the name and style of "The University of Leeds," which shall be and continue one body politic and corporate with perpetual succession and a common seal and with full power and capacity by and in such name to sue and be sued and to do all other lawful acts whatsoever and with full power and capacity, subject to the restrictions herein set forth, without any further licence to all persons and corporations to assure and to the University to take, by gift or otherwise purchase and hold and also to grant demise or otherwise dispose of real and personal property.

II. The University shall have the powers following :

1. To grant and confer Degrees and other academic distinctions to and on persons who shall have pursued an approved course of study in the University and shall have passed the examinations of the University under conditions laid down in its Statutes or Ordinances. Provided that degrees representing proficiency in technical subjects shall not be conferred without proper security for testing the scientific or general knowledge underlying technical attainments.

2. To admit graduates of other Universities to Degrees of equal or similar rank in the University.

3. To confer Degrees of the University on any persons who hold office in the University as Professors, Readers, Lecturers, or otherwise, or who shall have carried on independent research therein, or on any persons who, at the date of this Our Charter, are Associates of the Yorkshire College.

4. To grant Diplomas, Licentiateships, Certificates, or other distinctions to persons who have pursued a course of study approved by the University under conditions laid down by the University.

5. To confer Honorary Degrees, or other distinctions on approved persons.

Provided that all Degrees and other distinctions shall be conferred and held subject to any provisions which may be made in reference thereto by the Statutes, Ordinances, or Regulations of the University.

6. To provide for instruction in such branches of learning as the University may think fit, and also to make provision for research and for the advancement and dissemination of knowledge.

7. To examine and inspect schools and other educational institutions, to grant Diplomas and other Certificates, and to provide such lectures and instruction for persons not members of the University as the University may determine.

8. To accept the examinations and periods of study passed by students of the University at other Universities or places of learning as equivalent to such examinations and periods of study in the University as the University may determine, and to withdraw such acceptance at any time.

Provided that in no case shall the University confer a Degree in Medicine or Surgery upon any person who has not attended in the University during two years at least courses of study recognised for such Degree, or for one of the other Degrees of the University.

9. To affiliate other Colleges or institutions or branches or departments thereof, or to admit the members thereof to any of the privileges of the University, and to accept attendance at courses of study in such Colleges or institutions in place of such part of the attendance at courses of study in the University, and upon such terms and conditions and subject to such regulations as may from time to time be determined by the University.

10. To co-operate by means of joint boards or otherwise, with other Universities and Authorities for the

conduct of Matriculation examinations, for the examination and inspection of schools and other academic institutions and for such other purposes as the University may from time to time determine.

11. To enter into any agreement with the Yorkshire College for the incorporation of that College in the University, and for taking over its property and liabilities, and, if necessary, to promote a Bill in Parliament to confirm or carry out any such agreement.

12. To enter into any agreement with any other institution for the incorporation of that institution in the University and for taking over its property and liabilities, and for any other purpose not repugnant to this Our Charter.

13. To enter into any agreement with the Victoria University of Manchester or with the University of Liverpool for the division or apportionment of any of the moneys, endowments, or property of the Victoria University, with due regard to the local origin of any particular foundation, to the wishes of the Donors, and other special circumstances, and for reference to an Arbitrator in case of difference.

14. To institute Professorships, Assistant Professorships, Readerships, Lectureships, Teacherships, and any other offices required by the University, and to appoint to such offices. Also to institute and award Fellowships, Scholarships and Exhibitions and Prizes.

15. To license Halls for the residence of students.

16. To do all such other acts and things whether incidental to the powers aforesaid or not, as may be requisite in order to further the objects of the University as a Teaching and Examining Body, and to cultivate and promote Arts, Science, and Learning.

III. It shall be the duty of the University to co-operate, by means of a Joint Board or otherwise, with the Victoria University of Manchester and the University of Liverpool for the regulation and conduct of Matriculation examinations, including the conditions of exemption therefrom. Statutes of the University shall prescribe and regulate the constitution

and duties of the said Joint Board, the appointment and continuance in office of the members thereof, the filling of vacancies among the members, and all other matters relative to the Joint Board which it may be thought are proper to be so regulated and prescribed.

Visitor

IV. We, Our Heirs and Successors, Kings and Queens of the Kingdom and Dominions aforesaid, shall be and remain the Visitor and Visitors of the University through the Lord President of our Council for the time being, and in the exercise of the Visitorial Authority We and Our Heirs and Successors shall have the right from time to time and in such manner as We or They shall think fit to direct an inspection of the University, its buildings, laboratories, and general equipment, and also of the examination, teaching, and other work done by the University.

Authorities of the University

V. The Authorities of the University shall be the Chancellor, the Pro-Chancellor, the Vice-Chancellor, the Pro-Vice-Chancellor, the Court, the Council, the Senate, the Faculties, the Boards of Faculties, and the Convocation. There shall be a Treasurer and other proper officers of the University.

The Chancellor

VI. The Chancellor shall be the Head and Chief Officer of the University and President of its Court, Council, and Convocation, and shall, except as otherwise hereby provided, confer Degrees. He shall hold office during his life or until his resignation or until his removal for good cause by the Visitor at the instance of the Court.

Our right trusty and entirely beloved Cousin and Councillor, George Frederick Samuel, Marquis of Ripon, Knight of Our Most Noble Order of the Garter, Doctor of Laws, shall be the first Chancellor of the University.

His successors from time to time shall be elected by the Court on the nomination of the Council of the University.

The Pro-Chancellor

VII. In the absence of the Chancellor, or pending a vacancy in the office of Chancellor, or during the Chancellor's inability to act, the Pro-Chancellor shall exercise all the functions of the Chancellor, except the conferring of Degrees, and shall, if present, preside at any meetings of the Court and Council. Our trusty and well-beloved Arthur Greenhow Lupton, Chairman of the Council of the Yorkshire College, shall be the first Pro-Chancellor of the University, and shall hold his office for one year. Subsequent appointments to the said office shall be made annually by the Court on the nomination of the Council.

The Vice-Chancellor

VIII. The Vice-Chancellor shall be ex-officio Chairman of the Senate. In the absence of the Chancellor the Vice-Chancellor shall confer Degrees, except as otherwise hereby provided.

Our trusty and well-beloved Nathan Bodington, Principal of the Yorkshire College, Doctor of Letters, shall be the first Vice-Chancellor of the University, and shall hold such office for such term or terms and subject to such conditions as may from time to time be determined by the Council.

His successors from time to time shall be appointed by the Court on the nomination of the Council and shall hold such office for such term or terms and subject to such conditions as may from time to time be determined by the Council.

The Pro-Vice-Chancellor

IX. Subject to the Statutes and Ordinances of the University, and in the absence of the Vice-Chancellor, the Pro-Vice-Chancellor may act as Vice-Chancellor. The Pro-Vice-Chancellor shall from time to time be appointed by the Council from among the members of the Senate.

The Court

X. The Court shall be the governing body of the University and shall direct the form, custody, and use of the Common Seal, and shall have power to regulate and

determine all matters concerning the University, and generally shall exercise all the powers and discretions of the University, except as otherwise provided by this Our Charter or by the Statutes.

The Court shall have power by Statute to increase or diminish the number of its members, by increasing or diminishing the number to be nominated or appointed by the persons or bodies possessing the right of nomination or appointment, or by adding representatives of other bodies, or in any other manner.

The Statutes set forth in the Schedule hereto annexed shall be the first Statutes of the University under this Our Charter. The Court may amend, add to, or repeal the Statutes for the time being in force (including those set forth in the Schedule hereto), but no such amendment, addition, or repeal shall be valid or operative until allowed by Us or by a Committee of Our Council.

Ordinances may be made by the Court for the regulation of all matters not required by this Our Charter to be dealt with by Statute.

Provided (1) that it shall not be lawful for the Court, by any Statute or otherwise, to adopt or impose on any person any test whatever of religious belief or profession in order to entitle him to be admitted as a Professor, Teacher, Student, or Member of the University, or to hold office therein, or to graduate thereat, or to enjoy or exercise any privilege thereof.

Provided (2) that any Statute or Ordinance made by the Court be not repugnant to the laws of this Realm or to the general objects of this Our Charter.

Provided (3) that Statutes or Ordinances relating to Degrees, studies, and examinations shall not be adopted without report from the Senate.

Provided (4) that no change shall be made in any Statute or Ordinance altering the status, powers, or constitution of any of the Authorities of the University until such Authority shall have had an opportunity of pronouncing an opinion upon the proposed change

The Court shall have power to confer Degrees in absentia by a resolution of the Court, but save as aforesaid all Degrees shall be conferred by the Chancellor or in his absence by the Vice-Chancellor or Pro-Vice-Chancellor.

The Court shall have power to deprive any Graduate of the University who shall have been convicted of a crime or offence, or shall, in the opinion of the Court, have been guilty of scandalous conduct, of any Degree or Degrees conferred by the University and of all privileges enjoyed by him as such Graduate aforesaid.

The acts of the Court shall not be invalidated by any vacancy among its Members.

XI. Every Statute or alteration of a Statute, and every Ordinance or alteration of an Ordinance relating to any of the matters following, that is to say :

- (a) The titles of Degrees,
- (b) The establishment of new Degrees,
- (c) The periods of residence and study in the University or in any affiliated or recognised institution required for Degrees,
- (d) The conditions under which Degrees higher than the Degree of Bachelor in any faculty are to be granted,
- (e) The courses for medical Degrees and the subjects of examinations,

shall before such Statute or alteration of a Statute shall be allowed and before such Ordinance or alteration of an Ordinance shall become operative and have effect be communicated to the Victoria University of Manchester and the University of Liverpool, and if within one month after the receipt of such communication notice of objection thereto shall have been given by the said Universities or either of them the question so arising shall be considered by a Joint Committee of the three Universities, and in default of agreement any of the said Universities may within one month make a representation in regard thereto to Us or to a committee of Our Council, and, in the event last mentioned, such Statute or Ordinance or alteration therein shall not become operative and have effect until allowed by Us or by such Committee.

Statutes of the University shall prescribe and regulate the constitution and appointment of the said Joint Committee and all other matters relating to the said Committee which it may be thought are proper to be so prescribed and regulated.

The Council

XII. The Council shall be the Executive Body of the University and may exercise and do such of the powers, authorities, and things by this Our Charter granted to or authorised to be done by the Court, as are, or shall from time to time be assigned to the Council by Statute or by the Court, except the election of Members of the Court to be Members of the Council.

The Court shall have power by Statute to increase or diminish the number of the Council, by increasing or diminishing the number to be nominated, elected, or appointed by the persons or bodies possessing the right of nomination or appointment, or by adding representatives of other bodies, or in any other manner.

The Council shall have power to draft Statutes and Ordinances as and when they see fit, and to submit the same to the Court for consideration and enactment.

The acts of the Council shall not be invalidated by reason of any vacancy among its members.

The Senate

XIII. The constitution of the Senate shall be determined by Statute.

The Senate shall, subject to the Statutes and Ordinances of the University, and subject also to review by the Court, have the control and general regulation of the instruction and education within the University and shall have power to discuss and pronounce an opinion on any matter whatsoever relating to the University and such other powers and duties as may be conferred upon it by Statute or Ordinance.

Faculties

XIV. The University shall include the Faculties of Arts, Science, Medicine and Technology, and such other Faculties

(whether formed by the sub-division of an existing faculty or by the creation of a new faculty or otherwise) as may from time to time be constituted by Statute.

The constitution and powers of the several Faculties shall be determined by Statute.

Such Boards of Faculties shall be appointed by the Council as the Council may from time to time determine; the members of each Board (the numbers of whom shall be in the discretion of the Council) shall be appointed by the Council from among members of one or more Faculties, or from among the External Examiners of the University.

Convocation

XV. The Convocation shall consist of the Chancellor, the Vice-Chancellor, the Pro-Vice-Chancellor, the Members of the Senate, the Lecturers, and the registered Graduates of the University.

The Court shall have power to fix the conditions of registration and to prescribe the annual or other fees, or a composition therefor which shall be necessary for registration.

The Chancellor, if present, shall preside at the Meetings of Convocation.

Powers of Convocation

XVI. Convocation shall have the following powers:

To elect its own Chairman, who shall, in the absence of the Chancellor, preside at its Meetings.

To elect representatives as Members of the Court and Council.

To discuss and pronounce an opinion on any matter whatsoever relating to the University, including any matters referred to them by the Court or the Council.

To prescribe the mode of conducting the proceedings of Convocation and of registering the same, and of reporting the same to the Court, Council, or Senate, or any of them.

To enter into communication directly with the Court, Council, or Senate on any matter affecting the University.

Regulations as to Procedure

XVII. The Court, the Council, the Senate, the Faculties, the Boards of Faculties, and Convocation respectively may from time to time make regulations for governing their respective proceedings, subject to this Our Charter and to the Statutes and Ordinances of the University.

The Treasurer

XVIII. Our trusty and well-beloved Sir John Barran, Baronet, Treasurer of the Yorkshire College, shall be the first Treasurer of the University, and shall hold his office for one year. Subsequent appointments to the said office shall be made annually by the Court.

Members of the University

XIX. The Members of the University shall be the Chancellor, the Pro-Chancellor, the Vice-Chancellor, the Pro-Vice-Chancellor, the Treasurer, the Members of the University Court, the Professors, Emeritus Professors, Assistant Professors, Readers, Lecturers and Demonstrators, and such other Teachers of the University as the Court may determine, the Members of the Faculties, the holders of such other University offices as the Council may from time to time determine, the Wardens or other chief officers of Halls of Residence licensed by the University, Fellows, Graduates, and Undergraduates of the University.

The Undergraduates of the University shall be such persons attending lectures, or receiving instruction in the University as shall have matriculated under the Statutes.

Advisory Committees

XX. The Council may from time to time appoint Advisory Committees, consisting of members of the University, and also if the Council shall think fit, of persons who are not members of the University, and may delegate to such Committees such duties as it thinks fit as regards financial, administrative, or other matters affecting the University or any particular Faculty or Department, or the management or supervision of any buildings or property of the University.

Examiners and Examinations

XXI. All examinations held by the University shall be conducted in such manner as the Statutes and Ordinances shall prescribe, provided that at least one external and independent examiner shall be appointed by the Council for each subject or group of subjects forming part of the course of studies required for University degrees, but this proviso shall not apply to examinations for admission or entrance to the University.

Provided that in case of a vacancy occurring in or during any examination or of other emergency the Vice-Chancellor shall have power to appoint a substitute for that examination.

General Provisions

XXII. All the Degrees and courses of study of the University shall be open to women, subject to such conditions and regulations as the Court may prescribe, and women shall be eligible for any office in the University and for membership of any of its constituent bodies, and in the present Charter words implying the male sex shall be held to include the female, unless the context clearly shows the meaning to be otherwise.

XXIII. The University may from time to time found and endow Fellowships, Scholarships, Exhibitions, and other Prizes for which funds or property may, by bequest, donation, grant, or otherwise be provided, and may make regulations respecting the same and the tenure thereof, but, except as aforesaid, and except by way of prize, reward, special grant, or remuneration for services rendered or to be rendered, in the past, present, or future respectively, the University shall not make any gift, division or bonus in money unto or between any of its members.

XXIV. In addition to the buildings, lands, and premises of the University for the time being used and occupied for the immediate purposes thereof, the University shall have power to hold lands, tenements, and hereditaments of an annual value not exceeding in the aggregate, at the time or respective times of the acquisition of the same, the sum of £50,000.

XXV. The University may demand and receive such fees as the Court may from time to time appoint.

XXVI. The Court may from time to time alter, amend, or add to these presents by a Special Resolution in that behalf, and such alteration, amendment or addition shall, when allowed by Us, our Heirs, or Successors, or by any Committee of our Most Honourable Privy Council, or otherwise as We or They shall think fit, become effectual so that these presents shall thenceforward continue and operate as though they had been originally granted and made as so altered, amended, or added to. This Article shall apply to this Charter as altered, amended, or added to in any manner aforesaid.

XXVII. A Special Resolution is a Resolution passed at one meeting of the Court and confirmed at a subsequent meeting, held not less than one calendar month, nor more than three calendar months after the former, provided that the Resolution be passed at each meeting by a majority of not less than three-fourths of the Members of the Court present and voting thereon.

XXVIII. In this Our Charter "Statutes" means the Statutes set forth in the Schedule hereto and any Statutes altering, amending, adding to, or repealing the same or any of them which may hereafter be made and may be allowed by Us in Council, or by a Committee of Our Council.

"Ordinances" means Acts of the Court under the powers conferred by this Our Charter to which Our further sanction is not hereby or by Statute required.

"Regulations," except when otherwise required by the context, means Regulations made pursuant to this Our Charter or the Statutes.

XXIX. Our Royal Will and pleasure is that this Our Charter shall always be construed and adjudged in the most favourable and beneficial sense for the best advantage of the University, and the promotion of the objects of this Our Charter as well in all our Courts as elsewhere notwithstanding any non-recital, mis-recital, uncertainty or imperfection herein.

THE SCHEDULE

STATUTES

I.

The University Court

(a)

The University Court (hereinafter called the Court) shall consist of the following persons, viz. :

1. *Ex-officio* members, The Chancellor, the Pro-Chancellor, the Vice-Chancellor, and the Treasurer.

2 All present members of the Council of the Yorkshire College; all future members of the University Council, during their tenure of office; all present Perpetual and Life Governors of the College; and all future Donors of £1,000 to the University. If a donation of £1,000 be made by a company, society, or partnership firm, one member thereof may be nominated by the Donors as a member of the Court.

Six representatives of the Clothworkers' Company of London.

One representative of the Skinners' Company of London.

One representative of the Drapers' Company of London.

One representative of the Trustees of William Akroyd's Foundation.

One representative of the West Yorkshire Coal Owners' Association.

One representative of the Yorkshire Board of Legal Studies.

3. Representatives of Public Authorities, viz. :

Six from the County Council of the West Riding of Yorkshire.

Two from the County Council of the North Riding of Yorkshire.

Two from the County Council of the East Riding of Yorkshire.

Four from the Council of the County Borough of Leeds.

Two from the Council of the County Borough of Bradford.

One from the Council of the County Borough of York.

One from the Council of the County Borough of Hull.

One from the Council of the County Borough of Halifax.

One from the Council of the County Borough of Huddersfield.

One from the Council of the County Borough of Middlesbrough.

One from the Council of each of such other County Boroughs to be created in future as may be approved by the Court.

4. Representatives of the University :

Ten from the Faculties.

Representatives (not exceeding five in all) of the Convocation, viz :—one representative for every hundred members up to 500.

5. Representatives of other Institutions, viz. :

Representatives of such Affiliated Institutions as the Court may determine, and

One representative of the Victoria University of Manchester.

One representative of the University of Liverpool.

One representative of such other English University as the Court may determine.

6. Representatives of Schools :

Eight representatives of the Head Masters and Mistresses of Secondary Schools in Yorkshire, such representatives to be appointed by the Court.

7. Other Governors :

Three persons appointed by the Crown.

Ten persons elected by co-optation by the Court.

Except as otherwise by the Charter provided, and subject to the Statutes of the University, the Court may determine all matters relating to the nomination, appointment, and election of members of the Court and Council, and their respective periods or terms of office, and all other matters relating to the constitution of the Court and Council.

(b)

The Court shall have power to delegate its functions to the Council except as otherwise provided, and to delegate to the Senate the power to award Degrees other than *ad eundem* Degrees, Degrees conferred on persons who hold office in the University, and Honorary Degrees.

The periods during which members of the Court respectively shall hold office shall be as follows :

The Chancellor, the Pro-Chancellor, the Vice-Chancellor, the Treasurer, and all future members of the University Council shall hold office during the time they occupy the positions named respectively.

All present members of the Council of the Yorkshire College, and all present Perpetual and Life Governors of the Yorkshire College, and all future donors of £1,000 to the University, and the persons nominated by the donors in the case of donations of £1,000 made by a company, society, or partnership firm, shall hold office for their respective lives, or until resignation.

All other members mentioned in clause (a) 2 above, and all members mentioned in clause (a) 3 above, shall hold office for one year from the date of appointment. Of the members mentioned in clause (a) 4, the ten representatives of the Faculties shall hold office for two years from the respective dates of appointment, and five of such members, to be selected by lot or otherwise as the Court shall determine, shall retire in each year ; provided that if a representative of a Faculty ceases to be a member of that Faculty he shall cease to be a member of the Court. The representatives of Convocation shall hold office for two years from the date of appointment. Members mentioned in clause

(a) 5 and 6, shall hold office for two years from the respective dates of appointment. Members mentioned in clause (a) 7 shall hold office for five years from the respective dates of appointment, but of the members appointed by co-optation two, to be selected by lot or otherwise as the Court shall determine, shall retire each year.

All retiring members shall be eligible for re-appointment or re-election.

Appointees or representatives need not be members of the bodies appointing.

Any member of the Court may resign such membership at any time by letter addressed to the Registrar of the University.

Any casual vacancy occurring by resignation, incapacity, or death among the appointed or representative or co-opted members shall be filled up as soon as convenient by the person or body which appointed or co-opted the member whose place has become vacant. If such member was a member for a term of years the person appointed to supply his place shall be a member of the Court for the remainder of that term.

Fifteen members of the Court shall form a quorum, and, until the above-mentioned representative members have been appointed, the other members shall form the Court.

II.

The University Council

(a) The University Council (hereinafter called the Council) shall consist of the following persons, namely:—

The Chancellor, the Pro-Chancellor, the Vice-Chancellor, and the Treasurer.

Two representatives of the West Riding County Council.

One representative of the North Riding County Council.

One representative of the East Riding County Council.

Two representatives of the County Borough of Leeds.

One representative of the County Borough of Bradford.

One representative of the Council of the County Borough of York.

One representative of the Council of the County Borough of Hull.

One representative of the Council of the County Borough of Halifax.

One representative of the Council of the County Borough of Huddersfield.

One representative of the Council of the County Borough of Middlesbrough.

Two representatives of the Clothworkers' Company of London.

Five representatives to be elected by the Faculties of the University.

One member to be elected by Convocation.

One member to be nominated by the Crown.

Twelve members to be elected by the Court. Provided, nevertheless, that at first such of the present members of the Council of the Yorkshire College as have been elected thereto by the Board of Governors of the College shall take the place of the said twelve members; and of such members of the Council of the Yorkshire College four, to be selected by lot or otherwise as the Council may determine, shall retire every three years until the number of such members has been reduced to twelve or less; and on the number of such members being reduced to less than twelve the Court shall have power to appoint any other person or persons to make up such number to twelve. So soon as the number of such members shall have been reduced to twelve or less, the members of the Council of the Yorkshire College who at that time remain members of the Council, together with such appointee or appointees of the Court as aforesaid, shall hold office for the period and be subject to the provisions as to retirement hereinafter mentioned, as if all such members and appointees as aforesaid had been elected members of the Council by the Court on the day when such number as aforesaid was reduced to twelve or less.

The members of the Teaching Staff who are members of the Council, however elected (including the Vice-Chancellor), shall not exceed one fifth of the whole Council.

(b) The periods during which the members of the Council respectively shall hold office shall be as follows :

The Chancellor, the Pro-Chancellor, the Vice-Chancellor and the Treasurer shall hold office for the time during which they occupy the positions named respectively.

All other members of the Council shall hold office for one year from the date of appointment, except as otherwise hereinbefore provided and except members elected by the Court, who shall hold office for three years (four, to be selected by lot or otherwise as the Council shall determine, retiring each year), and except the person appointed by the Crown, who shall hold office for five years.

All retiring members shall be eligible for re-appointment or re-election.

Appointees or representatives need not be members of the bodies appointing.

Any member of the Council may resign such membership at any time by letter addressed to the Registrar of the University.

Any casual vacancy occurring by resignation, incapacity, or death among the appointed or representative members shall be filled up as soon as convenient by the person or body which appointed the member whose place has become vacant. If such member was a member for a term of years the person appointed to supply his place shall be a member of the Council for the remainder of that term.

Seven members of the Council shall form a quorum, and until the above named representative members have been elected, the other members shall form the Council.

III.

Powers of the Council

Subject to the provisions made in the Charter and Statutes, the Council shall have the following powers :

To nominate the Pro-Chancellor and the Vice-Chancellor.

To elect Professors of the University, and either to elect or to delegate to the Senate the election of any academic officers of the University other than Professors.

To elect a Registrar and other officers of the University for such periods and under such conditions as may be determined by the Council.

To institute Professorships, Assistant Professorships, Readerships, Lectureships, or other teaching offices, after giving the Senate the opportunity of reporting thereon.

To abolish or hold in abeyance, after giving the Senate the opportunity of reporting thereon, any Professorship, Readership, or other academic office in the University.

To draft Statutes and Ordinances as and when it sees fit and submit the same to the Court. Provided that any Statute or Ordinance relating to courses of study shall not be adopted without giving the Senate the opportunity of reporting thereon.

To make regulations for any purposes for which regulations are or may be authorised to be made.

To govern, manage, and regulate the finances, accounts, investments, property, business, and all affairs whatsoever of the University, and for that purpose to appoint Bankers, Deputy-Treasurers, and any other officers or agents whom it may seem expedient to appoint.

To invest any moneys belonging to the University, including any unapplied income in such stocks, funds, fully paid shares or securities as the Council shall from time to time think fit, whether authorised by the general law for the investment of trust moneys or

not, and whether within the United Kingdom of Great Britain and Ireland or not or in the purchase of freehold, copyhold, or leasehold hereditaments in the United Kingdom, including rent charges, or chief rents, with the like power of varying such investments from time to time by sale and re-investment or otherwise.

To sell, buy, exchange, lease, and accept leases of real and personal property on behalf of the University.

To provide the buildings, premises, furniture, and apparatus and other means needed for carrying on the work of the University.

To enter into, vary, carry out, and cancel contracts on behalf of the University. Any contract entered into on behalf of the University may be made in any manner authorised by law for the making of contracts by or on behalf of Companies incorporated under the Companies' Acts, 1862 and 1867.

IV.

Powers of the Vice-Chancellor

The Vice-Chancellor shall have the sole power of suspending or dismissing any offending student, subject to the right of appeal to the Visitor. He shall exercise general supervision over the educational arrangements of the University, regulate the admission of students, and maintain the discipline of the University, for which he shall be responsible to the Council.

V.

The Senate

The Senate of the University shall consist of the Vice-Chancellor and the Professors of the University, and of such other members of the Boards of Faculties hereinafter mentioned as the Court may, after report from the Senate, appoint, provided that the number of such other members appointed shall not exceed three, and that they shall hold office for such term only as the Court shall determine.

The Professors of the University within the meaning of the Charter shall include those persons who shall be appointed by the Council as such, and also the Professors of the Yorkshire College at the date of the Charter, who

shall hold their Professorships upon the same conditions as those upon which they held them at the date of the Charter, until such conditions shall be modified or altered by the Council.

The Senate shall have the following powers :

To make and submit to the Council, after report from the Board or Boards of Faculties concerned, all regulations for giving effect to the Statutes and Ordinances of the University relating to courses of study.

To appoint Internal Examiners after report from the Board or Boards of Faculties concerned.

To recommend External Examiners for appointment by the Council after report from the Board or Boards of Faculties concerned.

To report to the Council, after report from the Board or Boards of Faculties concerned, on all Ordinances relating to courses of study.

To report to the Council on Statutes or Ordinances or proposed changes of Statutes or Ordinances.

To report on any matter referred to or delegated to them by the Court or the Council.

To discuss and declare an opinion on any matter whatsoever relating to the University.

To appoint on delegation of the Council, Readers, Lecturers, and other academic officers of the University not being Professors.

To formulate and modify or revise, subject to the control of the Council, schemes for the organisation of Faculties of Arts, Science, Medicine, Technology, and any other Faculties of the University, and to assign to such Faculties their respective subjects; also to report to the Council as to the expediency of the establishment at any time of other Faculties, or as to the expediency of the abolition, combination, or subdivision of any Faculties.

To fix, subject to any conditions made by the Founders which are accepted by the Court, the times

and mode and conditions of competition for Fellowships, Scholarships, and other Prizes, and to award the same.

To do such other acts and things as the Court shall authorise.

No new Degree shall be established or other distinction of Honour or Merit adopted until the Senate has had an opportunity of reporting thereon.

VI.

Faculties

Each of the Faculties shall respectively consist of:—

1. The Professors assigned thereto by the Council.
2. Such Lecturers, Assistant Lecturers, and other teachers of the University as may be appointed to the Faculty by the Council on the recommendation of the Senate.
3. Such other persons as may be appointed by the Council of the University on the recommendation of the Senate.

Each of the Faculties shall have the power of electing a representative or representatives on the Court and Council of the University, but in the event of the number of Faculties being so increased that the members of the staff elected by them would exceed the proportion limited as hereinbefore expressed, the Council shall decide by what Faculties or combinations of Faculties the election shall be made.

Each Faculty shall have the power of presenting recommendations and reports to the Senate upon all matters connected with the subjects of study embraced by the Faculty.

The Faculty of Arts shall, until otherwise provided by Statute, include Economics and Law.

The Faculty of Technology shall, until otherwise provided by Statute, include Agriculture, Dyeing, Engineering, Leather Industries, Mining, and Textile Industries.

The Vice-Chancellor shall be a member of each of the several Faculties and Boards of Faculties.

There shall be a Dean of each Faculty elected by that Faculty, or otherwise as the Council shall direct. He shall preside at the meetings of the Faculty and hold office during such period and with such powers as shall be determined by Statute or Ordinance, and shall be eligible for re-election.

VII.

Powers of the Boards of Faculties

The Boards of Faculties respectively shall have the powers following :—

To regulate, subject to the control of the Senate, the teaching and study of the subjects assigned to the Board in question.

To make recommendations as to the appointment of Examiners.

To report to the Senate on Ordinances and Regulations dealing with courses of study for degrees and other distinctions, and on any questions relating to the work of the respective Faculties.

To deal with any matter referred or delegated to them by the Senate.

VIII.

Convocation

A Register shall be kept containing the names of all persons who are members of Convocation according to the provision made by the Charter.

The Register shall be conclusive evidence that any person whose name appears therein at the time of claiming to vote in Convocation is entitled to vote, and that any person whose name does not appear therein is not so entitled.

A meeting of Convocation shall be summoned at least once in every year and at such other times as Convocation may by its by-laws determine.

A meeting of Convocation may be called by the direction of the Chairman, and shall also be called on the requisition in writing of at least twenty members.

IX.

Auditor

The Court shall annually appoint an Auditor, who shall be a member of the Institute of Chartered Accountants of England and Wales, or of the Incorporated Society of Accountants and Auditors, in the active practice of his profession, who shall receive such remuneration as may from time to time be determined by the Court.

Acceptance of office by an Auditor shall be deemed to carry with it an undertaking by the Auditor to the University that every certificate given by him, or passing of accounts by him, implies that he has satisfied himself by full and careful investigation (made by himself or agents, for whom he undertakes to be responsible) by every reasonable means within his power, and after the exercise of due professional skill, that the statements in the certificate are true and accurate, and that any accounts certified or passed are complete, true, and accurate.

X.

Committee for considering objections by the Universities at Manchester and Liverpool

The Joint Committee to be constituted pursuant to Clause XI of the Charter for considering objections made by the Victoria University of Manchester and the University of Liverpool to proposed Statutes and Ordinances, shall consist of nine members, three to be appointed by each University.

The Joint Committee shall be convened by the Registrar of the Victoria University of Manchester.

XI.

Committee for considering objections to proposed Statutes and Ordinances of the University of Sheffield

Any Committee to be constituted for considering objections made by any of the Universities in Manchester, Liverpool and Leeds to proposed Statutes and Ordinances of the University of Sheffield shall consist of twelve members, three to be appointed by each of the said Universities.

Such Committee shall be convened by the Registrar of the Victoria University of Manchester.

XII.

Regulation and conduct of the Matriculation examination

The conditions and subjects of the Matriculation examination, which constitutes the entrance to the Degree courses of the University, together with the exemptions and variations from it, shall be regulated by a Joint Board as constituted in the following clauses of this section.

The Joint Board shall consist of eighteen members, five to be annually elected by each of the Universities in Manchester, Liverpool, and Leeds, and, unless by agreement between all the four Universities it shall be otherwise determined, three by the University in Sheffield, with power to co-opt persons of educational experience to the number of four.

When any change in the regulations regarding the Matriculation examination is carried in the Joint Board by a majority consisting of less than two-thirds of the members who are present, the question at issue shall be referred to each of the four Universities, which shall each then nominate two additional members on the Board for the purpose. The decision of the Board so constituted shall be final.

The Board shall send annual reports to each University.

The regulations of the Board regarding the Matriculation examination shall not affect the power of each University to admit students to such classes and courses as it may think fit.

The four Universities shall contribute to the expenses of the Joint Board in such proportions as may be hereafter determined.

Provided that this Statute shall continue and be in force for seven years from the date of its approval by His Majesty in Council.

XIII.

Periods of Study before Graduation

The period of study necessary to qualify any student for graduation shall not be less than three years, all of which shall be subsequent to the date at which the student passes the Matriculation examination.

This Clause shall come into operation not later than October 1st, 1906.

In the case of the Yorkshire College, and in the event of any other College or Institution, or any branch or department thereof, becoming affiliated to the University within six months from the date of the Charter, the University may accept attendance which commenced on or subsequent to the First day of October, 1903, at courses of study in the Yorkshire College or in such other College or Institution in place of attendance at courses of study in the University for the same period.

XIV.

Definitions

In these Statutes—

“Statutes” means the Statutes of the University.

“Ordinances” means Ordinances made pursuant to the Charter or Statutes.

“Regulations” means Regulations made pursuant to the Charter or Statutes.

In witness whereof We have caused these Our Letters to be made Patent.

Witness Ourselves at Westminster the twenty-fifth of April in the Fourth Year of Our Reign.

By Warrant under the King's Sign Manual.

MUIR MACKENZIE.



AN ACT

To merge the Yorkshire College in the University of Leeds and to transfer all the property and liabilities of the Yorkshire College to the University of Leeds and for other purposes.

(Royal Assent, 24th June 1904.)

Preamble WHEREAS the Yorkshire College was in the year one thousand eight hundred and seventy-eight constituted and incorporated under the Companies Acts 1862 and 1867 as an Association not for profit with the object of founding endowing and maintaining in the county of York a College or Colleges and by means thereof and otherwise of promoting the education of persons of both sexes and in particular of providing instruction in such sciences and arts as are applicable or ancillary to the manufacturing mining engineering and agricultural industries of the county of York and in ancient and modern languages history and literature medicine surgery law logic moral philosophy and other branches of education and with such other subordinate objects as are in the Memorandum of Association of the said College mentioned :

And whereas by Royal Charter dated the twentieth day of April one thousand eight hundred and eighty the Victoria University was constituted and founded having its seat in the city of Manchester with power to confer degrees and other distinctions except in medicine or surgery unless and until authority in that behalf should be given by further Charter or by Act of Parliament which authority was given by a supplemental Charter dated the twentieth day of March one thousand eight hundred and eighty-three :

And whereas in the year one thousand eight hundred and eighty-seven the Yorkshire College was admitted as a College in the Victoria University :

And whereas by Royal Charter dated the fifteenth day of July one thousand nine hundred and three it is provided that the Victoria University shall henceforth be called and known as the Victoria University of Manchester and (among

other things) that on the grant of a Charter establishing a university having its seat in Leeds or elsewhere in Yorkshire the Yorkshire College shall cease to be a College of the Victoria University of Manchester :

And whereas on the Petition of the Yorkshire College a Charter was on the twenty-fifth day of April one thousand nine hundred and four granted by His Majesty constituting in the city of Leeds a university by the name and style of the University of Leeds with faculties of Arts Science Medicine and Technology and such other faculties as may from time to time be constituted by the statutes of the University and with power to grant degrees and to do all acts and things which may be requisite in order to further the objects of the University as a teaching and examining body and to cultivate and promote art science and learning :

And whereas the Yorkshire College has consequently ceased to be a College in the Victoria University of Manchester and the governing body of the Yorkshire College are desirous and it is expedient that the College should be merged in the University of Leeds and that all its property and liabilities should be transferred to and vested in the last-named University :

And whereas it is expedient to empower the University of Leeds to hold examinations under Section 3 of the Medical Act 1886 and to elect a representative on the General Council mentioned in Section 7 of the same Act :

And whereas the objects of this Act cannot be attained without the authority of Parliament :

MAY IT THEREFORE PLEASE YOUR MAJESTY

That it may be enacted and be it enacted by the King's Most Excellent Majesty by and with the advice and consent of the Lords Spiritual and Temporal and Commons in this present Parliament assembled and by the authority of the same as follows (that is to say) :

1. This Act may be cited as the "University of Leeds Act, 1904." Short title.

2. On the passing of this Act the Yorkshire College shall be by virtue of this Act dissolved and cease to exist and all property real and personal of every description (including things in action) and all rights and privileges of the Yorkshire College which immediately before that date belonged

Dissolution of Yorkshire College and transfer of property to University of Leeds.

to or were vested in that College shall be by virtue of this Act without any conveyance or other instrument transferred to and vested in the University of Leeds for all the estate and interest therein of the Yorkshire College and shall be applied to the objects and purposes for which the University of Leeds is incorporated.

Transfer of liabilities.

3. On the passing of this Act all debts and liabilities of the Yorkshire College shall by virtue of this Act be transferred and attached to the University of Leeds and shall thereafter be discharged and satisfied by that University.

Saving for agreements deeds actions &c.

4. All agreements awards contracts deeds and other instruments and all actions and proceedings and causes of action or proceedings which immediately before the passing of this Act were existing or pending in favour of or against the Yorkshire College shall continue and may be carried into effect enforced and prosecuted by or in favour of or against the University of Leeds to the same extent and in like manner as if the University of Leeds instead of the Yorkshire College had been party to or interested in the same respectively.

Adjustment of property and liabilities &c.

5. (1) The Council of the Victoria University of Manchester the Council of the Owens College Manchester and the Council of the University of Liverpool or any of them may by agreement with the Council of the University of Leeds adjust and settle all questions arising with respect to any endowments property powers privileges authorities debts liabilities obligations or expenses in which the parties to the agreement are interested and also with respect to any examinations degrees and other University and College matters.

(2) An agreement under this section may provide for the transfer retention division apportionment or commutation of any endowments property debts liabilities or obligations and for a payment being made by any party to the other or others in respect of any such transfer retention division apportionment or commutation or in respect of the salary or remuneration of any officer or person and generally may make as between the parties to the agreement any provisions necessary or proper for carrying into effect the purposes of this Act.

(3) In default of agreement on any such question as aforesaid or so far as such agreement does not extend the question shall be referred to a single arbitrator to be nominated by the Lord President of His Majesty's Council on the application of any party and his award may provide for any matter for which an agreement might have provided. And subject as aforesaid the provisions of the Arbitration Act 1889 shall apply.

6. All professors and other members of and persons attached to or associated with the teaching staff of the Yorkshire College and all salaried or paid officers and servants of the Yorkshire College shall hold as nearly as practicable the same offices and places in the University of Leeds as they held in the said College immediately before the passing of this Act and upon the same terms and conditions unless and until the Council of the University shall otherwise decide.

Saving for existing officers of Yorkshire College.

7. Any power or right of the Yorkshire College or of the Council Senate or other members of that College as such to appoint or nominate a member of the governing body of any educational charitable or other institution shall on the passing of this Act be transferred to and may be exercised by the Council of the University of Leeds.

Transfer of powers to nominate members of certain governing bodies.

8. The University of Leeds is hereby empowered to hold qualifying examinations in medicine surgery and midwifery for the purpose of registration under the Medical Acts as if the University had been a University in the United Kingdom legally qualified at the passing of the Medical Act 1886 to grant diplomas in medicine and surgery and the provisions of Part I of that Act shall be read and have effect accordingly.

Power of University of Leeds to hold examinations under 49 and 50 Vict. c. 48.

9. The Council of the University of Leeds shall be entitled to choose one representative to be a member of the General Council constituted by the Medical Acts and Section 7 of the Medical Act 1886 shall be read and have effect as if the University of Leeds had been expressly included therein.

Power of University of Leeds to choose representative on General Medical Council.

10. Section 7 of the Mortmain and Charitable Uses Act 1888 shall be read and have effect as if the words "and the University of Leeds" were therein inserted after the words "Victoria University."

Application of Section 7 of Mortmain &c. Act 1888 (51 and 52 Vict. c. 42).

Construction
of bequests
in favour of
Yorkshire
College.

11. Any will deed or other document whether made or executed before or after the passing of this Act which contains any bequest gift or trust in favour of the Yorkshire College shall on and after the passing of this Act be read and have effect as if the University of Leeds were therein named instead of the Yorkshire College.

As to the
Charitable
Trusts Acts.

12. The Charitable Trusts Acts 1853 to 1894 shall not extend to the University of Leeds or to any college or hall therein.

Copy of Act
to be
registered.

13. The Council of the University of Leeds shall deliver to the Registrar of Joint Stock Companies a printed copy of this Act and he shall retain and register the same and if such copy is not so delivered within three months from the passing of this Act the University of Leeds shall incur a penalty not exceeding two pounds for every day after the expiration of those three months during which the default continues and any member of the said Council who knowingly and wilfully authorises such default shall incur the like penalty. Every penalty under this section shall be recoverable summarily.

There shall be paid to the Registrar by the University of Leeds on such copy being registered the like fee as is for the time being payable under the Companies Act 1862 on registration of any document other than a Memorandum of Association.

Costs of
Act.

14. The costs charges and expenses of and incidental to preparing and obtaining this Act shall be defrayed by the University of Leeds out of income or of the capital of the property by this Act transferred to the University or if the Council of the University think fit out of money to be raised by sale or mortgage of some part of the said property.

AN ACT

To extend the privileges of the Graduates of the University of Leeds.

(Royal Assent, 15th August, 1904.)

BE it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows :—

1. Wherever any office is or shall be open to graduates of the Universities of Oxford, Cambridge, and London, and of the Victoria University of Manchester, or wherever any privilege or exemption has been or shall be given by any Act of Parliament or regulation of any public authority to graduates of the Universities of Oxford, Cambridge, and London, and the Victoria University of Manchester, graduates of the University of Leeds having the degree which would be a qualification if it had been granted by the University of Oxford, Cambridge, or London, or the Victoria University of Manchester, may become candidates for and may hold any such office and shall be entitled to all such privileges as fully as graduates of any of the last-mentioned universities.

2. This Act may be cited as the Leeds University Act, 1904.

Extension of
privi-
leges of
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uates of
Leeds
Univer-
sity.

Short
title.

ORDINANCES

made by the Court in accordance with the provisions of
Clauses X and XI of the Charter

I. AFFILIATED COLLEGES AND INSTITUTIONS

1. Colleges and Institutions, or parts thereof, may be admitted to affiliation after report by the Senate. The Senate, before recommending the affiliation of any such College or Institution, shall satisfy itself :

- (a) That the College or Institution has attained a satisfactory standard of educational efficiency for the purposes for which affiliation is sought, and is established on a permanent basis.
- (b) That the majority of regular students in such College or Institution are of the age of sixteen years.

2. In the case of any affiliated College or Institution, or of any part of such College or Institution recognised for the purposes of this clause, students who have attained the age of seventeen years, and have passed the Matriculation examination of the University, or are exempt therefrom, shall be allowed to attend at any such College or Institution a part or the whole of a course of study, approved by the Senate of the University as exempting from such courses of study in the University as the Council may approve, provided that in no case shall the University confer a degree upon any person who has not attended in the University during two years at least the courses of study which have been recognised for such degree.

3. The Council shall, after a report from the Senate, determine the privileges to which the students of any such affiliated College or Institution shall be admitted.

4. Any College or Institution desiring to avail itself of the foregoing Ordinance shall

- (a) Make provision for the representation of the University on the body which determines the annual plan of study, in so far as it concerns the courses submitted for the approval of the University ;

- (b) Submit for the approval of the Senate of the University day courses of study, whose duration, scope, and standard shall be equivalent to the corresponding courses of the University.

5. The University shall inspect from time to time the buildings and equipment for teaching provided in any such College or Institution, and shall satisfy itself as to the qualifications of any teacher therein appointed to conduct the courses offered in place of University courses.

6. The Council, after a report from the Senate, shall be entitled at any time to withdraw any privileges which may have been granted to any College or Institution under these Ordinances, and to remove the said College or Institution from affiliation.

Affiliated Colleges

THE COLLEGE OF THE RESURRECTION, MIRFIELD (May 18, 1904). By resolution of the Council the students of this College are exempt from attendance at the University upon the first of the three years of study required for the B.A. Ordinary or Honours degree.

THE TECHNICAL COLLEGE, HUDDERSFIELD. (March 2, 1906). By resolution of the Council, attendance upon certain classes in this College is recognised as exempting from attendance upon classes in the University in the first year of the courses required for the degrees of B.A., B.Sc. (including Engineering), and M.B. and Ch.B.

II. DEGREES IN ARTS

1. The degrees in Arts shall be :

Bachelor of Arts (B.A.)

Master of Arts (M.A.)

Doctor of Letters (Litt.D.).

Degree of Bachelor of Arts

2. The degree of Bachelor of Arts shall be conferred either as an Ordinary degree or as a degree with Honours.

3. All candidates for the degree of Bachelor of Arts shall be required to have passed the Matriculation examination, and thereafter to have pursued approved courses of study for not less than three academic years.

Ordinary Degree of Bachelor of Arts

4. The complete course of study for the Ordinary degree of Bachelor of Arts shall be divided into two parts, called respectively the Intermediate course and the Final course.

5. Every candidate shall be required to pass two examinations, the Intermediate and the Final.

6. The Intermediate and Final examinations shall ordinarily be held in June of each year. There shall also be a supplementary Intermediate examination in September, at which those candidates only may present themselves who have obtained the permission of the Senate.

7. Candidates who have failed at an Intermediate examination in June, and have obtained permission to present themselves at the following supplementary examination, may be excused such part of the supplementary examination as the combined examination committee, on report from the separate examination committee concerned, may determine.

8. Candidates who have failed at a Final examination may present at the June examination of the following year those books and periods in which they have already been examined.

9. All candidates shall be required, before presenting themselves for the Intermediate or Final examination, to furnish to the Registrar certificates testifying that they have regularly attended the prescribed courses of study, and performed the class exercises to the satisfaction of the Professor or Lecturer, in each of the subjects which they offer at the examination. Some modification of the amount of attendance required may, in exceptional cases, be made by the Vice-Chancellor, on the recommendation of the head of the department concerned.

Intermediate Course and Examination

10. Every candidate shall be required, after passing the Matriculation examination, to attend during one academic year approved courses of study in five subjects, and to pass in each of the subjects selected, viz.:

- i, ii. Two languages from the following list: Greek, Latin, French, German, one of which must be Greek or Latin.
- iii. *Either* (a) English Literature ; *or* (b) History (Ancient or Modern), *or* (c) Political Economy.
- iv. *Either* (a) Logic ; *or* (b) Mathematics ; *or* (c) one of the following Natural Sciences : Physics, Chemistry, Zoology, Botany, Geology.
- v. Any subject under i, ii, iii, iv not already selected, provided that no candidate may take (a) both Ancient and Modern History, (b) two Natural Sciences.

The examination in each modern language shall include an oral examination.

Final Course and Examination

11. Every candidate shall be required to attend approved courses of study in three principal subjects and one subsidiary subject, and to pass in each of the subjects selected. The same subject may not be taken both as a principal and as a subsidiary subject. An essay paper shall be set for all candidates at the Final examination.

12. The course of study in each principal subject shall extend over two academic years, and the course of study in the subsidiary subject shall extend over one academic year.

13. The principal subjects shall be selected from the following list: Greek, Latin, French, German, English Language and Literature, History, Philosophy, Economics, Education, Pure and Applied Mathematics. Every candidate shall be required to take as a principal subject one of the following: Greek, Latin, French, German. The examination in each modern language shall include an oral examination.

14. The subsidiary subjects shall be selected from the following list: English Literature, History, Philosophy.

Economics, Education, Pure Mathematics, Applied Mathematics. The course of study in a subsidiary subject may be taken either in the first or second year of the Final course.

15. Candidates who have attended, during the first year of their Final course, the prescribed course of study in a subsidiary subject, may present themselves in June of that year for examination in such subsidiary subject. Part of the examination in Education, to be defined by Regulation, may also be taken at the end of the first year of the Final course.

Degree of Bachelor of Arts with Honours

1. Candidates for the degree of Bachelor of Arts with Honours shall, except as hereinafter stated, be required to furnish certificates of having attended courses of instruction approved by the University and extending over not less than three academic years in one of the Honours Schools of the University hereafter enumerated.

2. Every candidate for the degree of Bachelor of Arts with Honours shall be required to present himself for examination at the end of the third or fourth academic year from the time when he has entered upon one of the courses of instruction approved by the University for such degree, unless he shall present a medical certificate of illness satisfactory to the Senate. This examination shall ordinarily be held in June of each year.

3. Candidates for the degree of Bachelor of Arts with Honours may present themselves for examination in any of the following Honours Schools on furnishing certificates of having pursued, to the satisfaction of the Senate, the courses required for such Honours Schools in the University, viz.:

Classics

English Language and Literature

Modern Languages and Literatures

History

Philosophy

Economic and Political Science

4. Candidates who have passed the Final examination for an Ordinary degree of Bachelor of Arts may, with the

sanction of the Senate and on furnishing certificates of having attended, during the academic year following such Final examination for the Ordinary degree, the third year's, or, during the two academic years following such Final examination, the second and third years' course approved by the University for any one of its Honours Schools, present themselves for examination for the degree of Bachelor of Arts with Honours in such School.

5. No candidate for a degree of Bachelor of Arts with Honours shall be admitted more than once to examination in the same Honours School ; but students who have passed the Final examination in any of the Honours Schools may be admitted to the Final examination in any other Honours School after the expiration of one or two years, on presenting certificates of having attended, during the period in question, courses approved by the University.

Provided that in the said other Honours School selected, candidates shall not present themselves for the Final examination more than two academic years after the Final examination in Honours already passed by them, and also that no candidate be admitted to examination in any Honours School after a longer period than five years has elapsed since the date of his first entrance upon a prescribed course of study for an Honours School.

6. Names of candidates who have passed the examination for the degree of Bachelor of Arts with Honours shall be published in such form as to distinguish the Honours School in which severally they may have passed ; the names of those who have passed in Honours being drawn up in three classes, and each class being arranged in alphabetical order.

7. Candidates who have not acquitted themselves so as to deserve Honours may be excused the whole or such part of the examinations for the Ordinary degree as the combined examination committee may determine.

Degree of Master of Arts

I

1. The degree of Master of Arts may be conferred, on payment of the proper fee, upon registered Bachelors of Arts when of not less than one year's standing from the

date of their graduation as Bachelors, subject to the conditions contained in the following paragraphs.

2. Bachelors of Arts who have graduated with Honours may proceed to the degree of Master of Arts on presenting a dissertation satisfactory to the Senate on a subject approved by the Board of the Faculty of Arts.

3. Bachelors of Arts who have obtained the Ordinary degree shall be required to pass an examination in a subject or group of subjects upon which instruction is given in the Faculty of Arts, and to present a dissertation satisfactory to the Senate on a subject approved by the Board of the Faculty of Arts, or, if they do not present a dissertation, to pass a more extended examination. In special cases it shall be in the power of the Senate, on the application of the candidate and on the special recommendation of the Board of the Faculty of Arts, to award the degree upon a dissertation only. Candidates wishing to apply for such remission must make application to the Board of the Faculty of Arts not later than the end of the October preceding the examination. Regulations shall determine the subjects and groups of subjects in which the examination will be held. Certificates of attendance on courses of study in the University shall not be required. Bachelors of Arts who have obtained Honours in any school after the Ordinary degree shall be held to have satisfied the requirements of this clause.

4. All candidates who offer a dissertation, either as sole test or in combination with other tests, may be called upon to present themselves for an examination—written, or oral, or both—in the theme of their dissertation.

5. The names of candidates who have passed the examination for the degree of Master of Arts shall be arranged in alphabetical order without distinction of classes.

II

Graduates or persons who have passed the Final examination for a degree of other approved Universities shall, if they present evidence satisfactory to the Senate that they are qualified to pursue a course of advanced study or research, be permitted to enter the University and to become candidates for the degree of M.A., without taking the B.A. degree,

after not less than two years of such advanced study or research. Such candidates shall be required to give evidence to the Senate at the end of the first year of their period of study that their work has been satisfactory, and at the end of their second year they shall be required to present a dissertation, and to satisfy such further test, if any, as the Senate shall deem expedient. They will, as a rule, be called upon to present themselves for an examination—written, or oral, or both—in the theme of their dissertation.

Degree of Doctor of Letters

1. The Degree of Doctor of Letters shall be conferred by the University upon registered Masters of Arts of the University who shall be deemed by the Senate, after considering a report from the Board of the Faculty of Arts, to have distinguished themselves by special research or learning.

Provided that the Senate may, in such cases as it shall think fit, after considering a report from the Board of the Faculty of Arts, also require candidates to pass such an examination as it may from time to time determine.

2. A Master of Arts of the University may make application for the Degree of Doctor of Letters in the sixth or any subsequent year from the date of his admission to the Bachelor's degree.

3. Such application shall be made in writing to the Registrar, and shall contain a full statement of the grounds on which the claim for the degree is based, together with one or more copies of any thesis, whether in print or in manuscript, which the applicant may desire to submit in support of the application.

4. If the application be approved by the Senate, the degree may be conferred at the expiration of not less than six years from the date of admission to the Bachelor's degree.

III. DEGREE IN COMMERCE

1. The degree in Commerce shall be that of Bachelor of Commerce (B. Com.).

2. All candidates for the degree of Bachelor of Commerce shall be required to have passed the Matriculation examination, with at least one modern foreign language as one of

the subjects, and thereafter to have pursued approved courses of study for not less than three academic years.

3. The complete course of study for the degree of Bachelor of Commerce shall be divided into two parts, called respectively the Intermediate course and the Final course.

4. Every candidate shall be required to pass two examinations, the Intermediate and the Final.

5. The Intermediate and Final examinations shall ordinarily be held in June of each year. There shall also be a supplementary Intermediate examination in September, at which those candidates only may present themselves who have obtained the permission of the Senate.

6. Candidates who have failed at an Intermediate examination in June, and have obtained permission to present themselves at the following supplementary examination, may be excused such part of the supplementary examination as the combined examination committee, on report from the examination committee for the degree of Bachelor of Commerce, may determine.

7. All students shall be required, before presenting themselves for the Intermediate or Final examination, to furnish to the Registrar certificates testifying that they have regularly attended the prescribed courses of study, and performed the class exercises to the satisfaction of the Professor or Lecturer, in each of the subjects which they offer at the examination.

Intermediate Course and Examination

8. Every candidate shall be required, after passing the Matriculation examination, to attend during not less than one academic year approved courses of study in five subjects, viz :

i. Economics : the outlines of the economic history of England in the Nineteenth Century, and the general elementary principles of Economics

ii. The economic geography of the British Empire

- iii. A modern foreign language (French or German)
 - iv, v. *Two* of the following :
 - A second modern foreign language (French or German, whichever of the two has not been offered under iii)
 - Mathematics
 - European History from 1763,
- and to pass in each of the subjects offered. The examination in each modern foreign language shall include an oral examination.

Final Course and Examination

9. Every candidate shall be required, except as provided in clause 10, to attend approved courses of study, extending over two years, and to pass an examination in each of the following principal subjects :
- i. Economics : comprising (a) advanced general Economics (b) a special economic subject
 - ii. A modern foreign language (French or German)
 - iii. A second modern foreign language (French or German, whichever of the two has not been offered under ii)
 - iv. Accountancy.

The examination in each modern foreign language shall include an oral examination. An essay shall also form part of the examination.

10. For the second modern foreign language candidates may substitute the two following, studied each for one year as a subsidiary subject :

- (a) The economic geography of the principal foreign countries
- (b) Commercial Law

Candidates may take the course of study in a subsidiary subject in the first year of the Final course, and present themselves at the end of that year for examination in such subject.

IV. DEGREES IN LAW

1. The degrees in Law shall be :

Bachelor of Laws (LL.B.)

Master of Laws (LL.M.)

Doctor of Laws (LL.D.).

Degree of Bachelor of Laws

2. All candidates for the degree of Bachelor of Laws shall be required to have passed the Matriculation examination, except those who may be exempted therefrom, and thereafter to have pursued approved courses of study for not less than three academic years.

3. The complete course of study for the degree of Bachelor of Laws shall be divided into two parts, called respectively the Intermediate course and the Final course.

4. Every candidate shall be required to pass two examinations, the Intermediate and the Final.

5. The Intermediate and Final examinations shall ordinarily be held in June of each year.

6. All candidates shall be required, before presenting themselves for the Intermediate or Final examination, to furnish to the Registrar certificates testifying that they have regularly attended the prescribed courses of study in each of the subjects which they offer at the examination.

Intermediate Course and Examination

7. Every candidate shall be required, after passing the Matriculation examination, or after obtaining exemption therefrom, to attend during one academic year approved courses of study, and to pass in each of the following subjects :

- i. Roman Law
- ii. Elements of English Law
- iii. The Law and Custom of the English Constitution
- iv. Any subject included in the course for the Intermediate examination for the Ordinary degree of B.A. or B.Com.

Provided that candidates who are already graduates of this or any other University within the United Kingdom shall not be required to attend classes or to be examined in iv.

Final Course and Examination

3. Every candidate shall be required to attend during two academic years one or other of the following courses of study, and to pass in each of the subjects of the selected course :

Course I.

- i. Roman Law
- ii. Jurisprudence
- iii. Public *or* Private International Law.

An essay paper shall be set at the Final examination for all candidates taking this course.

Course II.

- i. Property, Real and Personal (including Conveyancing)
- ii. Equity (including Company Law)
- iii. Common Law (including Criminal Law and Bankruptcy)
- iv. Evidence and Procedure
- v. Jurisprudence.

Degree of Master of Laws.

1. The degree of Master of Laws may be conferred on payment of the proper fee upon registered Bachelors of Laws when of not less than one year's standing from the date of their graduation as Bachelors, subject to the conditions contained in the following paragraphs

2. Bachelors of Laws who have obtained their degree by attendance at the classes of Course I and examination in the subjects of that course shall be required to pass an examination in the subjects of Course II. Certificates of attendance on Course II shall not be required.

3. Bachelors of Laws who have obtained the degree by attendance at the classes of Course II and examination in the subjects of that Course, shall be required to pass an examination in the subjects of Course I. Certificates of attendance in Course I shall not be required.

Degree of Doctor of Laws

1. The degree of Doctor of Laws shall be conferred by the University upon registered Masters of Laws of the University who shall be deemed by the Senate, after considering a report from one or more of the Boards of Faculties, to have distinguished themselves by special research or learning.

Provided that the Senate may, in such cases as it shall think fit, after considering a report from one or more of the Boards of Faculties, also require candidates to pass such an examination as it may from time to time determine.

2. A Master of Laws of the University may make application for the degree of Doctor of Laws in the sixth or any subsequent year from the date of his admission to the Bachelor's degree.

3. Such application shall be made in writing to the Registrar, and shall contain a full statement of the grounds on which the claim for the degree is based, together with one or more copies of any thesis, whether in print or in manuscript, which the applicant may desire to submit in support of the application.

4. If the application be approved by the Senate, the degree may be conferred at the expiration of not less than six years from the date of admission to the Bachelor's degree.

V. DEGREES IN SCIENCE

1. The degrees in Science shall be :—

Bachelor of Science (B.Sc.)

Master of Science (M.Sc.)

Doctor of Science (D.Sc.).

Degree of Bachelor of Science

2. The degree of Bachelor of Science shall be conferred either as an Ordinary degree or as a degree with Honours.

3. All candidates for the degree of Bachelor of Science shall be required to have passed the Matriculation examination, and thereafter to have pursued approved courses of study for not less than three academic years.

Ordinary Degree of Bachelor of Science

4. The complete course of study for the Ordinary degree of Bachelor of Science shall be divided into two parts, called respectively the Intermediate course and the Final course.

5. Every candidate shall be required to pass two examinations, the Intermediate and the Final.

6. The Intermediate and Final examinations shall ordinarily be held in June of each year. There shall also be a supplementary Intermediate examination in September, at which those candidates only may present themselves who have obtained the permission of the Senate.

7. Candidates who have failed at an Intermediate examination in June, and have obtained permission to present themselves at the following supplementary examination, may be excused such part of the supplementary examination as the combined examination committee, on report from the examination committee concerned, may determine.

8. All candidates shall be required, before presenting themselves for the Intermediate or Final examination, to furnish to the Registrar certificates testifying that they have regularly attended the prescribed courses of study, and performed the class exercises to the satisfaction of the Professor or Lecturer, in each of the subjects which they offer at the examination. Some modification of the amount of attendance required may, in exceptional cases, be made by the Vice-Chancellor on the recommendation of the head of the department concerned.

9. The proficiency of candidates in laboratory work may be determined by inspection of their laboratory note books and the consideration of terminal or sessional reports from their laboratory teachers. Candidates may also be called upon to undergo a special practical examination at the Intermediate and Final stages of the degree course.

It shall always be in the power of the external examiner to impose a practical or *viva voce* examination on such occasions as he may think desirable.

Intermediate Course and Examination

10. Every candidate shall be required, after passing the Matriculation examination, to attend during not less than one academic year approved courses of study in three subjects, viz. :

Physics

Two of the following :

Mathematics

Chemistry

Zoology

Botany

Geology,

and to pass in each of the subjects selected.

Candidates who propose to take an Applied Science (see section 15) in the Final course must pass in the subjects of the Intermediate course specified in section 20.

11. Every candidate is further required, at some time during his course, to attend an approved course of study and pass in an additional subject at the Intermediate standard, selected from the following: Greek, Latin, French, German, English Literature, Ancient or Modern History, Logic, Economics, Economic Geography, Mathematics, Chemistry, Zoology, Botany, Geology. In the case of candidates taking an Applied Science as a principal subject in the Final course (section 20 below), this list is increased by the addition of Applied Mechanics and General Engineering.

12. A descriptive essay relative to the scientific or technical work of the candidates will be set as part of the Intermediate examination, and will be examined by the examiners in English in co-operation with the Examiners in the scientific department concerned, and in the event of a student failing in this portion of the Intermediate examination, he shall be permitted to take it again at any subsequent Intermediate examination.

Final Course and Examination

13. Every candidate will be required to attend approved courses of study either in two principal subjects, or in one principal subject and two subsidiary subjects, provided that the same subject shall not be taken both as a principal and a subsidiary subject.

14. The course of study in each principal subject shall extend over at least two years beyond the Intermediate standard, and the course of study in a subsidiary subject shall extend over at least one year beyond the Intermediate standard.

Principal Subjects

15. The principal subjects shall be selected from the following lists:

Pure Sciences:

Mathematics
Physics
Chemistry
Zoology
Botany
Physiology
Geology.

Applied Sciences:

Mechanical Engineering
Civil Engineering
Electrical Engineering
Mining Engineering
Gas Engineering
Fuel and Metallurgy.
Agriculture
Applied Chemistry (Colour Chemistry and
Dyeing)
Applied Chemistry (Chemistry of Leather
Manufacture).

Every candidate taking Physics as a principal subject is required to have passed in Mechanics at the Matriculation examination, or to satisfy the Professor of Physics that he possesses an adequate knowledge of the subject.

In the event of Physiology being chosen as a principal subject, the second principal subject or the two subsidiary subjects shall be chosen from among the following: Physics, Chemistry, Zoology, Botany. In any case, six months' instruction in Human Anatomy will be required.

Every candidate taking an Applied Science as a principal subject is required to pursue one of the courses specified in section 20.

Subsidiary Subjects

16. The subsidiary subjects shall be selected from the following list :

Mathematics P. (Pure)
Mathematics P.A. (Pure and Applied)
Physics
Chemistry
Zoology
Botany
Physiology
Geology
Human Anatomy
Bacteriology
Education (including the teaching of
Elementary Science).

Mathematics P. and P.A. cannot be taken together as subsidiary subjects.

17. The following subjects shall rank as subsidiary subjects in connection with courses where Mechanical or Civil or Electrical or Mining Engineering is taken as a principal subject :

Mechanical Engineering
Civil Engineering
Electrical Engineering
Mining Engineering.

18. The course of study in the subsidiary subjects may be taken either in the first or second year of the Final course.

19. Candidates who have attended, during the first year of their Final course, the prescribed course of study in a subsidiary subject, may present themselves in June of that year for examination in such subsidiary subject. When Education is taken as a subsidiary subject, part of the examination may be taken at the end of each of the two years of the Final course. Candidates who fail to satisfy the examiners in such parts of the Final examination as they have taken at the end of the first year of their Final course shall be required to repeat this part of the examination at a subsequent June examination.

Courses for candidates taking an Applied Science

20. Candidates selecting an Applied Science as a principal subject are required to attend courses of study and to present themselves for examination in definite subjects, as specified below :

Mechanical Engineering :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Mechanical Engineering ; subsidiary subjects, Mathematics, and either Physics or Civil or Electrical or Mining Engineering, but in any case the candidate shall produce a certificate of having satisfactorily attended a prescribed course in Physics.

Civil Engineering :

Intermediate—Mathematics, Physics and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Civil Engineering ; subsidiary subjects, Mathematics, and either Geology or Mechanical or Electrical or Mining Engineering, but in any case the candidate shall produce a certificate of having satisfactorily attended a prescribed course in Geology.

Electrical Engineering :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Electrical Engineering ; subsidiary subjects, Mathematics, and either Physics or Mechanical or Civil or Mining Engineering, but in any case the candidate shall produce a certificate of having satisfactorily attended a prescribed course in Physics.

Mining Engineering :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Mining Engineering ; subsidiary subjects, two of the following : Mathematics, Geology, Mechanical, or Electrical Engineering, but candidates shall produce certificates of having satisfactorily attended prescribed courses of study in each of these four subjects.

Gas Engineering :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Gas Engineering ; subsidiary subjects, Chemistry and Engineering.

Fuel and Metallurgy :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Fuel and Metallurgy ; subsidiary subjects, Chemistry and Mechanical Engineering.

Agriculture :

Intermediate—Physics, and two of the following : Chemistry, Zoology, Botany, Geology ; together with an additional subject at Intermediate standard (see section 11).

Final—Agriculture, as principal subject, together with one of the pure sciences specified under section 15 above as the second principal subject, or two of the pure sciences specified under section 16 as subsidiary subjects.

Applied Chemistry (Colour Chemistry and Dyeing) :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, General Engineering.

Final—Two principal subjects, viz : Colour Chemistry and Dyeing, and Chemistry.

Candidates presenting Applied Chemistry (Colour Chemistry and Dyeing) may not present this subject, except with the special permission of the Senate, until the end of the fourth year of study. Such candidates may take the examination in Chemistry at the end of the second year.

Applied Chemistry (Chemistry of Leather Manufacture) :

Intermediate—Physics, and two of the following:
Mathematics, Chemistry, Zoology, Botany, and an additional subject at Intermediate standard (see section 11).

Final—Two principal subjects, viz: Chemistry of Leather Manufacture, and Chemistry.

Degree of Bachelor of Science with Honours

1. The degree of Bachelor of Science with Honours will be awarded in the following subjects:

Mathematics
Physics
Chemistry
Zoology
Botany
Physiology
Geology
Civil Engineering
Mechanical Engineering
Electrical Engineering
Mining Engineering
Gas Engineering
Fuel and Metallurgy
Applied Chemistry (Chemistry of Leather Manufacture)
Applied Chemistry (Colour Chemistry and Dyeing)
Agriculture.

2. Candidates will be required to present certificates of attendance upon approved courses of study extending over three or four years, as defined under the regulations for each

Honours School. Such certificates of attendance shall only be granted when the candidate has regularly attended to the work of the classes and has acquitted himself satisfactorily at the class examinations.

3. Candidates for admission to an Honours examination will be required to have passed the Intermediate and the Final examinations as prescribed for the Ordinary Degree of B.Sc., subject to the qualifications contained in the Clauses 5 and 6 *infra*.

4. Such candidates as, prior to entrance to the University, declare their intention of proceeding to the degree of B.Sc. with Honours in one of the Honours Schools, may be admitted to the Intermediate examination prescribed in the Regulations for the Honours School in question, without previous attendance at the University. In this case, they will be required to pass simultaneously in all of the three subjects prescribed, and will also be required then or during their course of study to pass the examination in a fourth subject at the Intermediate stage as required by Ordinance.

5. Candidates who have not passed the Intermediate examination prior to entrance at the University shall be required to pursue courses of instruction in the subjects of the Intermediate examination (including the fourth, or additional subject) as prescribed in the regulations of the several Honours Schools, but (a) they shall not be required to pass simultaneously in all the subjects prescribed at the Intermediate examination, and (b) they shall be excused from presenting themselves at the Intermediate examination in any subject which they will subsequently offer at a higher standard.

6. All candidates shall be required to pursue courses of instruction in the subjects of the Final examination as prescribed in the regulations of the several Honours Schools, but they shall be excused from presenting themselves for examination in any subject which they will subsequently offer at a higher standard.

7. A special Honours examination, hereinafter called the Honours examination, shall be held in the subjects of the Honours stage.

8. Candidates who shall present evidence satisfactory to the Senate that they are qualified to enter upon a course of research may receive permission to pursue such a course, and to offer a thesis of their work in place of part or the whole of the Honours examination; but no candidate shall be excused the whole of the Honours examination unless he has satisfied the examiners in the subject of his Honours School as a principal subject for the Ordinary degree, in addition to the one principal subject or two subsidiary subjects required for such degree.

Each application for the recognition of research work must be made to the Senate not later than the last day of the October preceding the Honours examination, together with a statement of the intended subject of research, and a summary of the course of work actually pursued must be sent in to the examiners not later than the first day of the May preceding the Honours examination.

Candidates whose thesis does not satisfy the examiners shall not receive the Honours degree, but may be recommended for the Ordinary degree.

9. Names of candidates who have passed the examination for the degree of Bachelor with Honours will be published in such form as to distinguish the Honours School in which severally they may have passed; the names of those who have passed in honours being drawn up in three classes, and each class being arranged in alphabetical order.

10. Candidates who have not acquitted themselves so as to deserve Honours, but have reached the standard of the Ordinary degree, may be recommended for that degree.

11. Candidates who have passed the examination for the Ordinary degree of Bachelor of Science may (during the succeeding year or the two years immediately succeeding) proceed with the course of study in an Honours School.

12. Every candidate for the degree of Bachelor of Science with Honours shall be required to present himself for examination at the end of the third or fourth academic year from the time when he has entered upon one of the courses of instruction approved by the University for such degree,

unless he shall present a medical certificate of illness satisfactory to the Senate. This examination shall ordinarily be held in June of each year.

13. Students who have passed the Final examination in any of the Honours Schools shall be admitted to the Final examination in any other Honours School after the expiration of one or two years, on presenting certificates of having attended, during the period in question, courses approved by the University, provided that in the said other Honours School candidates shall not present themselves for the examination more than two academic years after the examination in Honours already passed by them, and also that no candidate be admitted to examination in any Honours School after a longer period than five years has elapsed since the date of his first entrance upon a prescribed course of study for an Honours School.

14. Candidates who have passed the Second M.B. examination may, with the sanction of the Senate, and on furnishing certificates of having during the academical year following such Second M.B. examination attended the third year's, or during the two academical years following such Second M.B. examination of having attended the second and third year's course approved by the University for one of its Honours Schools in Science, present themselves for examination for a B.Sc. degree with Honours in such school.

15. Honours in Mining Engineering will be awarded to candidates who, having obtained the Ordinary degree, with Mining Engineering as a principal subject, and being recommended as suitable to proceed with an Honours course, shall have spent one year in research or in the preparation of a thesis, attendance at the University during this fourth year not being compulsory. All candidates for Honours shall pass the same Mathematical examinations as if they had taken Mathematics as a principal subject, but no attendance on Mathematical courses other than that prescribed for Mining Engineering students proceeding to the Ordinary degree shall be required.

16. Honours in Gas Engineering or Fuel and Metallurgy will be awarded to candidates who, having obtained the Ordinary degree, with either Gas Engineering or Fuel and

Metallurgy as a principal subject, and being recommended as suitable to proceed with an Honours course, shall have spent one year in research, or in the preparation of a thesis on some industrial process, to the satisfaction of the examiners, attendance at the University during this fourth year not being compulsory.

Honours in Gas Engineering or Fuel and Metallurgy may also be conferred upon candidates, who, having graduated in Science at this or an approved University, with Chemistry or Engineering as a principal subject, shall have subsequently (1) completed the course and passed the examination required for the diploma in Gas Engineering or Fuel and Metallurgy; and (2) spent an additional year in research in the Department to the satisfaction of the examiners.

Degree of Master of Science

I

1. The degree of Master of Science is conferred, on payment of the proper fee, upon registered Bachelors of Science, when of one year's standing from the date of their graduation as Bachelors, subject to the conditions contained in the following paragraphs.

2. Bachelors of Science who have graduated with Honours are not required to present themselves for any further examination for the degree of Master of Science.

3. Bachelors of Science who have obtained the Ordinary degree are required to satisfy the Examiners in a further examination in *one* of the following subjects: Mathematics, Physics, Chemistry, Zoology, Botany, Physiology, Geology, Mechanical, Civil, Electrical, Mining Engineering, Applied Chemistry (Colour Chemistry and Dyeing), Applied Chemistry (Chemistry of Leather Manufacture), Fuel and Metallurgy, Gas Engineering, and Agriculture. Certificates of attendance are not required.

4. The names of candidates who have passed the further examination for the degree of Master of Science are arranged in alphabetical order without distinction of classes.

5. Candidates who have prosecuted research, and who give satisfactory evidence thereof by the presentation of a thesis, may be excused part or the whole of the examination.

II

Graduates or persons who have passed the Final examination for a degree of other approved Universities shall, if they present evidence satisfactory to the Senate that they are qualified to pursue a course of advanced study or research, be permitted to enter the University and to become candidates for the degree of M.Sc., without taking the B.Sc. degree, after not less than two years of such advanced study or research. Such candidates shall be required to give evidence to the Senate at the end of the first year of their period of study that their work has been satisfactory, and at the end of their second year they shall be required to present a dissertation, and to satisfy such further test, if any, as the Senate shall deem expedient.

Degree of Doctor of Science

1. The degree of Doctor of Science is conferred by the University upon registered Masters of Science of the University who shall be deemed by the Senate, after considering a report from one or more of the Boards of Faculties, to have distinguished themselves by special research or learning.

Provided that the Senate may, in such cases as it shall think fit, after considering a report from one or more of the Boards of the Faculties, also require candidates to pass such an examination as it may from time to time determine.

2. A Master of Science of the University may make application for the degree of Doctor of Science in the sixth or any subsequent year from the date of his admission to the Bachelor's degree.

3. Such application shall be made in writing to the Registrar and shall contain a full statement of the grounds on which the claim for the degree is based, together with one or more copies of any memoir, whether in type or in manuscript, which the applicant may desire to submit in support of the application.

4. If the application be approved by the Senate, the degree may be conferred at the expiration of not less than six years from the date of admission to the Bachelor's degree.

VI. DEGREES IN MEDICINE AND SURGERY

The degrees in Medicine and Surgery shall be :

- Bachelor of Medicine and Bachelor of Surgery
(M.B. and Ch. B.)
- Doctor of Medicine (M.D.)
- Master of Surgery (Ch.M.)

Degrees of Bachelor of Medicine and Bachelor of Surgery

1. Candidates for the degree of Bachelor of Medicine and of Surgery are required to present certificates showing that they will have attained the age of twenty-one years on the day of graduation, and that they have attended courses of instruction approved by the University extending over not less than five years, two of such years at least having been passed in the University, at least one year being subsequent to the date of passing the First examination.

2. Candidates for the degrees of Bachelor of Medicine and of Surgery are required to satisfy the examiners in the several subjects of the following examinations, entitled respectively :

The Matriculation examination, or such other examination as may have been recognised by the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds and Sheffield in its stead ; the First examination ; the Second examination ; the Final examination.

First Examination

3. The first Examination shall consist of two parts :

- PART I. Physics
- Chemistry.
- PART II. Biology.

4. Candidates, before presenting themselves for the First examination, are required to furnish certificates of having attended courses of instruction in accordance with the Regulations of the University, and to have passed the Matriculation examination.

5. Candidates who have passed the Intermediate examination for the degree of Bachelor of Science in

Chemistry, Physics, Zoology, and Botany, will, on payment of the required additional fee, be regarded as having passed the First examination for the degrees of Bachelor of Medicine and Bachelor of Surgery.

6. The names of candidates who have satisfied the examiners in either part of the First examination shall be published in alphabetical order.

Second Examination

7. The Second examination shall consist of two parts :

PART I. Anatomy
Physiology.

PART II. Pharmacy.

8. Candidates, before presenting themselves for the Second examination, are required to furnish certificates of having attended courses of instruction in accordance with the Regulations of the University, and to have passed the First examination.

9. The names of candidates who have satisfied the examiners in either part of the Second examination shall be published in alphabetical order.

Final Examination

10. The Final examination shall consist of three parts :

PART I. Pathology and Bacteriology.

This may be taken at the end of the tenth term.

PART II. Forensic Medicine
Public Health.

PART III. Medicine

Surgery.

Obstetrics and Gynæcology

Pharmacology and Therapeutics.

Parts II and III may be taken at the end of the fifteenth term, either separately or together.

11. Candidates, before presenting themselves for any part of the Final examination, are required to have passed the

Second examination, and to furnish certificates of having attended courses of instruction, in accordance with the Regulations of the University.

12. The names of candidates who have satisfied the examiners in the first part of the Final examination shall be published in alphabetical order.

13. The names of candidates who have satisfied the examiners in all the subjects of the Final examination, and are recommended for degrees, shall be published as follows :

1. Those awarded First Class Honours
2. Those awarded Second Class Honours
3. Those who have satisfied the Examiners.

The names shall be in alphabetical order in each case.

Degree of Doctor of Medicine

1. No candidate shall be admitted to the degree of Doctor of Medicine unless he has previously received the degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examination for those degrees.

2. Candidates for the degree of Doctor of Medicine are required to present a dissertation, and, if the dissertation be accepted, to pass an examination. The dissertation, of which the subject must previously have received the approval of the Board of the Faculty of Medicine, must embody the results of personal observations or original research, either in some department of medicine or of some science directly related to medicine, provided always that original work, published in scientific journals, or in the Proceedings of learned societies, or separately, shall be admissible in lieu of or in addition to a dissertation specially written for the degree. Candidates will be required to write a short extempore essay on some topic connected with medicine, and to answer questions on the history of medicine. They will also be examined orally on the dissertation or other work submitted. Any candidate may be exempted from a part or the whole of the examination if the Board of the Faculty so decide. No candidate will be

admitted to the degree unless his application, after report from the Board of the Faculty of Medicine, shall have been accepted by the Senate.

3. The names of candidates who have been approved for the degree of Doctor of Medicine shall be published in alphabetical order.

Degree of Master of Surgery

1. No candidate shall be admitted to the degree of Master of Surgery unless he has previously received the degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examination for those degrees.

2. Every candidate, before presenting himself for the examination for the degree of Master of Surgery, is required to have graduated as Bachelor of Medicine and Bachelor of Surgery, and to furnish certificates of attendance in accordance with the Regulations of the University.

3. *Subjects of Examination :*

Surgical Anatomy
Surgery
Operative Surgery
Clinical Surgery
Ophthalmology
Pathology and Bacteriology.

4. The names of candidates who have satisfied the Examiners shall be published in alphabetical order.

VII. DEGREES IN DENTAL SURGERY

1. The degrees in Dental Surgery shall be :

Bachelor of Dental Surgery (B.Ch.D.)

Master of Dental Surgery (M.Ch.D.)

Degree of Bachelor of Dental Surgery

2. All candidates for the degree of Bachelor of Dental Surgery shall be required to have passed the Matriculation examination, to have pursued thereafter approved courses of

study for not less than five academic years, two of such years at least having been passed in the University subsequently to the date of passing Parts I and II of the First examination, and to have completed such period of pupilage or hospital attendance, or both, as may be prescribed by the Regulations of the University. No candidate shall be admitted to the degree who has not attained the age of twenty-one years on the day of graduation.

3. All candidates shall be required to have passed the following examinations: the First examination, the Second examination, the Final examination.

4. Each examination shall include practical work in the subjects offered.

5. All candidates shall be required, before presenting themselves for examination, to furnish to the Registrar certificates testifying that they have attended the prescribed courses of instruction in accordance with the regulations of the University in each of the subjects which they offer, and that they have fulfilled the other requirements of the Ordinance and Regulations in respect of such examination.

First Examination

5. The first examination shall consist of three parts:

Part I. Physics
Chemistry

Part II. Biology

Part III. Dental Mechanics
Dental Metallurgy.

7. Candidates shall be allowed to pass in each part separately.

8. Candidates who have passed the Intermediate examination for the degree of Bachelor of Science, and have in that examination satisfied the Examiners in Chemistry, in Physics, or in Biology, shall, on payment of the difference between the fees required for the two examinations, be regarded as having satisfied the requirements of Parts I and II of the First examination for the degree of Bachelor of Dental Surgery, in those subjects in which they have passed.

9. Candidates shall be required, before presenting themselves for Parts I and II of this examination, to have passed the Matriculation examination, and to have attended courses of instruction in accordance with the Regulations of the University.

10. Candidates shall be required, before presenting themselves for Part III of this examination, to have completed two years from Matriculation, and to have attended courses of instruction in accordance with the Regulations of the University.

Second Examination

11. The subjects of the Second examination shall be :

Anatomy
Physiology
Dental Anatomy and Physiology
Dental Materia Medica.

12. Candidates shall be required, before presenting themselves for the Second examination, to have passed the First examination not less than one year previously, and to have attended courses of instruction in accordance with the Regulations of the University.

Final Examination

13. The subjects of the Final examination shall be :

Dental Surgery
Dental Pathology and Bacteriology
Operative Dental Surgery
Medicine and Surgery.

14. Candidates shall be required, before presenting themselves for the Final examination, to have passed the First examination not less than two years previously, to have passed the Second examination not less than six months previously, and to have attended courses of instruction in accordance with the Regulations of the University.

VIII. RECOGNITION OF VICTORIA UNIVERSITY COURSES AND EXAMINATIONS

(a) The Senate, or any Committee of the Senate appointed for that purpose, is hereby empowered to recognise courses of study pursued and examinations passed

by students of the Yorkshire College or of the University of Leeds in the Victoria University or the Victoria University of Manchester prior to January 1, 1905, as equivalent to corresponding courses and examinations in the University of Leeds.

(b) The Senate, or any Committee of the Senate appointed for that purpose, is hereby also empowered to make such concessions in exemption from examinations and from attendance on courses of study, as may be required to place a past or present student of the University or of the Yorkshire College, who has been admitted thereto before 1st October, 1904, in as favourable a position in the above respects as if he had become or had continued to be a student of the Victoria University or of the Victoria University of Manchester.

(c) A student of the Yorkshire College, who before December 31, 1904, has passed a Final examination of the Victoria University or of the Victoria University of Manchester, for the Bachelor's degree in the Faculty of Arts, Science, Law, or Medicine shall be entitled to be admitted to the Bachelor's degree of the University of Leeds; and if he has been admitted to the Bachelor's degree of the Victoria University or the Victoria University of Manchester he shall be entitled to proceed to the higher degrees of the University of Leeds on the same conditions as if he had graduated in this University.

IX. RECOGNITION OF COURSES AND EXAMINATIONS OF OTHER RESIDENTIAL UNIVERSITIES

(a) Subject to the provisions of the Charter and Statutes, the Senate, or any Committee of the Senate appointed for that purpose, is hereby empowered to allow members of any University, in which residence is required as a condition of graduation, or members of any University who have attended courses of study at some College or other place of learning which is affiliated or associated with such University, after Matriculation at the University of

Leeds, and presentation of certificates of conduct satisfactory to the Senate or Committee, to count such periods of residence passed by them at such other University as equivalent to such periods of residence at the University of Leeds as the Senate or Committee may determine, provided that no degree of this University shall be conferred on any such person unless he shall have pursued an approved course of study in this University extending over at least two years, and shall have passed the Final examination for such degree.

(b) Undergraduates of other Universities who have been admitted, under this Ordinance, as members of this University may be allowed to count examinations passed by them at such other Universities as equivalent to such examinations or portions of examinations other than the Final examination of this University as the Senate, or any Committee of the Senate appointed for that purpose, may from time to time determine.

X. CONFERMENT OF DEGREES UPON FORMER STUDENTS OF THE YORKSHIRE COLLEGE

1. As to conferment of *ad eundem* degrees on students who have attended full courses of study at the Yorkshire College and have graduated at various Universities, but who have not been admitted to the College Associateship :

Graduates of the Victoria University shall be offered the same degrees in the University of Leeds as those which they have received from the Victoria University.

Graduates in Medicine of other Universities shall be admissible on application to the M.B. degree of the University of Leeds.

Applications from non-medical graduates of other Universities who have been students of the Yorkshire College shall be considered on their merits.

In every case of admission under the above conditions a fee of 10s. 6d. shall be charged.

2. As to Associates of the Yorkshire College :

Graduates of the Victoria University shall be offered the same degrees in the University of Leeds as those which they have received from the Victoria University.

Graduates of other Universities shall be offered the degree of Bachelor in this University in the Faculties in which they graduated elsewhere.

All Associates of the Yorkshire College admitted to degrees of the University of Leeds under these conditions shall be admitted without fee.

3. All persons admitted to degrees of the University of Leeds under the foregoing conditions shall be admissible as life members of the Convocation of the University.

4. No graduate admitted under the above conditions to a lower degree shall be precluded from proceeding in the University of Leeds to a higher degree in his particular faculty.

XI. STANDING OF CERTAIN GRADUATES IN PROCEEDING TO HIGHER DEGREES

1. Graduates of other Universities who have been admitted to degrees of equal or similar rank in this University shall be allowed, in proceeding to higher degrees, to count their standing as graduates from the date of their graduation in such other Universities.

2. Associates by examination of the Yorkshire College who have been admitted to degrees in this University shall be allowed, in proceeding to higher degrees, to count their standing as graduates from the date of admission to the Associateship.

XII. AWARD OF DEGREES BY SENATE.

The Senate is hereby empowered to award degrees other than (1) *ad eundem* degrees, (2) degrees conferred on officers of the University, and (3) honorary degrees, in accordance with the provision in that behalf contained in Statute I. b.

XIII. AWARD OF DEGREES BY COUNCIL.

1. The Council is hereby authorised to grant to any Professor of the University, or to any Lecturer who is the head of any department in the University, a degree not higher than that of Master in the Faculty in which he has graduated, or, in the case of a Professor or Lecturer holding no degree, such degree, not higher than that of Master, as the Council may determine.

2. The Council is authorised, if it thinks fit, to grant to any other officer of the University such degree, not higher than that of Master, as it may determine, but no such degree shall be conferred until a report thereon has been received from the Senate.

3. No Medical degree shall be conferred under either of the above provisions (1) and (2) upon a person who does not already possess a registrable medical qualification; and no person, in virtue of a degree conferred under either of these provisions, shall be allowed to proceed to a degree higher than that to which he has been admitted.

XIV. JOINT MATRICULATION BOARD AND JOINT COMMITTEES

The Council is hereby empowered to elect annually, or as may be required:

1. Five members of the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield.
2. Three members of a Joint Committee of the Universities of Manchester, Liverpool, and Leeds, to consider objections which may be raised by one or more of those Universities, to Statutes or Ordinances proposed by any of them, or by the University of Sheffield.

XV. DIPLOMAS

Diplomas shall be granted by the University, in such subjects as the Council may from time to time determine, to students who pursue the courses of study and pass the examinations prescribed.

The Council is empowered to make from time to time Regulations under which such diplomas shall be awarded.

The award of diplomas under the provisions of this Ordinance is delegated to the Senate.

XVI. REGULATIONS FOR PROCEDURE

The Council, Senate, Faculties, Boards of Faculties, and Convocation are hereby empowered to enact Regulations for the conduct of their business and that of their Committees, subject to the provisions of the Charter and Statutes.

XVII. FEES

The Council is hereby empowered, after giving the Senate an opportunity of reporting thereon, to appoint such Registration, Examination, Class, Laboratory, and other fees to be paid by students and others as the Council may from time to time determine, and to increase, reduce, or abolish the same.

XVIII. REGULATIONS FOR EXAMINATIONS

Subject to the provisions of the Charter, Statutes, and Ordinances of the University, the Council is hereby empowered to adopt regulations, or to delegate to the Senate the making of regulations, as to the subjects, times, modes, and standards of the examinations.

XIX. ADMISSION TO EXAMINATIONS

Before admission to any examination candidates must pay the examination fee. The admission of all students to the examinations of the University shall be subject to the approval of the Vice-Chancellor.

XX. EXTERNAL EXAMINERS

The Council is hereby empowered to appoint, on the recommendation of the Senate, such External Examiners on such conditions as to tenure of office, remuneration, and otherwise as it may from time to time determine.

XXI. PRIZES

The Council is hereby empowered, upon report from the Senate, to institute such class and other prizes as it may from time to time determine, and to vary their value and to abolish the same.

**XXII. EXAMINATION OF SCHOOLS, AND
EXTENSION LECTURES**

The Senate is hereby empowered to examine and inspect schools and other educational institutions, and to provide lectures and instruction for persons not members of the University under such Regulations as the Council may from time to time adopt. The Senate is empowered to award certificates in connection with lectures and instruction for persons not members of the University.

**XXIII. TENURE OF OFFICE OF DEANS OF
FACULTIES**

Deans of Faculties shall be elected for periods not exceeding two years at a time.

**XXIV. TENURE OF OFFICE OF ADDITIONAL
MEMBERS OF THE SENATE**

Such additional Members of the Senate of the University as may be appointed by the Court under Statute V. shall be appointed for one year only, but shall be re-eligible at the end of each year.

XXV. REGISTER OF CONVOCATION

1. The Chancellor, the Vice-Chancellor, the Pro-Vice-Chancellor, the members of the Senate and the Lecturers shall be registered as members of Convocation without payment of any fee, and their names shall be continued upon the Register so long as they retain their qualifying offices.

2. Graduates who have been admitted to degrees of this University by reason of their having pursued courses of study in the Yorkshire College, and having been admitted to degrees of other Universities or to the Associateship of

the Yorkshire College, shall be entitled to be registered immediately as life members of Convocation without payment of any further fee.

3. All graduates of this University shall be entitled to be registered as members of Convocation upon payment of a fee of 10s. 6d.

XXVI. COMMUNICATIONS FROM COUNCIL TO CONVOCAATION.

Convocation shall receive from the Council the draft of any Ordinance proposed which, in the opinion of the Council, would affect the status, position, rights, or privileges of Convocation or the members thereof, and further Convocation if it so desires may record its opinion on any draft Ordinance so submitted within one month from the date at which it has been received, and such opinion when recorded shall be taken into consideration by the Council.



THE UNIVERSITY OF LEEDS

Visitor

His Majesty THE KING

Chancellor

His Grace THE DUKE OF DEVONSHIRE, LL.D.

Pro-Chancellor

ARTHUR GREENHOW LUPTON, LL.D.

Vice-Chancellor

Pro-Vice-Chancellor

Professor ARTHUR SMITHELLS, B.Sc., F.R.S.

Treasurer

SIR FRANCIS SHARP POWELL, BART., M.A., LL.D.

THE COURT

The CHANCELLOR
 The PRO-CHANCELLOR
 The VICE-CHANCELLOR
 The TREASURER

Members Nominated by the Crown

The Most Honourable THE MARQUIS OF ZETLAND, K.T.
 The Right Rev. THE LORD BISHOP OF RIPON, D.D., Litt.D., D.C.L.
 Sir OWEN ROBERTS, M.A., LL.D., D.C.L.

Members Elected by the Court

The Rev. W. E. BLOMFIELD, B.A., B.D., Principal of Rawdon College
 Major E. KITSON CLARK, M.A.
 Major J. W. DENT
 HERBERT DENISON
 Mrs. R. W. EDDISON
 WILLIAM BONNALIE GORDON
 The Rev. CHARLES HARGROVE, M.A.
 EWING MATHESON, M.Inst.C.E.
 C. T. WHITMELL, M.A.

Members for Life

The Right Hon. THE EARL OF HAREWOOD, LL.D., Harewood
 The Right Hon. THE VISCOUNT MOUNTGARRET, Ripley
 The Right Rev. THE LORD BISHOP OF GLOUCESTER, D.D.
 The Right Hon. LORD GRIMTHORPE, Leeds
 The Right Hon. LORD ALLERTON, LL.D., F.R.S., Leeds
 The Right Hon. LORD FABER, Harrogate
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 Temple Newsam
 The Hon. JOHN HENRY SAVILE, Helmsley
 The Hon. RICHARD CLERE PARSONS, M.A., London
 The Hon. Mrs. WHITTUCK, London
 The Right Hon. ARTHUR HERBERT DYKE ACLAND, M.A., LL.D.,
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 The Right Hon. Sir SAVILE BRINTON CROSSLEY, Bart., K.C.V.O.,
 Somerleyton Lowestoft
 The Right Hon. CHARLES G. MILNES GASKELL, M.A., LL.D.,
 Wakefield
 The Hon. W. GERVASE BECKETT, M.P., Leeds
 The Hon. RUPERT EVELYN BECKETT, Leeds
 The Hon. FRANCIS STANLEY JACKSON, B.A., York
 Sir JOHN WILLIAM RAMSDEN, Bart., Byram
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 Sir JOHN NICHOLSON BARRAN, Bart., B.A., M.P., Ripon

Sir ARTHUR TREDGOLD LAWSON, Bart., Bedale
Sir FREDERICK WILLIAM FISON, Bart., M.A., London
Prof. Sir THOMAS CLIFFORD ALLBUTT, K.C.B., M.A., M.D.,
LL.D., D.Sc., F.R.S., Cambridge
Colonel Sir JAMES DIGBY LEGARD, K.C.B., Malton
Sir WILLIAM EDWIN BRIGGS PRIESTLEY, M.P., Bradford
Sir JOHN BRIGG, M.P., F.G.S., Keighley
Sir GEORGE JACK COCKBURN, Leeds
WILLIAM ACKROYD, Leeds
GEORGE APPELEYARD, Southport
THOMAS WADE APPELEYARD, Leeds
JOHN W. ARCHER, Bournemouth
ROBERT ARMITAGE, M.P., Leeds
Mrs. ASHTON, London
EDWARD BAINES, B.A., M.B., Whitby
TALBOT BAINES, B.A., Hayward's Heath, Sussex
ALFRED BARRAN, Leeds
CHARLES BARRAN, Totnes
HENRY BARRAN, M.A., LL.B., Leeds
ROWLAND H. BARRAN, M.P., Leeds
SOMERSET ARCHIBALD BEAUMONT, Shere, Guildford
WILLIAM BECKWORTH, Leeds
HARRY BEHRENS, M.A., Bradford
Professor DE BURGH BIRCH, C.B., M.D., C.M., F.R.S.E., Leeds
CHARLES EDWARD BOUSFIELD, Kingsbridge, S. Devon
HENRY ILLINGWORTH BOWRING, M.A., B.C.L., Leeds
JAMES BRAITHWAITE, M.D., Leeds
JOHN JEREMY BRIGG, M.A., LL.M., Keighley
RILEY BRIGGS, Selby
JOHN ARTHUR BROOKE, M.A., Huddersfield
GEORGE WILLIAM BROWN, B.A., London
WILLIAM BROWN, Leeds
A. EDMUND BUTLER, Leeds
ARCHIBALD CAMPBELL, Troon, N.P.
WILLIAM JOHNSON CHEETHAM, Leeds
WILLIAM DEWHIRST CLIFF, Leeds
WALTER CLIFF, York
HENRY SMITH CLOUGH, Keighley
JOHN EDWARD CROWTHER, Huddersfield
HENRY DAVEY, Ewell, Surrey
THOMAS LANE DEVITT, London
THOMAS HENRY DEWHURST, Skipton
JOHN EDWIN EDDISON, M.D., Leeds
J. RAY EDDY, Skipton
Mrs. EYRES, Evesham
GEORGE DENISON FABER, C.B., M.P., Leeds
JOHN RICHARD FLITCH, Leeds
JOHN RAWLINSON FORD, Leeds
ROBERT HENRY FOWLER, Leeds
WILLIAM EDWARD GARFORTH, Normanton
CONRAD EMIL GRAHL, Kew, Surrey

WILLIAM HALL, Leeds
THOMAS WALTER HARDING, LL.D., Cambridge
WILLIAM HARVEY, Leeds
BERESFORD R. HEATON, London
ARTHUR FREDERICK LAWRENCE HEPTON, Leeds
WILLIAM HEPTON, Leeds
JOSEPH HEPWORTH, Harrogate
ISAAC HODGES, Woodlesford
ROBERT JOHN HUDSON, Scarborough
GEORGE NORTON ILLINGWORTH, Leeds
WILLIAM ILLINGWORTH, Bramhope
HENRY OXLEY INGHAM, Leeds
WALTER GEOFFREY JACKSON, Bramham
JOHN ATKINSON JOWETT, Bradford
ROBERT BENSON JOWITT, Tunbridge Wells
JOHN ROBERT KAY, Glasgow
CHARLES T. KETTLEWELL
FREDERICK JAMES KITSON, Leeds
ROBERT HAWTHORN KITSON, M.A., Leeds
WILLIAM H. KITSON, Leeds
ARTHUR GREENHOW LUPTON, LL.D., Leeds
CHARLES LUPTON, M.A., Leeds
FRANCIS MARTINEAU LUPTON, M.A., Leeds
HENRY LUPTON, Torquay
WILLIAM WALTER LUPTON, Malton
GEORGE MARCH, Thorne
Miss MARCH, Leeds
Miss CAROLINE MARCH, Leeds
W. H. MARRIOTT, Mirfield
JOHN MARSHALL, B.A., Derwent Island, Keswick
REGINALD DYKES MARSHALL, Keswick
VICTOR A. E. G. MARSHALL, M.A., Monk Coniston
ERNEST MARTIN, Huddersfield
HORACE MARTIN, Huddersfield
WILLIAM HENRY MAUDE, Leeds
ARTHUR SELBY MCCREA, Halifax
HENRY McLAREN, Leeds
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German: J. G. ROBERTSON, M.A., Ph.D., B.Sc., Professor of German Literature, University of London.

History: Rev. W. H. HUTTON, M.A., B.D., St. John's College, Oxford.

Philosophy: C. C. J. WEBB, M.A., Fellow of Magdalen College, University of Oxford.

Economics: J. H. CLAPHAM, M.A., Fellow of King's College, Cambridge.

Education: R. L. ARCHER, M.A., Professor of Education, University College of North Wales.

Music: T. HENDERSON, Mus.B., University of Durham.

Law: H. BOND, LL.D., Fellow of Trinity Hall, University of Cambridge.

Faculty of Science

Mathematics: A. BERRY, M.A., Lecturer in Mathematics, King's College, University of Cambridge.

Physics: J. S. E. TOWNSEND, M.A., F.R.S., Wykeham Professor of Physics, New College, Oxford.

Chemistry: P. P. BEDSON, M.A. D.Sc., Professor of Chemistry, Armstrong College, Newcastle-upon-Tyne.

Zoology: S. J. HICKSON, D.Sc., F.R.S., Beyer Professor of Zoology, Victoria University of Manchester.

Botany: W. H. LANG, M.B., C.M., D.Sc., Barker Professor of Cryptogamic Botany, Victoria University of Manchester.

Geology: W. W. WATTS, M.A., F.R.S., Professor of Geology, Royal College of Science, London.

Faculty of Technology

Engineering: J. T. NICOLSON, D.Sc., M.Inst.C.E., M.Sc.Tech. Municipal School of Technology, Manchester.

Electrical Engineering: E. WILSON, M.I.E.E., Professor of Electrical Engineering, King's College, University of London.

Mining: F. W. HARDWICK, M.A., Professor of Mining, University of Sheffield.

Colour Chemistry and Dyeing: J. T. HEWITT, M.A., D.Sc., Ph.D., Professor of Chemistry, East London Technical College.

Leather Industries: J. T. WOOD.

Agriculture: JAMES WILSON, M.A., B.Sc., Professor of Agriculture, Royal College of Science, Dublin.

Faculty of Medicine

Anatomy: E. FAWCETT, M.D., C.M., Professor of Anatomy, University of Bristol.

Physiology: W. D. HALLIBURTON, M.D., F.R.C.P., F.R.S., Professor of Physiology, King's College, London.

Materia Medica and Pharmacy, Pharmacology and Therapeutics: A. R. CUSHNY, C.M., M.D., F.R.S., Professor of Pharmacology, University College, London.

Pathology and Bacteriology and Aetiology of Disease: G. SIMS WOODHEAD, M.A., Professor of Pathology, University of Cambridge.

Forensic Medicine and Toxicology: F. J. SMITH, M.D., F.R.C.P., London Hospital, London.

Public Health:

Medicine and Mental Diseases: L. E. SHAW, M.D., F.R.C.P., Physician to Guy's Hospital, London.

Surgery: L. A. DUNN, M.B., F.R.C.S., Surgeon to Guy's Hospital, London.

Obstetrics and Gynæcology: J. S. FAIRBAIRN, M.B., F.R.C.P., F.R.C.S., Obstetric Physician with charge of out-patients, St. Thomas's Hospital, London.

Dentistry: HOPEWELL SMITH, M.R.C.S., L.R.C.P., L.D.S.

REPRESENTATIVES OF THE UNIVERSITY ON COMMITTEES AND OTHER INSTITUTIONS

A. Joint Matriculation Board

	Appointment Expires
¹ The VICE-CHANCELLOR	Dec., 1911
¹ Professor BRAGG	" "
¹ Professor CONNALL	" "
¹ Professor GARSTANG	" "
¹ Professor SCHÜDDEKOPF	" "

B. Courts of other Universities

Bristol,	³ The VICE-CHANCELLOR	Jan., 1912
Liverpool,	³ " "	Jan., 1912
Sheffield,	³ " "	June, 1912

C. The General Medical Council

³ Professor BARRS	Oct., 1913
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D. Education Committees

West Riding	- - Sir GEORGE J. COCKBURN	
North Riding	- - ³ Sir J. N. BARRAN, Bart., M.P.	Mar., 1914
East Riding	- - ¹ The Hon. E. F. L. WOOD	Mar., 1912
" "	- - ¹ Professor WELTON	"
Yorkshire Council for Agricultural Education	¹ The PRO-CHANCELLOR	
" "	¹ The Hon. E. F. L. WOOD	
" "	¹ Sir J. N. BARRAN, Bart., M.P.	Mar., 1912
" "	¹ EDWIN WOODHOUSE	
City of York	- - ¹ Professor MACGREGOR	Nov., 1911
Borough of Doncaster	- ¹ J. A. CLAXTON	Dec., 1911
" Harrogate	- ¹ Dr. MOORMAN	Dec., 1911

E. Affiliated Institutions

College of the Resurrection, Mirfield	- - - ³ Professor ROBERTS	June, 1912
Huddersfield Technical College	- - - ¹ Professor GARSTANG	June, 1912

The number prefixed to a name indicates the number of years in the term of the appointment.

F. Schools, etc.

Akroyd Foundation	{ ⁵ J. RAWLINSON FORD ⁵	Sept., 1915
Almondbury Grammar School	- ³ C. L. BROOK	Jan., 1913
Barnsley Grammar School	- ³ G. BLAKE WALKER	Nov., 1912
Batley Grammar School	- ³ SAMUEL CROWTHER	June, 1914
Bentham—Collingwood and Baynes Foundation	} ⁵ A. O. ALLEN	Dec., 1913
Beverley Grammar School	- ³ MARK SYKES, M.P.	Dec., 1912
Bingley Grammar School	- ³ Professor BRAGG	May, 1912
Bishopside (Ripon) — Lupton and Watson's Foundation	} ⁴ Sir J. N. BARRAN, Bart., M.P.	Feb., 1912
Bradford Grammar School	- ³ Professor COHEN	Dec., 1912
Bradford Girls' Grammar School	- ⁴ Miss H. ROBERTSON	Mar., 1913
Bridlington Grammar School	- ⁵ Mr. DANIEL	July, 1912
Brighouse School for Girls	- ³ Miss H. ROBERTSON	May, 1912
Castleford Secondary School	- ³ C. M. GILLESPIE	Oct., 1912
Cleckheaton Grammar School	- ³ Professor GRÜNBAUM	May, 1914
Coxwold Charity	- ³ Dr. H. M. DAWSON	Oct., 1911
*Dewsbury—Endowed Schools Foundation	} ⁵ Professor MACGREGOR	Oct., 1913
Doncaster Grammar School	- ³ C. B. COOKE-YARBOROUGH	Oct., 1911
Drax Free School	- ⁵ JOHN TAYLOR	July, 1913
Giggleswick Grammar School	- ⁵ Professor GRANT	Mar., 1913
Halifax—Heath Grammar School	- ⁵ Professor CONNALL	May, 1913
Harrogate Secondary School	- ³ Miss H. ROBERTSON	Feb., 1913
Heckmondwike Secondary School	- ³ Professor GRÜNBAUM	June, 1913
Hipperholme Grammar School	- ⁵	July, 1913
Holmfirth Secondary School	- ³ Professor GREEN	Nov., 1913
Ilkley Grammar School	- ⁵ Professor PROCTER	Dec., 1913
Keighley—Drake and Tonson's Charity	} ⁴ C. M. GILLESPIE	June, 1914
Leeds Grammar School	{ ⁵ ⁵ Professor SMITHELLS	} May, 1913
Leeds Girls' High School	- ³ Lady BODINGTON	April, 1912
Leeds Maternity Hospital	- ⁴	June, 1911
Leeds, Mount St. Mary's College	- ³ Miss H. ROBERTSON	Nov., 1912
Malton (Old) Grammar School	- ⁵ HUGH W. PEARSON	Oct., 1913

The number prefixed to a name indicates the number of years in the term of the appointment.

* Professor Grant represents the University during Professor Macgregor's absence abroad.

Normanton Grammar School	-	³ Professor SMITHELLS	Dec., 1913
Northallerton Grammar School	-	³ WILLIAM BROWN	July, 1911
Ossett Grammar School	-	³ Professor WELTON	May, 1913
Otley Grammar School	-	³ Professor GRANT	July, 1912
Otley Secondary School	-	³ Miss A. M. COOKE	Nov., 1911
Pickering Grammar School	-	³ Mrs. KITCHING	Nov., 1911
Pocklington Grammar School	-	Professor GARSTANG	
Pontefract Grammar School	-	⁵ Professor CONNALL	May, 1912
Pontefract Girls' High School	-	³ Miss M. V. LEBOUR	Nov., 1913
Rastrick Grammar School	-	⁵ Professor ROBERTS	Dec., 1911
Ripon Grammar School	-	³ Sir J. N. BARRAN, Bart., M.P.	Jan., 1912
Ripon Girls' Secondary School	-	³ Miss H. ROBERTSON	May, 1912
Sedbergh Grammar School	-	⁵ Professor VAUGHAN	Oct., 1914
Selby Secondary School	-	³ Miss H. ROBERTSON	Nov., 1912
Settle Girls' High School	-	³ Miss A. M. COOKE	Mar., 1913
Skipton--Ermysted's Grammar School	)	⁵ Professor PHILLIPS	Dec., 1913
Skipton Girls' Middle School	-	⁵ Professor PHILLIPS	June, 1914
Slaithwaite Grammar School	-	³ J. A. BROOKE	June, 1913
Sowerby-in-Halifax— Bairstow's Endowed School	)	³ J. A. BROOKE	June, 1914
Tadcaster Grammar School	-	³ Professor ROGERS	Dec., 1911
Thornton-in-Bradford— Endowed Schools	)	⁵ DR. MOORMAN	Dec., 1913
Wakefield Grammar School	-	⁵ Professor BARRIER	Dec., 1911
West Riding Examining Board	-	¹	
West Riding Territorial Association	)	¹	
Wortley—Sunderland and Farrer Foundation	)	³ The PRO-CHANCELLOR	May, 1913
York—St. Peter's School	-	⁵ Rev. J. M. MARSHALL	Feb., 1914
Yorkshire Board of Legal Studies	-	¹	June, 1911

The number prefixed to a name indicates the number of years in the term of the appointment.

THE
UNIVERSITY OF LEEDS

Session 1911-1912

Faculties of Arts (including Commerce and Law),
Science and Technology¹

UNIVERSITY TERMS

The University session, or academic year, is divided into three terms. The first term begins Monday, October 2, 1911, and ends Wednesday, December 20, 1911; the second term begins Wednesday, January 10, 1912, and ends Wednesday, March 27, 1912; the third term begins Wednesday, April 24, 1912, and ends Saturday, June 29, 1912.

ADMISSION OF STUDENTS

The classes and laboratories are open to men and women on the same terms. Special arrangements are made for the convenience of women students.

No day students are admitted under the age of sixteen years. Students under seventeen years of age may be required to pass an entrance examination.

Candidates for admission to the University who are under nineteen years of age, and who have been at a school or other educational institution within one year of their application for admission, are required to produce a certificate of good conduct from the head of such institution.

Applications for admission to the University from persons residing out of the United Kingdom, must in all cases be

¹ For information respecting the Faculty of Medicine, see page 440.

accompanied by certificates of good conduct duly authenticated. Indian students are, in addition, required to produce certificates of identity, which should also, as a rule, be furnished by students from foreign countries.

All students are required, prior to admission, to sign a declaration that they will observe the statutes, ordinances, and regulations of the University for the time being.

The Vice-Chancellor will admit students on MONDAY, OCTOBER 2, from 9.30 a.m. to 12.30 p.m., and also from 2.30 to 4 p.m., and on TUESDAY, OCTOBER 3, from 9.30 a.m. to 12.30 p.m. The Professors and Lecturers will be present to confer with intending students and to give them advice respecting their courses of study. Women students are requested to consult the Mistress of Method as to their studies before presenting themselves to the Vice-Chancellor. The Registrar will be in attendance to receive the fees and register students whose courses of study have been approved by the Vice-Chancellor.

All students (excepting those entering the department of Agriculture¹) are expected to register their names on one of these days.

REGULATIONS TO BE OBSERVED BY STUDENTS

1. All students in regular attendance who are not living with their parents, or with relatives or personal friends, will be required to reside either at some Hall of Residence or Hostel approved by the University, or in registered lodgings, or in lodgings which, if not registered when taken by the student, shall receive the approval of the University. Students taking lodgings which have not been registered are required to report immediately to the Office the address of such lodgings.

2. Students who do not return punctually at the beginning of the term are liable to be refused permission to keep the term. In case of delay in entering, due to illness or other unavoidable cause, a communication must be made to the Vice-Chancellor.

¹ The winter course in Agriculture begins Monday, October 16, 1911.

3. When a student is absent from illness or other unavoidable cause a written explanation must at once be sent to the Vice-Chancellor, who will communicate it to the heads of the departments in which the student is attending. Students desiring leave of absence must obtain it from the Vice-Chancellor.

4. Students are required to keep the Vice-Chancellor and Registrar informed of their addresses. Any alteration of address must be communicated without delay.

5. Students are required to provide themselves with the books used in the classes which they attend, and with a copy of the University Calendar.

6. A student dismissed for idleness or misconduct will forfeit all fees and privileges.

7. Students are required to replace or repair any apparatus or other property destroyed or damaged by their fault.

8. The Students' Common Rooms are under the management of the University Union, and the Committee of the Union are empowered to impose fines in case of damage done to the property in their charge. An appeal against any decision of the Union may be made to the Senate.

9. All students of the University who are reading for degrees are required to enter their names in the Matriculation Book.

10. No student is permitted, except with the leave of the Vice-Chancellor, to attend any lecture course or laboratory work until he has received from the Registrar his class ticket, which must be presented to the heads of the departments in which he enters before his course of study is begun.

11. Students who fail in their class examinations may be required to repeat their courses of study. In cases of repetition of courses the full fees will have to be paid for the repeated course.

12. Students will not ordinarily be permitted, while attending courses at the University in any Faculty except that of Law, to keep terms at the Bar during their courses of study.

13. Students are not at liberty to publish the results of research work done in the University without the specific consent of the Head of the Department, or to publish any matter given in the Lectures.

Vacation Study

The Senate desire it to be understood that study is expected from students during vacations. Arrangements are made by which the laboratories are open during a portion of the Long Vacation to students capable of independent work. Application for admission must be made to the heads of departments, with whom the decision as to the suitability of students for admission rests.

In many cases the vacation time of students in technical departments can be most profitably employed in obtaining practical experience in works. Assistance to obtain admission to works will, so far as practicable, be given by the Professors. In other cases, before the vacation begins, Professors and Lecturers will be prepared to make recommendations to students as to the private study which should be carried on during the vacation in preparation for the next session.

ENTRANCE EXAMINATIONS

1. For Degree Students

All students who intend to present themselves as candidates for a degree in the University of Leeds are required, before entering upon their degree course, to have passed the Matriculation examination of the Universities of Manchester, Liverpool, Leeds and Sheffield, or some examination recognised by the Joint Matriculation Board of those Universities as exempting from the Matriculation examination.

The Matriculation examination is held at each University in July and September. Candidates for entrance to the Faculties *other than the Faculty of Medicine* are required to satisfy the examiners in: (1) English Language and Literature. (2) English History. (3) Mathematics. (4) *Three* of the following, *one* of which must be a language: (i) Greek; (ii) Latin; (iii) French; (iv) German; (v) Some other Language approved by the Board; (vi) *Either* Mechanics *or* Physics; (vii) Chemistry; (viii) Geography (Physical, Political and Commercial); (ix) Natural History (Plants and Animals). A complete syllabus of the examination may be obtained from the Secretary, the Joint Matriculation Board, 24, Dover Street, Manchester, to whom all applications for exemption should also be addressed.

2. For other Students

Students under seventeen years of age who wish to pursue a course of study in the day classes of the University without proceeding to a degree are required, before entering, to have satisfied *one* of the following requirements:

- (a) To have passed the Matriculation examination.
- (b) To have passed some other public examination approved by the Vice-Chancellor.
- (c) To have gained a scholarship or exhibition awarded by the University after open competition.
- (d) To have passed the special examination for entrance to the Engineering departments (see below), including English Composition and Dictation.
- (e) To have passed an Entrance examination in each of the following subjects: Arithmetic, including decimals and proportion; Algebra, to simple equations; Geometry, the first book of Euclid or its equivalent; English Composition and Dictation.

This examination will be held on Tuesday, October 3, 1911, the English subjects at 10 a.m., and the mathematical subjects at 2 p.m.; and no subsequent examination for entrance will be held during

the Session. No candidate can be examined whose name has not been notified to the Registrar by the morning of Monday, October 2.

The Vice-Chancellor may dispense with the requirement of an entrance examination in the case of students who are presenting themselves for one or two lecture courses only.

Candidates for admission to the departments of Civil, Mechanical, Electrical or Mining Engineering are required *either* to have passed the Matriculation or some other approved examination, including Mathematics, *or* to pass a special entrance examination. This examination is not imposed, however, in the case of students who have taken a satisfactory position in the Evening Class examinations. For particulars of subjects, dates, and conditions of this examination see page 303.

DEGREE COURSES

Candidates for degrees in Arts, Commerce, Law and Science are required (*a*) to have completed not less than three years of study in the University, all of which must be subsequent to the date of passing the Matriculation examination, and (*b*) to have passed prescribed examinations in the subjects of study. Full particulars of the requirements of the University in these respects will be found in subsequent pages.

FEES

All Fees are payable to the Registrar. Cheques should be made payable to "The University of Leeds," and crossed "Beckett & Co."

1. Registration and Library Fee

In addition to class fees, each student attending any regular day class for which a fee of £1 1s. or upwards is charged will, if he has not paid a composition fee for the year, be required to pay a registration and library fee of £1 1s. Those day students who attend one or two courses

of lectures only, or are engaged in laboratory work not exceeding one day per week or an equivalent thereto may pay, in lieu of the registration and library fee of £1 1s., a sessional fee of 7s. for each class attended.

2. University Union Fee

Students attending the University for more than six hours a week, who have not paid the composition fee for the year will, except in special cases to be determined by the Vice-Chancellor, be required to pay to the Registrar at the beginning of each session a subscription of 10s. 6d. to the University Union. This subscription entitles students to the use of the Common Rooms (which are supplied with the daily papers, and periodicals, &c.), to free instruction in the University gymnasium, and to the use of the athletic grounds, five courts and tennis courts.

3. Lecture and Laboratory Fees

(a) General Regulations

The fees for lecture and laboratory courses are payable in advance. On presentation of a form signed by the Vice-Chancellor authorising attendance upon courses of study, the Registrar will supply a class ticket entitling the student to attend such courses upon payment of fees. This class ticket must be presented by the student to the Professors or Lecturers whose classes or lectures he is authorised to attend before commencing attendance.

In the case of the withdrawal from the University of any student during the session, no claim to a return of fees is recognised.

(b) Composition Fees for Complete Courses, inclusive of Registration and Library and Union Fees.

The following tables of composition fees apply to all students, but students who entered the University in or before the session 1909-10 may, if they desire, pay the fees previously in force.

Students who have paid a composition fee of £19 or upwards will be admitted without further charge to any additional classes for which they have obtained the sanction of the Vice-Chancellor and the head of the department.

Arts. £19 each session.

Science. £27 each session.

Technology. £31 each session.

The composition fee for Applied Science (Technology) will be applicable to all students whose courses of study include an average attendance of six hours a week per session in one or more of the Technological departments.

Law. (1) Degree of LL.B.

Intermediate Course. £9 9s. for the session.

Final Course. £15 15s., to be paid at the beginning of the first year of the Final Course.

(2) Final examinations of the Law Society. £15 15s. to be paid at the beginning of the first year of the Final Course.

Students may enter for both the Final LL.B. Course and the Final Course for the Law Society's examinations on payment of one composition fee of £15 15s., to be paid at the beginning of the first year of the Final Course in each case.

Agriculture. Special Winter Course, £10.

Summer Course, £5.

Agricultural students who are preparing for the B.Sc. degree will be charged the Science Composition Fee.

First Examination in Medicine and First Examination in Dental Surgery. (Parts 1 and 2.) £27.

Conjoint Board First Examination. £23.

Preliminary Examination in Science for the Diploma in Dental Surgery. £15.

Diploma in Education (excluding Registration and Library and Union fees) £15.

(c) *Fees for lectures and laboratory work when paid for separately.*

The following fees will be charged for lectures and laboratory work when paid for separately, except in the case of classes for which a special fee has been fixed.

For a class meeting 1 hour per week...	£2	10s.	each session.
" " 2 hours "	£3	10s.	"
" " 3 " "	£4	10s.	"
" " 4 " "	£5	10s.	"

The fees payable for laboratory and for practical work are at the uniform rate of £3 per half-day of three hours a week each session.

For two terms three-quarters of these amounts will be charged. For one term half of these amounts will be charged.

(d) Fees for Research Students

Persons desiring to pursue original research may be admitted as research students to any of the University laboratories upon the following conditions:—

(1) Applications for admission as research students must be made to the head of the department concerned. The admission is subject to the approval of the Senate.

(2) Graduates and advanced students will, if admitted as research students, be charged a fee of seven guineas for the session (including the portions of the vacations for which the respective laboratories are open); if admitted for shorter periods they will be charged £2 12s. 6d. a term, or one guinea a month. This scale will in no case apply to students preparing for a Bachelor's degree unless they have completed the third year course of study in the University.

(3) Persons prosecuting private industrial investigations will, if admitted as research students, be charged ordinarily at the rate of two guineas a month.

(4) Research students will not be charged the registration and library fee; they will not be entitled to the use of the students' Common Rooms except on payment of the subscription of 10s. 6d. to the Students' Union.

4. Examination Fees

No fee will entitle to admittance to more than *one* examination. Unless otherwise stated, the fee for a second or subsequent examination is the same as that for the first.

For the Matriculation examination, £2, but a candidate who has failed in the July examination in any year will be admitted to the September examination in the same year for £1 10s.

For the Intermediate examination for the degree of B.A., or B.Sc., or LL.B., or B.Com., £1.

For the Final examination for the Ordinary or Honours degree of B.A. or B.Sc., or LL.B., or B.Com., £1.

For the Final examination for the Honours degree of B.A. or B.Sc., in cases where no fee has been paid for the Intermediate examination, £2.

For the Final examination for a degree in Honours when the Ordinary Final examination has previously been taken, £1.

For the examination or report upon dissertation for the degree of M.A. or M.Sc. or LL.M., £1.

For the examination or report upon dissertation for the degree of Litt.D., or D.Sc., or LL.D., £5.

For the examination in Education for the Government Certificate, 5s.

For the Final examination for any Diploma in the Faculties of Arts, Science and Technology (including the final terminal examination in cases where students are not taking any special examination in the main subject of study), £1.

Candidates who are allowed to take any examination in two or more parts will be required to pay the full fee for such examination when entering for the first part.

Candidates who, having failed at an Intermediate or Final examination or an examination for a Diploma in Arts or Science, present themselves again for examination will be charged the same fee as that for the first examination. This rule is subject to the following conditions for special cases :—

When the regulations allow a candidate to take part of an Intermediate or Final examination separately, the following fees will be charged for re-examination, viz. :—

- (a) For the additional subject at Intermediate stage for B.Sc., 5s.
- (b) For a subsidiary subject at Final stage for B.A. or B.Sc., 5s.
- (c) For the Essay for B.Sc., 5s.
- (d) For a principal subject at Final stage for B.Sc., £1, except in the case of an Honours Candidate who is taking a principal subject as a part of such Honours examination, in which case the fee will be 10s.

Students who have graduated in the Faculties of Arts or Science will be required to pay an additional fee of 10s. when a Diploma is granted consequent upon the attainment of their degree without further examination.

5. Degree Fees¹

On the conferment of any degree in the Faculties of Arts (including Commerce and Law) and Science, £5.

ENTRANCE SCHOLARSHIPS

The following Scholarships, tenable from October, 1912, at Day Classes in the University of Leeds, will be offered for competition to candidates who have not been registered students of the University and who will be not less than 16 or more than 19 years of age on October 1st, 1912. Attendances on University classes or laboratories not exceeding three hours a week in any session will not be held to preclude a student from becoming a candidate for an Entrance Scholarship under this regulation. The latest date of entry for these Scholarships is *May 1st*, after which no application will be received. In most instances they are awarded in connection with the July Matriculation examination. Particulars of conditions, &c., will be found in subsequent pages.

¹ These do not apply to Honorary Degrees.

1. Awarded on Results of Matriculation Examination

Name of Scholarship.	Number offered.	Annual Value of each.	Periods for which tenable.	Departments in which tenable.
Leeds City Council	One ..	£50	3 years	Arts, Sci., Tech.
Emsley	Two ..	£20	2 years	Arts, Sci., Tech. exc. Tex.
Edward Baines ..	One ..	£20	2 years	Arts, Sci., Tech. exc. Tex.
William Summers ..	One ..	£35	3 years	Arts.
Brown	One ..	£40	2 years	Science, Tech.
Akroyd	Two ..	£40	and renewable 2 years	Science, Tech.
Medical	One ..	Fees for complete course (excluding clinical instruction).	3 years	Medicine
Craven	One ..	£25	3 years	Tech. (Engineering).

2. Awarded by Special Examination

William Cooke & Co.	One ..	£21	2 years	Tech. (Mining)
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In addition to the above Scholarships the University offers a certain number of Advanced or Senior Scholarships, full particulars of which are given in subsequent pages.

Scholarships are also offered by the Leeds City Council and the County Councils of the North, East, and West Ridings of Yorkshire, tenable at the University of Leeds in common with other institutions, in scientific and technical subjects, (including Agriculture) as well as in Arts subjects. In the West Riding exhibitions are also offered in Coal Mining, and Free Studentships tenable at the University.

In certain cases assistance is offered to students in Evening Classes.

For further information apply as follows :—

For Leeds City Council Scholarships: The Secretary for Education (Higher Section), Education Department, Leeds.

For West Riding Scholarships and Free Studentships: The Education Department, County Hall, Wakefield. Applicants should ask for Section X of Part II. of the Handbook of the Education Committee.

For North Riding Scholarships : The Secretary, Education Offices, County Hall, Northallerton.

For East Riding Scholarships : The Clerk, East Riding County Council, Beverley.

OFFICERS' TRAINING CORPS

Commanding Officer :

Major E. KITSON CLARK, 7th Bn. W. Yorks. Regt. (seconded)

Subaltern :

2nd Lt. H. BROWN, Unattached List Territorial Force.

Adjutant :

Captain F. H. NUGENT, The Rifle Brigade (attd. General Staff).

Staff Sergeant : Colour Sergeant Instructor W. H. FEAR.

A contingent of the Senior Division of the Officers' Training Corps was formed at the University in January, 1910, and was accepted by the War Office. The Officers' Training Corps includes as Senior Division all Members of existing University Cadet Corps throughout the country, and many Universities, including Leeds, have joined it.

Its primary object is to provide students at schools and Universities with a standardised measure of elementary military training, with a view to their eventually accepting commissions in the Special Reserve or the Territorial Force.

The Officers' Training Corps does not form part of the Territorial Force ; it is independent of County Associations, and for purposes of organisation and control is directly under the War Office. Its training is under the direction of the Chief of the General Staff. Cadets, on joining the Corps, are not enlisted and incur no legal liability to service. They agree, however, to abide by the rules of the contingent which have been approved by the War Office.

Two certificates of proficiency are obtainable in the Corps, which confer special advantages on cadets who accept commissions in the Special Reserve or the Territorial Force, or offer themselves as candidates for Woolwich, Sandhurst or the R.A.M.C. By means of the facilities thus offered to men who wish to serve their country with the least possible interference with their civil career, it is hoped that the supply of

officers may be increased, so that all arms and services may be fully complete on mobilization.

The Leeds University Contingent consists of one company of infantry; strength (1910-11), 2 officers and 125 other ranks. All students attending University classes, as well as members of the University staff, are eligible for enrolment. Cadets enrol for two years, and there is an annual subscription of five shillings. A portion of Woodhouse Lodge has been given by the University for use as headquarters by the Contingent. Drills are held at headquarters and at Carlton Barracks, and the Contingent has the use of the 8th Batt. West Yorks. Rifle Range.

Camp is held for a fortnight annually at the end of July and beginning of August, contingents from different Universities being generally brigaded together. Full particulars as to the rules, &c. of the Contingent, and as to the terms of service and the pay in the Special Reserve and the Territorial Force can be obtained at headquarters.

UNIVERSITY LIBRARY

Honorary Librarian : Professor VAUGHAN

Librarian : Miss F. J. PASSAVANT

Assistants :

Miss F. M. EKINS

Miss M. S. GADNEY, B.A.

The Library is open (*a*) daily during term and the months of July and September from 9 a.m. to 5.30 p.m. (on Saturday from 9 a.m. to 1 p.m.); (*b*) during the second half of August and during the Christmas and Easter vacations from 10 a.m. to 1 p.m.

It is closed during the first half of August, one week at Christmas, Good Friday, and the following Saturday, Monday, and Tuesday, and Whit-Monday and Tuesday.

General Regulations

1. No book shall be removed from the Library unless the borrower shall have first filled in the form provided and handed it to a member of the Library staff.

2. No mark of any kind may be made in the Library books or periodicals. Any loss of, or injury to, a book shall be reported by the Librarian to the Library Committee, who shall require the person responsible to pay a sum not exceeding that which will be required to make the loss or injury good.

3. The Honorary Librarian has power to suspend the Library privileges of any person who breaks the rules of the Library.

4. No atlases, dictionaries, or other books with special labels shall be taken out of the Library, except in so far as provided in subsequent paragraphs.

5. No person shall be allowed to take a book out of the Library if he has in his possession any book which he has kept beyond the time allowed by the regulations, or if any fine or charge which he has incurred has not been paid.

6. Persons not members of the University who are engaged in special studies may be given the right to use the Library by the Honorary Librarian.

7. The Honorary Librarian shall be at liberty to grant special facilities for the use of books during a limited time to any person entitled to the use of the Library.

Regulations affecting Members of the Academic Staff

8. Any member of the Academic Staff shall be entitled to take out such books as he requires and to retain them until the end of term, unless he receives a notice that any of these books are overdue, in which case such book or books shall be returned without delay to the Library. A book shall be regarded as overdue when it has been in the possession of the borrower for a fortnight and is required by some other person. This regulation shall apply, *mutatis mutandis*, to books taken out at the beginning of, or during, any of the vacations.

9. A book which is not overdue according to Rule 8 may be renewed for the vacation on application in writing to the Librarian.

10. All books must be brought back to the Library at the end of the third term, but books not required by any other person may be renewed on presentation.

11. Current University Calendars and current serials may be taken out of the Library for one night only, and not before 5 p.m. Other unbound serials may be taken out of the Library for a period not exceeding 48 hours.

12. At the close of each session, *i.e.*, between June 15th—20th, notice shall be sent to each member of the Academic Staff of the books which at that date he has still in his possession, and a day named on or before which they must be returned to the Library. In case they are not returned by that day, a second notice shall be sent to the borrower; and, in case the books are not returned within three days after the sending of this notice, he shall be liable to a fine of 2s.6d. for each volume, or, if there be further delay, to be charged with the sum required for the replacing of the missing volume or volumes.

Regulations affecting present and past Students of the University

13. All graduates of the University and Associates of the Yorkshire College are entitled to the free use of the Library.

14. All registered students who have paid the registration and Library fee are entitled to the use of the Library. Day students who have paid

the sessional fee of 7s. are entitled to the use of the Library during the session covered by that fee.

15. All other day students, all evening students, and all past students who are not graduates are entitled to the use of the Library on payment of a fee of 2s. 6d. per session.

16. Not more than three volumes, whether of the same or of different works, may be entered to the same person at one time.

17. Every book must be returned to the Library on or before the Saturday in the week following that in which it was taken out. A book may, however, be renewed from week to week until four weeks have elapsed since its first issue, provided that no application for the use of the book by another person has been received in the meantime.

18. All books must be brought to the Librarian for renewal, except when an application for renewal has been made and granted on the day before that on which the return of the book falls due. Applications for renewal may be made personally or by post.

19. At the end of each term all books must be returned to the Library.

20. Books of reference and books which, owing to their constant use, are temporarily placed on the list of books of reference, may not be removed from the Library (except under Rule 21), until after 5 p.m., and then only on condition that they be returned before 10 o'clock on the following morning.

21. Students provided with a written recommendation from a Professor or Lecturer shall be entitled to take out books of reference, but books taken out under this rule must be returned to the Library before the person using them leaves the University buildings.

22. Any person borrowing a book under Rule 20 or Rule 21, and failing to return it by the time therein specified, shall be fined 2d. a day, and any person who does not comply with Rule 17, shall be fined 1d. a day for every day a book is kept out after it ought to have been returned. A notice shall be posted to the borrower on the business day following that on which the return of the book was due, informing him that a fine is being incurred.

23. Books may, subject to the provision of regulation 24, be taken out at the beginning of, or during, any of the vacations, and may be retained until the borrower receives notice that they are overdue. A book shall be regarded as overdue when, having been in the possession of the borrower for a fortnight, it is required by some other person. All books taken out at the beginning of the long vacation shall be returned not later than the first of September.

24. Students desiring to borrow books for the vacation are required to procure a recommendation signed by a Professor or Lecturer of the University. Printed forms for this purpose may be obtained from the Librarian.

Regulations respecting Seminar Rooms.

1. *General status of Seminar rooms.*—Seminar rooms, being departments of the University Library, are subject to the Regulations of the University Library, except in so far as modified by the following rules.

2. *Hours of opening.*—Seminar rooms shall be open during the hours in which the University Library is open to readers.

3. *Supervision.*—The Head of a Department to which a Seminar room is assigned shall appoint an Honorary Keeper to supervise the use of the Seminar room and books, under the general control of the Head of the Department.

4. *Admission to Seminar rooms.*—The use of a Seminar room is restricted, except as provided in Rule 9, to persons recognised by the Head of the Department as members of the Seminar. A list of such members shall be posted from time to time in the Seminar room by the Head of the Department, who shall supply the Librarian with a copy of the list.

5. *Seminar Libraries.*—A Seminar library shall consist of books selected by the Head of the Department, in consultation with the Honorary Librarian, and approved by the Library Committee. A special catalogue of each Seminar library shall be prepared in duplicate, of which one copy shall be kept in the Seminar room and one in the General Library.

6. *Books confined to a Seminar.*—A list of books strictly confined to a Seminar room shall be drawn up by the Head of the Department, in consultation with the Honorary Librarian, and posted in the Seminar room. Books included in this list must not be removed from the Seminar room except for purposes of consultation in the General Library under Rule 8.

7. *Use of Seminar libraries by members.*—(a) Members of a Seminar may, subject to the provisions of paragraph 6, borrow books from a Seminar library under the Regulations of the University Library.

(b) An issue-slip must be filled in when books are taken out of the General Library for use in a Seminar room. The member who takes out books for this purpose must return them to the Librarian on leaving.

8. *Use of Seminar libraries by non-members.*—Persons who are not members of a Seminar may, subject to the provisions of paragraph 6, (a) consult in the General Library, (b) borrow, under the Regulations of the Library, books kept in a Seminar room, upon filling in an issue-slip and presenting it to the Librarian, who will cause the books applied for to be brought into the General Library. Such books whether consulted or borrowed must be returned to the Librarian when done with.

9. *Use of Seminar libraries by members of the staff.*—Members of the Academic staff shall have access to any Seminar room for the purpose of consulting books kept in it, except at times when teaching is proceeding in the Seminar room.

They may borrow books from a Seminar library under the Regulations of the University Library applicable to members of the Academic staff, subject to the restrictions following:—

(a) They are not entitled to borrow books strictly confined to a Seminar room under the provisions of paragraph 6.

(b) They are not entitled to borrow reference books kept in a Seminar room, except after 5 p.m., and they must return books so borrowed before 10 a.m. on the following day.

ACADEMIC DRESS

All Hoods are to be of a Green shade, combined with Black, White, Scarlet, or with one another, to produce the variations required for the several Degrees, namely :

B.A., a self-coloured Hood of Dark Green shade.

B.Sc., a self-coloured Hood of Middle Green shade.

LL.B., a self-coloured Hood of Light Green shade.

M.B. and Ch.B., a Hood of Dark Green, lined with Light Green.

M.A., a Dark Green Hood, with White Lining.

M.Sc., a Middle Green Hood, with White Lining.

LL.M., a Light Green Hood, with White Lining.

M.Ch., a Dark Green Hood, edged with Light Green, and lined with White.

All Bachelors' Hoods are to be lined, and all Bachelors' and Masters' Hoods are to be of the single or Oxford pattern.

The Doctor's Gown is to be of Scarlet, with facings and sleeve linings of the shade of Green distinctive of his faculty. The Hood is to be of Scarlet, lined with the distinctive shade or shades of Green. The Full Dress Cap is to be of the usual pattern, with a Gold Cord, and a lining of the shade of Green distinctive of the faculty.

ROBEMAKERS TO THE UNIVERSITY

Ede, Son & Ravenscroft, 93 and 94, Chancery Lane, London.

Representatives of the firm attend on Degree Days to robe those who are to be presented for degrees.

ARMS OF THE UNIVERSITY

The Arms of the University are "Vert an open Book proper edged and clasped Gold inscribed with the words 'Et Augebitur Scientia' between in chief three Mulletts Argent and in base a Rose of the last seeded proper, and for the Crest on a Wreath of the Colours A Greek Sphinx sejant Gules."

STUDENTS' SOCIETIES

The University Union comprises the Cricket, Football (Rugby and Association), and Tennis Clubs, and undertakes the management of the Gymnasium, the Fives Courts and

the Debating Society. Among other University Societies are the Women's Representative Committee, the Literary and Historical Society, the Debating Society, the Education Society, the Cavendish Society, the Natural History Society, the Engineering Society, the Textile Society, the Agricultural Society, the Society for Social Study, the Women's Discussion Society, and the Christian Union.

GYMNASIUM

Instructor: MASON CLARK

The Gymnasium is free to all members of the University Union. It is reserved for the use of women students at suitable hours, which, together with those arranged for other classes, will be announced at the beginning of the session.

LOCKERS FOR COATS AND BOOKS

The use of a coat locker during the whole or part of one session may be obtained for the session, or a part of it, by depositing 5s. with the Hall Porter, who will lend the student a key, which will, however, remain the property of the University. A charge of 3s. per session will be made, the balance of the deposit money being repaid when the key is returned, provided the return be made not later than one week after the end of the session.

Smaller lockers, for books, &c., are also provided, and the use of one of these may be obtained on a deposit of 3s. for the session or term, 2s. of which will be repaid on the above conditions being complied with.

A student will be charged for any damage done to the lockers while in his possession, or for loss of keys. The loss of a key should be immediately reported to the Hall Porter.

LODGING AND BOARDING HOUSES

A Register of approved lodging-houses is kept at the University, and printed lists can be sent at any time to parents, guardians, or students who desire to take lodgings.

If a student takes lodgings which are not already on the register, he must immediately apply to the Registrar for a form of application for registration of lodgings. This form must be filled in and returned at once, when the lodgings

will be visited on behalf of the University, and if they do not satisfy the prescribed conditions the student will be required to leave them.

No back-to-back houses will be regarded as fulfilling the prescribed conditions.

All communications with regard to lodgings should be addressed to the supervisor of students in lodgings, Mr. W. H. Perkins, The University, Leeds.

LYDDON HALL

(Licensed by the Court of the University as a Hall of Residence)

Resident Staff:

Warden: PROFESSOR J. KAY JAMIESON.

Tutors:

A. SEYMOUR-JONES, M.Sc.

The object of this Institution is to supply men students with the advantages of a common collegiate life, by providing a Hall of Residence similar to those which have been established in connection with the Victoria University of Manchester, with the Edinburgh University, and with some of the London Medical Schools.

The Hall of Residence has been erected upon a suitable site within five minutes' walk from the University, and is furnished with every attention to the health and comfort of the students. The accommodation consists of Dining Hall, Recreation Room, and other rooms for common use, and a separate room furnished as a private study and bedroom for each student. The charge is twenty-two guineas for each of the first and second terms and eighteen guineas for the third term.

Applications for admission should be sent to the Warden, Lyddon Hall, Virginia Road, Leeds.

REFECTORY

For the convenience of students, dinners are served daily in the University Refectory, from 12.30 to 2 p.m. Cold meats may also be obtained after the latter hour; tea, coffee, and other light refreshments up to 6 p.m. The Refectory is closed on Saturdays at 2 p.m.

Term tickets may be had on application to the Registrar, entitling students to dine at the Refectory, College Road,

daily (except Saturdays) during the session. The cost of such tickets, which must be prepaid, is £6 10s. per session or £2 10s. per term for the first and second terms, and £2 5s. for the third term for men students, and £5 10s. per session or £2 5s. per term for the first and second terms, and £2 for the third term for women students. Places will be reserved for those who pay for their dinners by the term.

CECIL DUNCOMBE OBSERVATORY

Curator: A. GILLIGAN, B.Sc.

The Cecil Duncombe Observatory was opened on May 4th, 1906, by Dr. H. H. Turner, Savilian Professor of Astronomy in the University of Oxford. It is built on a site in Woodhouse Moor contributed by the Leeds City Council. The telescope, an 18 $\frac{1}{4}$ inch reflector of the Newtonian type, was given to the University by Major Duncombe, of Nawton Grange, and formerly belonged to his father, the late Hon. Cecil Duncombe. Its large mirror, made by Mr. G. Carver, of Walpole, Sussex, for Dr. Common, was the first successful large glass mirror made in England. In addition to the large equatorial there are a 3 inch transit instrument and a sidereal clock.

The Observatory is administered by a Committee representing the University, the Leeds Astronomical Society, and the Leeds City Council.

Regulations

1. The Observatory and instruments shall be under the control of the Curator, and no person shall be allowed to go into the Observatory or to use the instruments unless he is present, except as provided for in Rule 6.
2. The Curator will attend at the Observatory, on an average, two nights per week during the session of the University, when persons eligible under Rule 4 may attend. All arrangements as to classes and observing nights must be made with the Curator.
3. Not more than twelve persons shall be admitted to the Observatory at any one time.
4. The following will be allowed to use the Observatory under Rule 2:
 - (a) Members of the University staff;
 - (b) Students of the University, on the recommendation of heads of departments;

- (c) Members of Astronomical Societies ;
- (d) Teachers in the schools of the Leeds Education Committee, in groups of not more than six persons ;
- (e) Senior scholars from schools of the Leeds Education Committee, if accompanied by a teacher, who should, if possible, be one interested in the subject ;
- (f) Teachers in Leeds schools other than those of the Leeds Education Committee, by special arrangement with the Curator ;
- (g) Such other persons as the Observatory Committee may from time to time determine.

5. Persons wishing to use the Observatory under Rule 4, sections (d) and (e), must apply for a recommendation to the Leeds Education Committee.

6. Permission to use the Observatory for research work in the absence of the Curator may be granted by the Observatory Committee (1) to Professors and Lecturers of the University teaching Physical Geography or Surveying, who may, subject to Rule 3, use the Observatory for class purposes, (2) to such persons as may be specially recommended by the Committee of an Astronomical Society as competent to use the instruments, it being understood that the permission will apply to the authorised person only, who may not admit any other person, and (3) to other persons approved by the Observatory Committee.

7. A list of persons authorised to use the Observatory under Rule 6 shall be supplied to the Hall Porter at the University, who will issue a key of the Observatory to the authorised observer on personal application.

The key must be returned immediately on leaving the Observatory, or before noon on the day following.

8. Permission to use the Observatory under Rule 6 may be withdrawn by the Committee at any time ; and the Observatory will only be available under that rule when it is not required for class purposes.

9. Persons using the instruments under Rule 6 shall be held responsible for their proper use during the time they or their students may occupy the Observatory, and shall be liable to make good any damage they or any of them may do to the instruments.

They will also be responsible for the safe closing and locking of the building on leaving it.

10. A book shall be kept in the Observatory in which all persons using the instruments will be expected to enter their names, with the hours during which they have been present, and the nature of the work upon which they have been employed.

11. The Curator is empowered to refuse admission to any person, or to require him to withdraw from the Observatory, without giving any reason to the person concerned ; but any such action shall be reported to the Committee at its next meeting.

MATRICULATION EXAMINATION

The Regulations regarding the Matriculation examination are subject to modification. For authentic information the Syllabus of the Joint Board for 1912 must be consulted.

All communications relating to this examination should be addressed to "The Secretary, Joint Matriculation Board, 24, Dover Street, Manchester."

For particulars of the Matriculation examination in the Faculty of Medicine see page 441.

The Matriculation examination is conducted by a Joint Board representing the Victoria University of Manchester, the University of Liverpool, the University of Leeds, and the University of Sheffield. Candidates for degrees in any one of these Universities are required to have passed this examination, or to have obtained exemption therefrom, before beginning a degree course. Any application for exemption must be addressed to the Joint Matriculation Board, and must be accompanied by the certificate or certificates upon which the application is based. Grants of exemption will be subject to and conditional upon the payment of the registration fee of £2. The examination is held in July and September of each year in the buildings of each University. The July examination is held at such other centres as the Board may authorise, and it is also held at schools as a form examination. Information as to the conditions may be obtained from the Secretary to the Joint Board.

Candidates must apply to the Secretary of the Joint Board for a form of entry, which must be forwarded to the Secretary on or before MAY 26th or SEPTEMBER 1st respectively, accompanied by the proper fee. The fee for the examination is £2; but a candidate who has failed in the July examination in any year will be admitted to the September examination in the same year for a fee of £1 10s. Cheques and postal and money orders should be made payable to "The Secretary, Joint Matriculation Board," and crossed "Williams Deacon's Bank, Ltd., Chorlton-on-Medlock Branch."

The names of candidates who have passed the Matriculation examination are published in two divisions, the names in each division being arranged in alphabetical order.

¹Conditions of Exemption from the Matriculation Examination

The conditions named are additional to the obligatory subjects of (1) English Language and Literature, (2) English History, and (3) Mathematics, which appear upon every certificate issued.

A student is entitled to exemption from the Matriculation examination provided he has satisfied any one of the following conditions :

(a) Has passed Responsions of the University of Oxford, including both Geometry and Algebra, and one Additional Subject.

(b) Has passed Parts I. and II. of the Previous Examination of the University of Cambridge, and also passed in one of the Additional Subjects of that examination.

(c) Has passed the Matriculation examination of the University of London and presents a certificate containing, beyond the obligatory subjects of English and Elementary Mathematics, *three* of the following subjects, of which one must be a Language : Greek, Latin, French, German, Mechanics, Chemistry, Geography.

(d) Has gained a Higher Certificate or Higher Certificates of the Oxford and Cambridge Schools Examination Board, including (1) one foreign language, (2) *either* English *or* English History, in either case with English Essay ; (3) Elementary Mathematics together with Algebra and Geometry as required for passing in Additional Mathematics ; (4) *two* other subjects (of which Scripture Knowledge shall not be one) which may include the alternative subject not taken under (2), and Additional Mathematics. These conditions will be satisfied if a girl candidate presents a certificate which does not satisfy these conditions, providing that she presents also a later "Letter" containing the subjects wanting on the certificate.

¹ The holder of a certificate who desires exemption must submit the certificate to the Secretary, Joint Matriculation Board, for verification of the subjects.

(e) Has obtained a School Certificate of the Oxford and Cambridge Schools Examination Board, provided the candidate has passed at one and the same examination, (1) in English (passing separately in (a) English Composition and Précis-writing, (b) Reproduction of a passage read to the candidate, (c) English Literature); (2) in History; (3) in Additional Mathematics (having obtained 50 per cent. of the total in the three papers on Arithmetic, Algebra, and Geometry taken together); (4) in *two* of the following subjects (one of which must be a language): (a) Greek, (b) Latin, (c) French, (d) German, (e) Geography, (f) Statics, Dynamics, and Trigonometry, (g) Chemistry, (h) Physics, (i) Physics and Chemistry.

(f) Has obtained an Oxford Senior Local Certificate, provided that the candidate has passed at one and the same examination in (1) English Language and Literature, including Composition; (2) Arithmetic, Geometry, and Algebra; and (3) *either* History *or* Geography, and *two* of the following nine sections, one at least being a language, namely: (a) Latin, (b) Greek, (c) French, (d) German, (e) Italian, (f) Spanish, (g) one subject in Higher Mathematics, (h) Chemistry, (i) one subject in Physics.

(g) Has obtained a Cambridge Senior Local Certificate, provided that the candidate has passed at one and the same examination in (1) English Language and Literature, including Composition; (2) Arithmetic, Geometry, and Algebra; and (3) *either* History *or* Geography, and *two* of the following eight sections or parts of sections, one at least being a language, namely: (a) Latin, (b) Greek, (c) French, (d) German, (e) Spanish, (f) an additional subject in Mathematics, (g) Chemistry, (h) one subject in Physics.

(h) Has obtained the Leaving Certificate of the Scotch Education Department, provided that the candidate has passed at one and the same examination at the Higher or Honours Grade in (1) English, (2) Mathematics, and (3) in *three* other subjects included in the schedule of the Matriculation examination of the Board, one at least of these being a language.

(i) Has obtained the Senior Certificate of the Central Welsh Board, provided the candidate has passed at one and the same examination in (1) English Language and Literature, (2) English History, (3) Mathematics, (4) *three* of the following subjects, *one* at least being a language: (a) Latin, (b) Greek, (c) French, (d) German, (e) Italian, (f) Spanish, (g) Physics, (h) Chemistry, (i) Elementary Biology, (j) Geography.

Privileges of Holders of Matriculation Certificates

The conditions named are additional to the obligatory subjects of (1) English Language and Literature, (2) English History, and (3) Mathematics, which appear upon every certificate issued.

The Board of Education accepts the Matriculation certificate for the purpose of admission to Training Colleges. For the conditions consult the Regulations for the Training of Teachers for Elementary Schools, 1911 (pages 50 and 53).

Women candidates who have passed the examination and taken two languages are eligible for the Honours examinations at Oxford.

Provided Latin be one of the subjects taken, the certificate is accepted by the Law Society in lieu of the Preliminary examination.

Provided certain conditions (for which see syllabus) are complied with, the certificate is accepted by the Universities of Oxford, Cambridge and London in lieu of the examination in stated subjects at Responsions, the Previous examination and the Matriculation examination respectively.

The certificate is accepted by the Joint Board of Examiners of the Scottish Universities in lieu of the Preliminary examinations in medicine.

The certificate will be accepted by the Institution of Civil Engineers in lieu of the Studentship examination provided it includes *either* Mechanics *or* Chemistry, and *either* the Higher Alternative Papers in Mathematics *or* the additional paper in Mathematics.

The certificate of having passed the examination is accepted by the General Medical Council for the purpose of registration as a Medical student, provided Latin and *either Greek or a Modern Language* be included among the subjects.

The certificate is accepted by the Institute of Chartered Accountants in lieu of the Preliminary examination, except as to dictation.

The certificate of having passed a public examination of a University is accepted by the Inns of Court, by the Royal Institute of British Architects, and by the Institute of Chemistry.

For the present and until otherwise determined, Barristers called to the Bar and Solicitors admitted on the rolls previous to the 1st of January, 1893, will be exempt from the Matriculation examination (Faculty of Law). The Board is prepared to consider applications for exemption in the Faculty of Law from persons called to the Bar, or admitted on the rolls, previous to the 1st of January, 1896.

The Board is prepared to receive and consider applications for exemption from the Matriculation examination to proceed in the Faculty of Law from Solicitors who have obtained Honours in the Final examination of the Law Society, or from Barristers who have been placed in the first or the second class in the Bar Final examination, such applications being made not earlier than three years after their call to the Bar or admission on the rolls respectively.

Subjects of Examination

Candidates for entrance to the Faculties *other than the Faculty of Medicine* presenting themselves for the Matriculation examination are required to satisfy the Examiners in six subjects:

1. English Language and Literature
2. English History
3. Mathematics

4. *Three* of the following, *one* of which must be a language

i. Greek

ii. Latin

iii. French

iv. German

v. Some other Language approved by the Board¹

[The following languages have been approved :—Arabic, Sanscrit, Spanish, Portugese, Italian, Russian, Hebrew, Persian, Chinese, Pali.]

vi. *Either* Mechanics *or* Physics

vii. Chemistry

viii. Geography (Physical, Political, and Commercial)

ix. Natural History (Plants and Animals).

Details of Subjects

ENGLISH LANGUAGE AND LITERATURE :

(1) An essay.

(2) (a) Set books for general reading ; (b) Set books for special study ; (c) Questions on the use of the English Language arising from the set books.

ENGLISH HISTORY :

The outlines of English History. The paper will be divided into two sections, respectively containing questions on Mediæval and Modern History.

MATHEMATICS :

Arithmetic. The elementary geometry of triangles, parallelograms, and circles, and of similar rectilinear figures. Algebra to quadratic equations (inclusive), with the arithmetical and geometrical progressions and an elementary treatment of irrational quantities and of proportion.

Mathematics (additional paper). Graphs of simple rational integral algebraic functions, Theory of Indices, Logarithms, the Binomial Theorem for a positive integral index, Trigonometry up to and including the solution of triangles.

GREEK :

Either one prose and one verse book including questions on the language and subject matter *or* passages from unprepared books, with grammar questions. Grammar. Translation at sight of easy Greek passages into English. Translation of English passages into Greek.

Special stress will be laid upon accuracy in the answers to the grammar questions, and on the correct rendering of English into Greek.

¹ Application for permission to present this must be made to the Secretary, Joint Matriculation Board, 24, Dover Street, Manchester, and the fee must be paid on or before March 1st of the year in question.

LATIN :

Either one prose and one verse book including questions on the language and subject matter *or* passages from unprepared books, with grammar questions. Grammar. Translation at sight of easy Latin passages into English. Translation of an easy passage of English prose into Latin.

Candidates, in order to pass, must satisfy the examiners in translation at sight from English into Latin, from Latin into English, and in grammar.

FRENCH :

Accidence and elementary syntax. *Either* translation from two prescribed French books, including questions on the language and subject matter *or* passages from unprepared books, with grammar questions. Translation at sight of French prose into English. Translation of English passages into French.

GERMAN :

Accidence and elementary syntax. *Either* translation from two prescribed German books, including questions on the language and subject matter *or* passages from unprepared books, with grammar questions. Translation at sight of German prose into English. Translation of English passages into German.

OTHER LANGUAGES :

Details as for French and German.

MECHANICS :

The elementary portions of statics, kinetics, and of the properties of liquids and gases, including : Laws of motion. Uniform acceleration. Composition and resolution of forces in one plane. Moments of forces. Work and energy. Centre of gravity. Uniform circular motion. Simple pendulum. Direct impact. Fluid pressure. Specific gravity. Boyle's Law.

PHYSICS :

Not less than one-third of this paper will consist of easy questions in *mechanics*.

Candidates must satisfy the examiners in the *mechanics* portion of the paper and in *one* of the two following groups of subjects :

- (a) Heat and light.
- (b) Magnetism and electricity.

Heat :

Temperature, Thermometer, Expansion of Solids and Liquids, Laws of Gases, Quantity of Heat, Specific Heat, Latent Heat, Vapour Pressure, Conduction, Radiation.

Light :

Laws of Reflexion and Refraction, Photometry, Formation of Images by Mirrors and Lenses, Chromatic Dispersion, Standard Combinations of two Lenses.

Magnetism :

Magnets. Magnetic properties and magnetic induction. Magnetic force. Magnetic field. Lines of force. Terrestrial magnetism.

Electricity :

Elementary facts of statical electricity (including condensers, law of electric force and potential). Simple voltaic cell. Magnetic field of current. Measurements of current. Galvanometer. Electromotive force. Resistance. Ohm's law. Electrolysis. Heating effects of currents. Electro-magnetic induction.

In setting the questions regard will be paid to the conditions under which the subjects may be best taught experimentally in schools.

CHEMISTRY :

General properties of matter. Chemical combination and decomposition and the laws governing them. Preparation, classification, and chemical behaviour of the chief elements and their compounds, especially of the non-metals. The outlines of chemical theory.

Candidates will be expected to show by their answers that they have seen experiments illustrative of all the subjects included in this syllabus, and that they have themselves performed a variety of simple qualitative and quantitative experiments.

GEOGRAPHY (Physical, Political, and Commercial) :

(a) Distribution of land and water. Land-forms and agencies modifying them. Distribution of temperature, winds, rainfall, vegetation and animal life. Human occupations and activities (agricultural, industrial, and commercial) as determined by these physical conditions.

(b) The following regions to be studied so as to illustrate the subjects stated in section (a).

(1) The British Isles (with outlines of the historical geography in addition).

(2) A special region or regions (to be specified yearly) in less detail.

(3) The rest of the World on broad lines only.

(c) Candidates will be expected to be able to read an ordnance map.

NATURAL HISTORY :

Candidates are expected to show such knowledge of the subject matter of the Syllabus as can be acquired by naked eye observation and the use of the hand lens.

A.—Botany: 1. The structure and mode of life of plants.

(a) The elementary facts of the nutrition of green plants as shewn by simple experiments.

(b) The form and function of roots, stems, and leaves, and their adaptations to the environment.

(c) The nature and structure of common fruits and "vegetables," and of wood and cork.

(d) The structure and function of a typical flower.

(e) Modes of pollination of common flowers.

(f) Modes of dispersal of seeds and fruits.

- (g) The structure of a seed and its mode of germination as seen in the maize, the bean, the melon, and other common seeds.
- (h) Vegetative reproduction of plants by bulbs, by tubers, and in other ways.
- 2. The classification of plants. The general characters of the following British natural orders: Liliaceæ, Ranunculaceæ, Cruciferae, Leguminosæ, Rosaceæ, Primulaceæ, Labiatae, Compositæ, Salicaceæ.

B.—Zoology:

- (a) The general structure and elementary physiology of a mammal; knowledge of the chief features of the skeleton is expected.
- (b) The external form, mode of life and habits of the bat, cat, dog, rabbit, sheep, horse, kangaroo, and whale.
- (c) The wing, feathers, beak, and foot of a bird.
- (d) The nests and eggs of birds, as exemplified by two or three common British species. A fowl's egg: the shell, air-chamber, albumen, yolk and germinal disc (blastoderm).
- (e) The general structure and life-history of a frog.
- (f) The general structure and mode of life of a fish.
- (g) The external features and mode of life of an earth-worm, a cock-roach, and *either* a snail *or* a slug.
- (h) *One* of the following groups:
 - i. (Marine animals). The general structure, habits and mode of feeding of a sea-anemone, a coral, a crab, a star-fish, *either* a mussel *or* an oyster.
 - ii. (Inland animals). The general structure, habits, and mode of feeding of hydra, a pond-mussel, a crayfish, a spider, *either* a moth *or* butterfly (including the life-history).

Books prescribed for 1912

GREEK, *one* book from each of (a) and (b):

- (a) Plato, *Crito*, *or* Xenophon, *Anabasis* iv.
- (b) Euripides, *Alceste* (omitting 77-135, 213-279, 569-605, 861-932), *or* Homer, *Iliad* i (1-492) and vi.

LATIN, *one* selection from each of (a) and (b):

- (a) Caesar, *de Bello Gallico* iv, 20-v, 23, *or* Cicero, *in Catilinam* i and iii.
- (b) Vergil, *Aeneid* ii, *or* Horace, *Odes* iii (omitting 10, 11, 12, 15, 19, 20, 27).

FRENCH, (a) and *one* selection from (b):

- (a) Daudet, *Lettres de mon moulin* (Macmillan & Co.).
- (b) Molière, *Les Précieuses ridicules*, *or* Victor Hugo, *Selected Poems* (Pitt Press), (omitting pages 26-45, 50-61, 73 to the end).

GERMAN, (a) and one selection from (b) :

- (a) Heyse, *Das Mädchen von Treppi* (ed. Jaynes, Heath & Co.).
- (b) Buchheim's *Balladen und Romane* (Macmillan & Co.) ; Bürger, *Der Kaiser und der Abt*, *Der Wilde Jäger* ; Schiller, *Der Ring des Polykrates*, *Die Bürgschaft* ; Uhland, *Des Sängers Fluch*, *Das Glück von Edenhall* ; Wilhelm Müller, *Der Glockenguss zu Breslau* ; Seidl, *Hans Euler* ; or *Das Nibelungenlied*, part i (ed. Cotterill, Blackie & Sons).

ENGLISH LANGUAGE AND LITERATURE :

For general reading :

Cowper's *Poems* (Golden Treasury Series).
Thackeray, *Esmond*.

For special reading :

Three selections, one from each of (a), (b), and (c) :

- (a) Shakespeare, *Julius Cæsar*, or Shakespeare, *Henry V.*
- (b) Spenser, *Faerie Queene*, Book i, Cantos i-vi ; or Milton, *Samson Agonistes* and *Sonnets* (On his being arrived to the age of 23, When the assault was intended to the city, To Mr. H. Lawes on his airs, To the Lord General Fairfax, To the Lord General Cromwell, To Sir Henry Vane the younger, On the late massacre in Piemont, On his blindness, To Cyriac Skinner (the first), On his deceased wife).
- (c) Bacon, *Essays* (of Truth, of Death, of Revenge, of Adversity, of Simulation and Dissimulation, of Parents and Children, of Atheism, of Superstition, of Cunning, of Friendship, of the True Greatness of Kingdoms and Estates, of Plantations, of Youth and Age, of Gardens, of Studies) ; or Macaulay, *Essays on Addison and Clive*.

GEOGRAPHY, Europe.

Higher Papers

Alternative papers of a higher standard are set at the July examination in English Literature, English History, Mathematics, Greek, Latin, French, German, Mechanics and Physics, Chemistry, and *either* Botany or Zoology (see syllabus).

For the award of certain scholarships, the examination will also include an additional paper of three hours in the subject of Mechanical Drawing.

Matriculation Calendar and Syllabus

For full information as to the Matriculation examination, including reprint of examination papers, see the Calendar of the Joint Matriculation Board, to be obtained from any local bookseller, price 9d., or post free 1/-.

A Syllabus containing the complete regulations but without examination papers, is issued free, and is obtainable from "The Secretary, Joint Matriculation Board, 24, Dover Street, Manchester."

DEGREES IN ARTS

1. The degrees in Arts shall be :

Ordinance

Bachelor of Arts (B.A.)
Master of Arts (M.A.)
Doctor of Letters (Litt.D.).

DEGREE OF BACHELOR OF ARTS

2. The degree of Bachelor of Arts shall be conferred either as an Ordinary degree or as a degree with Honours.

3. All candidates for the degree of Bachelor of Arts shall be required to have passed the Matriculation examination, and thereafter to have pursued approved courses of study for not less than three academic years.

Candidates will not be admitted to the courses of Regulation. study for the degree of Bachelor of Arts unless they have
(1) passed the Matriculation examination in Latin, or
(2) given evidence of possessing a knowledge of Latin equivalent to that required at the Matriculation examination.

Ordinary Degree of Bachelor of Arts

4. The complete course of study for the Ordinary degree of Bachelor of Arts shall be divided into two parts, called respectively the Intermediate course and the Final course. Ordinance

5. Every candidate shall be required to pass two examinations, the Intermediate and the Final.

6. The Intermediate and Final examinations shall ordinarily be held in June of each year. There shall also be a supplementary Intermediate examination in September, at which those candidates only may present themselves who have obtained the permission of the Senate.

7. Candidates who have failed at an Intermediate examination in June, and have obtained permission to present themselves at the following supplementary examination, may be excused such part of the supplementary examination as the combined examination committee, on report from the separate examination committee concerned, may determine.

8. Candidates who have failed at a Final examination may present at the June examination of the following year those books and periods in which they have already been examined.

9. All candidates shall be required, before presenting themselves for the Intermediate or Final examination, to furnish to the Registrar certificates testifying that they have regularly attended the prescribed courses of study, and performed the class exercises to the satisfaction of the Professor or Lecturer, in each of the subjects which they offer at the examination. Some modification of the amount of attendance required may, in exceptional cases, be made by the Vice-Chancellor, on the recommendation of the head of the department concerned.

N.B.—In 1912 the Intermediate and Final examinations in June will begin on Monday, June 10th. The latest date of entry and of payment of fees will be FRIDAY, MARCH 1st.

Intermediate Course and Examination

10. Every candidate shall be required, after passing the Matriculation examination, to attend during one academic year approved courses of study in five subjects, and to pass in each of the subjects selected, viz. :

- i, ii. Two languages from the following list : Greek ; Latin ; French ; German ; one of which must be Greek or Latin.
- iii. *Either* (a) English Literature ; *or* (b) History (Ancient or Modern) ; *or* (c) Political Economy.
- iv. *Either* (a) Logic ; *or* (b) Mathematics ; *or* (c) one of the following Natural Sciences : Physics, Chemistry, Zoology, Botany, Geology.
- v. Any subject under i, ii, iii, iv not already selected, provided that no candidate may take (a) both Ancient and Modern History ; (b) two Natural Sciences.

The examination in each modern language shall include an oral examination.

Detailed subjects of study and of examination.

GREEK :

Prose composition. Translation at sight from Greek into English. Regulations.
Prescribed books : portions from two authors, one prose and one verse, to be studied in their literary and linguistic aspects.

Books prescribed for 1911-12

Demosthenes, *Philippic* i, *Olynthiac* i, *Conon*, *Callicles* ; Euripides, *Bacchæ*.

Books prescribed for 1912-13

Thucydides ii. cc 1-65 ; Homer, *Iliad* xxiv.

LATIN :

Prose composition. Translation at sight from Latin into English.
Prescribed books : portions from two authors, one prose and one verse, to be studied in their literary and linguistic aspects.

Books prescribed for 1911-12

Livy xxi, 1-57 ; Virgil, *Aeneid* i, ii.

Books prescribed for 1912-13

Livy v, 15-end ; Horace, *Odes* i, ii.

FRENCH :

Prose composition. Syntax of the French language. Translation at sight from French into English. Prescribed books : at least two texts, including both prose and verse, to be studied in their literary and linguistic aspects. Dictation, reading aloud and conversation in French.

Books prescribed for 1911-12

(a) Auguste Barbier, *Iambes* (*Prologue*, *La Curée*, *Le Lion*, *Quatre-Vingt-Treize*, *L'Émeute*, *La Popularité*, *L'Idole*) (Oxford Higher Series, Clarendon Press) ; (b) Mérimée, *Contes et Nouvelles* (Oxford Higher Series, Clarendon Press).

Books prescribed for 1912-13

Sully Prudhomme, *Les Écuries d'Augias* and *Impressions de la Guerre* (except *Le Renouveau*) (Paris, Alphonse Lemerre) ; Balzac, *Pierrette* (Oxford Higher Series).

GERMAN :

Prose composition. Syntax of the German language. Translation at sight from German into English. Prescribed books : two texts, one prose and one verse, to be studied in their literary and linguistic aspects. Dictation, reading aloud and conversation in German.

Books prescribed for 1911-12

Keller, *Kleider machen Leute* (ed. Lambert, Heath & Co.) ; Goethe, *Hermann and Dorothea*, Cantos i and ii (Pitt Press).

Books prescribed for 1912-13

Lessing, *Minna von Barnhelm* (Clarendon Press) ; Uhland, *Poems* (ed. Hewett, Macmillan) the following selection : *Dante*, *Bertran de Born*, *Schwäbische Kunde*, *Roland Schildträger*, *Tailfefer*, *Das Glück von Edenhall*, *Graf Eberhard der Rauschebart*, *Des Sängers Fluch*.

ENGLISH LITERATURE :

A period of English Literature. Books prescribed for special study.

Period prescribed for 1911-12
1786-1830.

Books prescribed for 1911-12

Coleridge, *Ancient Mariner*, Odes on *France* and *Dejection*; Wordsworth, *Tintern* poem and *Story of Margaret* (*Excursion*, book i); Keats, *Hyperion*; *Golden Treasury*, book iv; Burke, *Speech on American Taxation*; Scott, *Guy Mannering*. Also Chaucer, *Prologue to Canterbury Tales*; Shakespeare, *Romeo and Juliet*; Milton, *Comus*; Dryden, *McFlecknoe*.

Period prescribed for 1912-13
1558-1603.

Books prescribed for 1912-13

Spenser, *Faerie Queene*, Book i; Marlowe, *Faustus*; Sidney, *Apology for Poetry*; Shakespeare, *Macbeth*, *Midsummer Night's Dream*; Bacon, *Essays on Truth, Death, Adversity, Revenge, Atheism, Superstition, Friendship, Greatness of Kingdoms and Estates, Innovations*; *Golden Treasury*, book i. Also Chaucer, *Prologue to Canterbury Tales*; Pope, *Epistle to Arbuthnot*; Keats, *Hyperion*.

ANCIENT HISTORY :

Introduction to Ancient History, with special reference to selected periods of Greek and Roman History.

Special Subjects for 1911-12 and 1912-13

Plutarch's *Lives of Lysurgus, Solon, Themistocles, Pericles, Fabius, Maximus, Aemilius*.

MODERN HISTORY :

A selected period of Modern History.

Period prescribed for 1911-12 and 1912-13
Modern European History from 1763.

POLITICAL ECONOMY :

The physical geography of industry and trade. The occupations and earnings of the chief classes of the community.

LOGIC :

The elements of Deductive and Inductive Logic.

MATHEMATICS :

Trigonometry to the solution of triangles. The first principles of Analytical Geometry and the elements of the Differential Calculus, as applied to the tracing of graphs and the determination of maxima and minima ordinates. The Algebra required for the above subjects.

PHYSICS :

The properties of matter. The chief phenomena of Sound, Heat, Light, Electricity and Magnetism, treated in an elementary manner. Practical Physics.

CHEMISTRY :

The general principles of Inorganic Chemistry and their application. The elements of Organic Chemistry. Practical Chemistry.

ZOOLOGY :

The structure and life-history of animals as exemplified by a progressive series of selected types. Outlines of embryology. Practical Zoology.

BOTANY :

The structure and mode of life of a flowering plant. The structure and physiology of a flowering plant. Evolution of plants as shown by representatives of the chief groups of plants. Elements of the classification of flowering plants. Practical Botany.

GEOLOGY :

General Physical and Stratigraphical Geology, and Geology in relation to the study of Geography. Practical Geology.

Final Course and Examination

11. Every candidate shall be required to attend approved Ordinance
courses of study in three principal subjects and one subsidiary subject, and to pass in each of the subjects selected. The same subject may not be taken both as a principal and as a subsidiary subject. An essay paper shall be set for all candidates at the Final examination.

12. The course of study in each principal subject shall extend over two academic years, and the course of study in the subsidiary subject shall extend over one academic year.

13. The principal subjects shall be selected from the following list: Greek, Latin, French, German, English Language and Literature, History, Philosophy, Economics, Education, Pure and Applied Mathematics. Every candidate shall be required to take as a principal subject one of the following: Greek, Latin, French, German. The examination in each modern language shall include an oral examination.

14. The subsidiary subjects shall be selected from the following list: English Literature, History, Philosophy, Economics, Education, Pure Mathematics, Applied Mathematics. The course of study in a subsidiary subject may be taken either in the first or second year of the Final course.

15. Candidates who have attended, during the first year of their Final course, the prescribed course of study in a subsidiary subject, may present themselves in June of that year for examination in such subsidiary subject. Part of the examination in Education, to be defined by Regulation, may also be taken at the end of the first year of the Final course.

Regulations. *Detailed subjects of study and of examination.*

1. Principal Subjects, studied for Two Years.

GREEK :

Prose composition. Translation at sight from Greek into English.

The study of portions from various authors, three of which (two prose and one verse or one prose and two verse) will be prescribed as subjects of the Final examination.

Books prescribed for 1911-12

Herodotus ii ; Thucydides vii ; Aristophanes, *Frogs*.

Books prescribed for 1912-13

Herodotus iii ; Aeschylus, *Prometheus Vinculus* ; Aristophanes, *Clouds*.

LATIN :

Prose composition. Translation at sight from Latin into English.

The study of portions from various authors, three of which (two prose and one verse or one prose and two verse) will be prescribed as subjects of the Final examination.

Books prescribed for 1911-12

Tacitus, *Histories* iii ; Virgil, *Aeneid* iv, vi ; Lucretius iii, 1-93, 830-end, v, 783-end.

Books prescribed for 1912-13

Cicero, *Second Philippic* ; Tacitus, *Agricola* ; Virgil, *Georgics* iv ; *Aeneid* ii.

FRENCH :

The study of various texts, three of which (two prose and one verse, or one prose and two verse) will be prescribed as subjects of the Final examination. Translation at sight from French into English. Principles of Phonetics and Principles of Historical Grammar. Composition and the study of style. A period or periods of French Literature. Dictation, reading aloud and conversation in French.

Books prescribed for 1911-12

Corneille, *Polyeucte* ; Racine, *Athalie* ; Victor Hugo, *Notre Dame*.

Periods prescribed for 1911-12

(a) French Classical Tragedy to the end of the 17th Century.

(b) The French Novel from 1820 to 1850.

Books prescribed for 1912-13

- (a) Corneille, *Polyeucte* ; Racine, *Athalie* ;
- (b) Rousseau, *Extraits* (ed. Brunel, Hachette et Cie).

Periods prescribed for 1912-13

- (a) French Classical Tragedy to the end of the 17th Century.
- (b) Rousseau's Life and Works.

GERMAN :

The study of various texts, three of which (two prose and one verse, or one prose and two verse) will be prescribed as subjects of the Final examination. Translation at sight from German into English. Principles of Phonetics and Principles of Historical Grammar. Composition and the study of style. A period or periods of German Literature. Dictation, reading aloud and conversation in German.

Books prescribed for 1911-12

Lessing, *Nathan der Weise* ; Schiller, *Maria Stuart* ; Hans Sachs, *Selections*, in Kinzel's *Denkmäler der älteren deutschen Literatur*, III, i, (Halle).

Periods prescribed for 1911-12

Lessing's Life and Works ; Schiller's Life and Works.

Books prescribed for 1912-13

Schiller, *Maria Stuart* ; Hans Sachs, *Selections*, in Kinzel's *Denkmäler der älteren deutschen Literatur*, III, i, (Halle) ; Kleist, *Prinz Friedrich von Homburg* (ed. Heuwes, Paderborn).

Periods prescribed for 1912-13

Schiller's Life and Works ; The Romantic Period.

ENGLISH LANGUAGE AND LITERATURE :

English Language

This course is pursued, in the last year of their studies for the B.A. Degree, by those who take English as a principal subject. It consists of a study of Old and Middle English (Language and Literature) with prescribed books (prose and verse) and unseen translation.

Books prescribed for 1911-12

Cook, *First Book in Old English* (Grammar and Prose Extracts) ; Sweet, *Anglo-Saxon Reader*, Extracts iv, viii, ix, xxii ; Chaucer, *Man of Law's Tale* ; Sweet, *Middle English Primer* (*Ancren Riwle*).

Books prescribed for 1912-13

Cook, *First Book in Old English* (Grammar and Extracts i-xv) ; Sweet, *Anglo-Saxon Reader*, Extracts ii, v, x, xxvi ; Chaucer, *Clerk's Tale* ; Morris and Skeat, *Specimens of Early English*, ii, extracts x, xx.

Candidates may, with the consent of the Board of the Faculty of Arts, be permitted to substitute a further study of English Literature for the above course in English Language.

English Literature

In each year the study of a selected period of English Literature, with a knowledge of prescribed books and questions of literary history and criticism arising from them.

Period prescribed for 1911-12
1786-1850.

Books prescribed for 1911-12

(a) *Lyrical Ballads* (1798); Wordsworth, *Story of Margaret* (*Excursion*, book i), *Michael*; Shelley, *Adonais*; Byron, *Manfred*; Keats, *Hyperion*, *Odes*; Burke, *Reflections on the French Revolution*; Carlyle, *Lectures on Heroes*, i, iii, vi; Browning, *Rabbi Ben Ezra*, *Abt Vogler*, *A Grammarian's Funeral*, *Andrea del Sarto*, *The Last Ride Together*, *Too Late*, *The Worst of it*. Also Chaucer, *Knight's Tale*; Shakespeare, *Macbeth*; Milton, *Samson Agonistes*; Pope, *Epistle to Arbuthnot*.

(b) Outlines of English Literature.

Period prescribed for 1912-13
1558-1630.

Books prescribed for 1912-13

(a) Spenser, *Shepherd's Calendar*; Marlowe, *Faustus*; Sidney, *Apology for Poetry*; Bacon, *Essays* (same selection as for Intermediate Course); Shakespeare, *Lear*, *Twelfth Night*; Jonson, *Volpone*; Webster, *Duchess of Malfi*. Also Chaucer, *Nonnes Prestes Tale*; Milton, *Samson Agonistes*; Dryden, *Absalom and Achitophel*, part I; *Golden Treasury*, book IV.

(b) Outlines of English Literature.

HISTORY:

First Year Course: A general sketch of European History from the third century A.D., or a special period.

Second Year Course: Two prescribed periods of History, studied in connection with some of the original authorities and selected from the following: Greek, Roman, English, Constitutional, European, Economic History.

Periods prescribed for 1911-12

First Year Course: Either Outlines of European History, or the History of the English Constitution since 1485.

Second Year Course: Greek History, 445-371 B.C.; Roman History, 31 B.C.-180 A.D.; English History, 1625-1702; European History, The Thirteenth Century.

Periods prescribed for 1912-13.

First Year Course: as for 1911-12.

Second Year Course : Greek History, 600-445 B.C. ; Roman History, 510-134 B.C. ; English History, 1760-1815 ; European History, The Twelfth Century.

PHILOSOPHY :

Two of the following :

History of Ancient Philosophy : general outlines of Greek Philosophy, with the special study of selected works.

History of Modern Philosophy : general outlines of Modern Philosophy from Bacon to Kant, with the special study of selected works.

Psychology : systematic Psychology, with more detailed study of some part of the subject.

Ethics : the general principles of Ethics, with the special study of selected ethical systems.

Theory of Knowledge : general outlines with the special study of selected works.

ECONOMICS :

First Year Course : General principles of Economics, together with the outlines of recent economic history.

Second Year Course : More advanced treatment of economic principles, with description of industrial and commercial organisation.

EDUCATION :

The course extends over three years, and is divided into two parts, Part I., Theory of Education, extending over two years, with an examination at the end of the second year ; and Part II., History of Education, extending over one year. Candidates presenting themselves for examination in Part II. must present their other principal subjects at the same examination. Candidates ordinarily attend the courses of instruction in Part I. during the year of their attendance on the Intermediate Course for the degree, and the first year of their attendance on the Final Course.

Part I. Theory of Education.

Functions and agents of Education. The ethical, logical, and psychological bases of mental and moral Education. The general principles of teaching, with application to the primary school curriculum. The general principles of discipline, with applications to school life. School organisation. The general principles of physical training with reference to the work of the school ; school hygiene.

Part II. History of Education.

General outline of the history of educational thought in Europe from the Renaissance to the present time, with special reference to England and special emphasis on the Nineteenth Century. A prescribed book. The book prescribed for 1911-12 is Plato, *Republic*, ii, iii, iv.

MATHEMATICS :

Pure Mathematics :

Analytical Geometry up to but not including the general equation of the second degree. The more elementary portions of the Differential and Integral Calculus.

Applied Mathematics :

Statics and Dynamics as far as they can be taken without the Integral Calculus. Hydrostatics.

*II. Subsidiary Subjects, studied for One Year.***ENGLISH LITERATURE :**

A selected period of English Literature, with a knowledge of prescribed books and questions of literary history and criticism arising thereon.

Periods and books prescribed for 1911-12 and 1912-13

The same as for English Literature as a principal subject.

HISTORY :

General sketch of European History since the Roman Empire.

PHILOSOPHY :

One of the subjects prescribed for Philosophy taken as a principal subject.

ECONOMICS :

General principles of Economics, together with the outlines of recent economic history.

EDUCATION :

Part I. of the course prescribed for Education taken as a principal subject.

PURE MATHEMATICS :

Analytical Geometry up to but not including the general equation of the second degree. The more elementary portions of the Differential and Integral Calculus.

APPLIED MATHEMATICS :

Statics and Dynamics as far as they can be taken without the Integral Calculus. Hydrostatics.

Degree of Bachelor of Arts with Honours**Ordinance.**

1. Candidates for the degree of Bachelor of Arts with Honours shall, except as hereinafter stated, be required to furnish certificates of having attended courses of instruction approved by the University and extending over not less than three academic years in one of the Honours Schools of the University hereafter enumerated.

2. Every candidate for the degree of Bachelor of Arts with Honours shall be required to present himself for

examination at the end of the third or fourth academic year from the time when he has entered upon one of the courses of instruction approved by the University for such degree, unless he shall present a medical certificate of illness satisfactory to the Senate. This examination shall ordinarily be held in June of each year.

3. Candidates for the degree of Bachelor of Arts with Honours may present themselves for examination in any of the following Honours Schools on furnishing certificates of having pursued, to the satisfaction of the Senate, the courses required for such Honours Schools in the University, viz. :

Classics
English Language and Literature
Modern Languages and Literatures
History
Philosophy
Economic and Political Science

4. Candidates who have passed the Final examination for an Ordinary degree of Bachelor of Arts may, with the sanction of the Senate and on furnishing certificates of having attended, during the academic year following such Final examination for the Ordinary degree, the third year's, or, during the two academical years following such Final examination, the second and third years' course approved by the University for any one of its Honours Schools, present themselves for examination for the degree of Bachelor of Arts with Honours in such School.

5. No candidate for a degree of Bachelor of Arts with Honours shall be admitted more than once to examination in the same Honours School ; but students who have passed the Final examination in any of the Honours Schools may be admitted to the Final examination in any other Honours School after the expiration of one or two years, on presenting certificates of having attended, during the period in question, courses approved by the University.

Provided that in the said other Honours School selected, candidates shall not present themselves for the Final examination more than two academic years after the Final examination in Honours already passed by them, and also that no candidate be admitted to examination in any

Honours School after a longer period than five years has elapsed since the date of his first entrance upon a prescribed course of study for an Honours School.

6. Names of candidates who have passed the examination for the degree of Bachelor of Arts with Honours shall be published in such form as to distinguish the Honours School in which severally they may have passed; the names of those who have passed in Honours being drawn up in three classes, and each class being arranged in alphabetical order.

7. Candidates who have not acquitted themselves so as to deserve Honours may be excused the whole or such part of the examinations for the Ordinary degree as the combined examination committee may determine.

N.B.—In 1912, the examinations in the Honours Schools will begin on Monday, June 10th. The latest date of entry and of payment of fees will be FRIDAY, MARCH 1st.

Classics

Regulations. Candidates for the degree of Bachelor of Arts with Honours in Classics shall be required to pursue courses of study and to submit themselves for examination in the following subjects:

Translation from prescribed Greek and Latin books.

Translation at sight from Greek and Latin authors.

Greek and Latin Composition.

Greek and Latin Literature.

Two of the following :

Ancient History

Ancient Philosophy

A special subject connected with Greek or Latin literature.

Attendance in the subjects of the school shall be required as follows: Not less than twelve hours a week in the first and second years, and ten hours a week in the third year. Attendance on the full course for the Intermediate examination for the Ordinary degree of Bachelor of Arts may be accepted as the required attendance for the first year of the Honours course, provided that the subjects chosen by the candidate are substantially and to the satisfaction of the Board of the Faculty of Arts those required for the first year's course of the Honours School of Classics.

Examination

Greek Prose Composition, one paper.

Latin Prose Composition, one paper.

Greek Unprepared Translation, one paper.

Latin Unprepared Translation, one paper.

Translation from prescribed Greek books, with questions on grammar and subject matter, two papers.

Translation from prescribed Latin books, with questions on grammar and subject matter, two papers.

Critical and Essay paper.

Two of the following :

Ancient History, one paper.

Ancient Philosophy, one paper.

Special subject in Greek or Latin Literature, one paper.

Greek and Latin Verse Composition, one paper (optional).

Books prescribed for 1911-12

GREEK: Homer, *Iliad* xxii, xxiii, xxiv, *Odyssey* ix, x, xi, xii; Pindar, *Olympian Odes*; Aeschylus, *Persae*, **Agamemnon*; Sophocles, **Antigone*; Euripides, *Bacchae*; Aristophanes, *Acharnians*, **Frogs*; Theocritus i-xv; Herodotus ii; Thucydides ii, *vii; Plato, *Republic* i, ii, iii, iv; Demosthenes, **De Corona*; Aristotle, *Rhetoric*, book *ii.

Books prescribed for 1912-13

GREEK: Homer, *Iliad* i, vi, xviii, *Odyssey* v, vi, ix, xi, xiii; Pindar, *Olympian Odes*; Selections from the Greek Lyric Poets; Aeschylus, *Prometheus Vinculus*, **Agamemnon*; Sophocles, **Ajax*; Euripides, *Hercules Furens*; Aristophanes, *Clouds*, **Frogs*; Theocritus i-xv; Herodotus iii; Thucydides ii, *vii; Plato, *Republic* i, ii, iii; Demosthenes, **De Corona*, *Conon*, *Callicles*; Aristotle, *Rhetoric*, book *iii.

Books prescribed for 1911-12

LATIN: Plautus, *Captivi* and *Trinummus*; Catullus (Simpson's selection); Lucretius iii, *v; Virgil, *Georgics* i, ii; *Aeneid* i, ii, iii, *iv, *vi; Horace, *Odes* *i, *ii, iii, iv, *Epistles* i; Juvenal i, *iii, *iv, v, *x, xiv; Cicero, *pro Roscio Amerino*, **Second Philippic*, *Letters* (Tyrrell's Selection), 1-32 (omitting 6, 11, 12, 19, 21, 24, 25), 38, 40, 42, 60, 61, 67, 73, 78; Livy xxi, xxii; Tacitus, *Histories*, i-iii*, *Agricola*.

Books prescribed for 1912-13

LATIN: Plautus, *Trinummus*; Catullus (Simpson's selection); Lucretius iii, *v; Virgil, *Georgics* i, ii; *Aeneid* i, ii, *iv, *vi; Horace, *Odes*, *i, *ii, iii, iv, *Epistles* i; *Satires* i, 5, 6, 9, ii, 5, 6; Cicero, *in Catilinam* i-iv, **Second Philippic*, *Letters* (Tyrrell's selection), 1-32 (omitting 6, 11, 12, 19, 21, 24, 25), 38, 40, 42, 60, 61, 67, 73, 78; Sallust, *Catilina*; Livy xxi, xxii; Tacitus, *Histories* i-*iii, *Agricola*.

N.B.—The books marked with an asterisk are to be studied with special care in all their bearings, textual, grammatical, literary, historical, etc.

English Language and Literature

In this School there shall be alternative schemes of study : Scheme A, in which special attention will be paid to Literature; and Scheme B, in which special attention will be paid to Language. Under both schemes a competent knowledge of one classical and of at least one modern language shall be required for the attainment of high Honours.

Honours students, under either scheme, will, as a rule, be expected to take the Intermediate B.A. examination (see following paragraphs, including those in small print on the next page) at the end of their first year.

The course of study for the first academic year, shall embrace the following four subjects, as for the Intermediate examination for the Ordinary Degree of B.A. : (i) Latin or Greek, (ii) French or German, (iii) English Literature, (iv) Modern History, and in addition (v) English Language and Early English Literature.

(Candidates who have passed the above Intermediate examination, but are unable to continue their Honours course, may apply to the Senate for permission to proceed to the Final course and examination for the Ordinary degree of B.A.)

Candidates who, instead of the above-mentioned examination, have passed the Intermediate examination for the Ordinary B.A. degree (see p. 156), may be permitted to enter on an Honours Course in English at the beginning of their second year, on condition that (i) they take Scheme A; (ii) that, before entering on their second year course, they satisfy the head of the department that they possess a sufficient knowledge of the English Language to enable them to profit by the subsequent courses in that subject.

Scheme A

Candidates shall be required to attend the following courses in the subjects of the School : in the first year, three hours a week in English Literature, and three hours a week in English Language (see below); in the second year, not less than six hours a week in English Literature and Language; in the third year, not less than five hours a week in English Literature and Language.

Candidates shall be also required to attend, during the first and second years, approved courses in subjects other than English Language and Literature; such courses shall include an approved course in Latin or Greek, and shall average not less than five hours a week in the first year and not less than three hours a week in the second year; and during the third year, a course of two hours a week in some language other than English.

The first year courses in English Language, including the History of the Language, and Early English Literature will be as follows:—

History of the English Language. Old and Middle English prose; books and passages selected from works before the close of the Fourteenth Century.

Books prescribed in Old and Middle English for 1911-12

Cook, *First Book in Old English*, grammar and extracts i-xv; Sweet, *Anglo-Saxon Reader*, extracts iv, viii, ix; Morris and Skeat, *Specimens of Early English*, vol. I, extracts vi, xiii; Chaucer, *Prologue to Canterbury Tales*.

Books prescribed in Old and Middle English for 1912-13

Cook, *First Book in Old English*: grammar and extracts i-xv; Sweet, *Anglo-Saxon Reader*, extracts ii, v, x; Morris and Skeat, *Specimens of Early English*, vol. II, extracts ix, x; Chaucer, *Prologue to Canterbury Tales*.

Final Examination

Essay, one paper.

Translation of unseen passages of Old and Middle English, with literary and linguistic questions, one paper.

Prescribed books in Old and Middle English, with literary and linguistic questions, one paper.

Outlines of English Literature, one paper.

Special period of English Literature, with prescribed books, two papers.

An English author, or selected subject from English Literature, one paper.

History of Criticism, one paper.

Oral examination.

In addition, candidates shall be required to present a dissertation on a subject approved by the Board of the Faculty of Arts.

Period and Books prescribed for 1911-12

- (a) *Books prescribed in Old and Middle English for 1911-12:*
Beowulf, either vv. 1-1887 or 1888 to end; Morris and Skeat, *Specimens of Early English*, vol. I, extract xix, vol. II, extracts ii, ix.

- (b) Special Period : 1700-1785.
- (c) Books in Special Period : Swift, *Conduct of the Allies*; Addison, *Golden Treasury Selections*; Pope, *Eloisa to Abelard*, *Epistles to Arbuthnot and Augustus*, *Essay on Man*; Johnson, *Lives of Cowley, Dryden, Pope, Swift and Gray*; Gray, *Poems*, and *Letters* (ed. Tovey); Collins, *Odes*; Goldsmith, *Poems* and *Vicar of Wakefield*; Fielding, *Joseph Andrews*; Defoe, *Colonel Jack*; Sterne, *Sentimental Journey*; Burns (Clarendon Press Selections); Blake, *Poems* (ed. Sampson); Cowper, *Task*, and *Letters* (Golden Treasury Selection); Horace Walpole, *Letters 1757-1762*; Burke, *Conciliation with America* and *Reflections on the French Revolution*.
- (d) Special Author : Shakespeare, with a special study of *Hamlet* and *Henry VIII*.

HISTORY OF CRITICISM :

Special Books suggested for study : Aristotle, *Poetics*; Horace, *Ars Poetica*; Dante, *De Vulgari Eloquentia*; du Bellay, *Défense et Illustration de la Langue française*; Sidney, *Defence of Poesy*; Ben Jonson, *Discoveries*; Dryden, *Essay on Dramatic Poetry*; Boileau, *L'Art poétique*; Lessing, *Laokoon and Hamburgische Dramaturgie*; Wordsworth, Prefaces and Appendices to *Lyrical Ballads*; Shelley, *Defence of Poetry*; Coleridge, *Biographia Literaria*; Charles Lamb, *Literary Criticisms*; Hazlitt, *Shakspeare's Characters*; Victor Hugo, *Préface de Cromwell*; Arnold, *Essays in Criticism*, Second Series.

Period and Books prescribed for 1912-13

- (a) Books prescribed in Old and Middle English for 1912-13 : *Beowulf*, either II, 1-1888 or II, 1888-end; William of Palerne (Early English Text Society).
- (b) Special Period : 1785-1850.
- (c) Books in Special Period : Wordsworth, *Michael*, *Prelude*, books I and II; Wordsworth and Coleridge, *Lyrical Ballads*; Shelley, *Adonais*, *Prometheus Unbound*; Keats, *Hyperion*, *Eve of St. Agnes*, *Lamia*; Blake, *Poems* (ed. Sampson); Burke, *Reflections on the French Revolution*; Carlyle, *Lectures on Heroes*; Scott, *Guy Mannering*, *Bride of Lammermoor*; Miss Austen, *Pride and Prejudice*, *Emma*; Tennyson, *Holy Grail*, *Passing of Arthur*, *Maud*; Browning, *Men and Women*; Swinburne, *Poems and Ballads* (First Series), *Atalanta in Calydon*; Morris, *Earthly Paradise* (Prologue: and Tales from *March to June*); George Eliot, *The Mill on the Floss*; Meredith, *The Ordeal of Richard Feverel*; Golden Treasury, Book IV.
- (d) Special Author : as for 1911-12.

HISTORY OF CRITICISM : as for 1911-12.

Scheme B

Candidates shall be required to attend the following courses in the subjects of the School: (i) during three academic years courses in English Language, including the History of the Language, Early English prose and verse, and Gothic, such courses amounting to not less than three hours a week for the first year and not less than four hours a week for the second and third years; (ii) during three academic years courses of three hours a week on periods of English Literature; (iii) during one academic year a course on the Outlines of English Literature.

Candidates shall be also required

(1) *either* (a) to attend approved courses in *two* of the following languages: Old Icelandic, Old High German, Old French; *or* (b) to present a dissertation in a subject approved by the Board of the Faculty of Arts;

(2) to attend for two years approved courses of two hours a week in History, English *or* European; for two years approved courses in French *or* German; and for a third year an approved course in the History of the French Language and Literature, *or* in the History of the German Language and Literature. They are further required to attend, during the first year, an approved course in Latin *or* Greek.

First year courses in English Language: as in Scheme A.

Final Examination

Essay, one paper.

Translation of unseen passages of Old and Middle English, with literary and linguistic questions, one paper.

Prescribed books in Old and Middle English, with literary and linguistic questions, one paper.

Outlines of English Literature, with prescribed books, two papers.

Grammar of Old and Middle English dialects, with illustrative passages for translation or comment, two papers.

History of English, with reference to general principles of linguistic development, one paper.

Gothic, one paper.

Either two of the following : Old Icelandic, one paper ; Old High German, one paper ; Old French, one paper ; *or* a dissertation on a subject approved by the Board of the Faculty of Arts.

Oral examination.

Special Period and Books prescribed for 1911-12 : as in Scheme A for 1911-12.

Special Period and Books prescribed for 1912-13 : as in Scheme A for 1912-13.

Outlines of English Literature for 1911-12

A general knowledge of English Literature from the earliest times, together with a special study of the following books :

Shakespeare, *Richard II*, *King Lear* ; Bacon, *Advancement of Learning* ; Marlowe, *Faustus* ; Jonson, *Every Man in his Humour* ; Spenser, *Shepherd's Calender* (ed. Herford) ; Milton, *Samson Agonistes*, *Areopagitica* ; Dryden, *Religio Laici*, *Essay of Dramatic Poetry* ; Pope, *Moral Essays* ; Burke, *Reflections on the French Revolution* ; Coleridge, *Ancient Mariner*, *Christabel*, *Ode on Dejection* ; Shelley, *Prometheus Unbound* ; Tennyson, *In Memoriam* ; Browning, *Selections* (Smith, Elder, 1/-), Carlyle, *Sartor Resartus* ; Palgrave, *Golden Treasury*.

Modern Languages

The languages studied in the School shall be French, German, English.

Candidates for the degree of Bachelor of Arts with Honours in the School of Modern Languages shall be required to pursue courses of study and to submit themselves for examination in any two of the above subjects.

Candidates shall also be required to study auxiliary subjects, of which Latin shall ordinarily form part. Exemptions may be granted to specially qualified candidates.

The names of candidates, who, being placed in the First or Second Class, have shown conspicuous merit shall be distinguished in the class list by some mark to indicate the subject or subjects in which they have shown such merit.

I. FRENCH AND GERMAN :

The course of study and subjects of examination in French or German shall be : Prescribed texts of before 1500, studied from a literary and linguistic standpoint ; prescribed texts of after 1500, studied in the same

way ; unprepared translation ; literature (outlines and special periods) ; the history of the language (including phonetics, versification, &c.) ; composition.

Candidates taking French or German shall be required to attend for at least two years classes in composition, translation and phonetics ; for one hour a week for each of three years a class in Literature ; for three hours a week for two years, and at least two hours a week for one of the three years classes on the history of the language, and the linguistic and literary study of texts prior to 1500 ; for one hour a week for two terms in one year a class in French or German Institutions.

II. ENGLISH :

The courses of study and subjects of examination in English are as follows :

Language. During the first year, a course of not less than three hours a week in the English Language. During the second and third years, a course, or courses, in the English Language of not less than two hours a week ; and, in addition, during one of these years, a course of not less than one hour a week in Gothic, or in Anglo-Norman (if French be not taken as a principal subject).

Literature. During each year, a course in English Literature of not less than three hours a week, together with an additional course of one hour a week, during one of these years.

Examination

The examination in each subject of the School shall consist of an oral examination and of the following papers :

FRENCH OR GERMAN :

Composition and Essay, one paper.

Unprepared Translation, one paper.

Prescribed Texts of before 1500, with literary and linguistic questions, one paper.

Prescribed Texts of after 1500, with literary and linguistic questions, one paper.

Literature, one paper.

Grammar : History of the language and versification, one paper.

ENGLISH :

Translation of unseen passages of English, and of passages from Gothic and Old French, with questions suggested by the passages, two papers.

Translation from prescribed English books, with literary and linguistic questions, one paper.

A period of literature, one paper.

Outlines of English literature, one paper.

History of the language and historical grammar, one paper.

I. FRENCH :

Books and Periods prescribed for 1911-12

Books before 1500 : E. Koschwitz, *Les plus Anciens Monuments de la Langue Française* (Serments, Jonas, La Passion); Chrétien de Troyes, *Le Chevalier au Lion*, vv. 1406-2165; Guillaume de Berneville, *Vie de St. Gilles*, 1-1318; Bartsch, *Chrestomathie* (ed. 1908), pieces 78, 79, 81-84, 87, 88, 95-98.

Books after 1500 : Darmesteter and Hatzfeld, *Morceaux Choisis des Ecrivains du 16^e siècle*; Descartes, *Discours de la Méthode*; Corneille, *Le Cid*, *Polyeucte*; Racine, *Athalie*; Molière, *Le Misanthrope*, *Les Femmes Savantes*; Rousseau, *Lettre sur les Spectacles*; Victor Hugo, *Notre Dame*; Lamartine, *Les Premières Méditations*.

Periods of Literature : (a) French Classical Drama to the end of the XVIIth Century; (b) The French Novel from 1820 to 1850.

Books and Periods prescribed for 1912-13

Books before 1500 : E. Koschwitz, *Les plus Anciens Monuments de la Langue Française* (Serments, St. Eulalie, St. Léger); Chrétien de Troyes, *Le Chevalier au Lion*, vv. 1406-2165; Guillaume de Berneville, *Vie de St. Gilles*, 1-1318; Bartsch, *Chrestomathie* (ed. 1908) pieces 78, 79, 81-84, 87, 88, 95-98.

Books after 1500 : Darmesteter and Hatzfeld, *Morceaux Choisis des Ecrivains du 16^e siècle*; Descartes, *Discours de la Méthode*; Corneille, *Le Cid*, *Polyeucte*; Racine, *Athalie*; Molière, *Le Misanthrope*, *Les Femmes Savantes*; Rousseau, *Extraits*; Victor Hugo, *Notre Dame*; Lamartine, *Les Premières Méditations*.

Periods of Literature; (a) French Classical Tragedy to the end of the XVIIth Century; (b) Rousseau's Life and Works; (c) The French Novel from 1820 to 1850.

II. GERMAN :

Books and Periods prescribed for 1911-12

Books before 1500 : Braune, *Althochdeutsches Lesebuch* ii, iv, vi-viii, xii, xiv, xv, xvi (1-8), xvii, xxiii (1-5), xxiv, xxviii-xxxi, xxxii (1-4), xxxiv. xxxvi, xli; Gudrun ix-xxi; Bartsch, *Liederdichter*, xxi; Hartman von Aue, *Der Arme Heinrich* (ed. Robertson, Sonnenschein).

Books after 1500 : Hans Sachs, *Selections* (ed. Kinzel, Halle) in *Denkmäler der älteren deutschen Literatur* III, i; Goethe, *Faust*, part i, *Goetz von Berlichingen*; Schiller, *Maria Stuart*, *Gedichte der dritten Periode* (in Mayr, *Schillers Gedichte*, Wien); Lessing, *Nathan der Weise*, *Hamburgische Dramaturgie* (ed. Lyon, Velhagen and Klasing); Gerhart Hauptmann, *die versunkene Glocke*; Kleist, *Prinz Friedrich von Homburg*, ed. Heuwes (Paderborn, Schöningh).

Period of Literature : Die zweite klassische Periode.

Books and Periods prescribed for 1912-13

Books before 1500 : as for 1911-12.

Books after 1500 : as for 1911-12, substituting Goethe, *Tarquato Tasso* for Goethe, *Goetz von Berlichingen*.

Period of Literature : as for 1911-12.

III. ENGLISH :

(a) Language

Books prescribed for 1911-12

OLD AND MIDDLE ENGLISH : as for English Honours, Scheme A, 1911-12.

Books prescribed for 1912-13

OLD AND MIDDLE ENGLISH : as for English Honours, Scheme A, 1912-13.

(b) Literature.

Books and Periods prescribed for 1911-12

(a) Outlines of English Literature.

(b) Special period and books as for English Honours, 1911-12.

Books and Periods prescribed for 1912-13

(a) Outlines of English Literature.

(b) Special period and books as for English Honours, 1912-13.

History

Candidates for the degree of Bachelor of Arts with Honours in History shall be required to pursue courses of study as follows :

The course of study for the first academic year shall embrace the following subjects, as for the Intermediate examination for the Ordinary degree of B.A. : (1) Latin or Greek ; (2) French or German ; (3) Logic or English Literature, or a third Language ; (4) History ; and in addition (5) a second historical subject. An examination will be held in these subjects at the end of the first year, and must be passed before proceeding to further study.

(Candidates who have passed the above Intermediate examination, but are unable to continue their Honours course, may apply to the Senate for permission to proceed to the Final course and examination for the Ordinary degree of B.A.)

Attendance on the full course for the Intermediate examination for the Ordinary degree of Bachelor of Arts may also be accepted by the Senate as the required attendance for the first year of the Honours course.

The course of study for the second academic year in the subject of the School must include ten hours a week, and for the third academic year, eight hours a week.

Examination

Essay, one paper.

English (including Constitutional) History, two papers.

Outlines of European History, two papers.

Special period, studied in connection with the original authorities, two papers.

Economics and Economic History, one paper.

Political Theory, one paper.

In addition, candidates shall be required to present a dissertation on some subject approved by the Board of the Faculty of Arts.

Candidates shall also be required to show in the examination some knowledge of at least one foreign language (ancient or modern).

Special periods for 1911-12 and 1912-13

- (1) Roman History, 31 B.C.-37 A.D. ; (2) European History, 1789-1804 ; (3) The Life and Times of Saint Francis of Assisi ; (4) The Age of Elizabeth (1558-1588).

Philosophy

Candidates for the degree of Bachelor of Arts with Honours in Philosophy shall be required to pursue the following courses of study, and to submit themselves to the following examinations :

The course of study for the first year is the same as that for the Intermediate examination for the Ordinary degree, provided that Logic must be taken as the fourth

subject, and that a second philosophical subject may be taken as the fifth subject. Candidates must pass an examination on the first year's course before proceeding to further study.

(Candidates who have taken the second philosophical subject in the above examination, and have passed the examination, but who are unable to continue their Honours course, may apply to the Senate for permission to proceed to the Final course and examination for the Ordinary degree of B.A.)

During the second and third years candidates shall be required to attend approved courses in Philosophy of not less than five hours a week in each year.

They shall also be required to attend, during the second and third years, approved courses of lectures on other subjects, the number of lectures amounting to not less than two hours a week in each year.

Examination

Essay, one paper.

General Questions, one paper.

Logic, Deductive and Inductive, one paper.

Psychology, one paper.

Ethics, one paper.

Advanced Psychology *or* Moral and Political Philosophy, one paper.

Either History of Ancient Philosophy, one paper, and two papers on *one* of the following :

Descartes, Malebranche, Spinoza.

Spinoza and Leibniz.

English Philosophy from Locke to Hume, with reference to Bacon and Hobbes and to Reid and the Scottish Philosophy.

Kant.

Or, History of Modern Philosophy, one paper, and two papers on *one* of the following :

Greek Philosophy before Socrates.

Socrates and Plato.

Aristotle.

Post-Aristotelian Philosophy.

Economic and Political Science.

Candidates for the degree of Bachelor of Arts with Honours in Economic and Political Science shall be required to pursue courses of study, and to submit themselves to examination, as follows:—

The course of study for the first academic year shall include the following subjects, as for the Intermediate examination for the Ordinary degree of B.A., (1) Latin or Greek; (2) French or German; (3) Modern History or English Literature, or, if not taken under (2), French or German; (4) Political Economy; and, in addition, (5) Economic Geography. An examination will be held in these subjects at the end of the first year, and must be passed before proceeding to further study.

(Candidates who have passed the above Intermediate examination, but are unable to continue their Honours course, may apply to the Senate for permission to proceed to the Final Course and examination for the Ordinary degree of B.A.).

Attendance on the full course for the Intermediate examination for the degree of B.A. may also be accepted by the Senate as the required attendance for the first year of the Honours course.

During the second and third years candidates shall be required to attend approved courses in the subjects of the school of not less than five hours a week in each year.

They shall also be required to attend, during the second and third years, approved courses of lectures on other subjects, the number of lectures amounting to not less than two hours a week in each year.

Examination.

Essay, one paper.

Political Economy, two papers.

Social Economy, one paper.

Recent Industrial History of England, two papers.

Political Theory, one paper.

A special subject, studied in connection with original sources of information, two papers.

The special subject may be chosen by the candidate, subject to the approval of the Board of the Faculty of Arts.

DEGREE OF MASTER OF ARTS

I

1. The degree of Master of Arts may be conferred, on payment of the proper fee, upon registered Bachelors of Arts when of not less than one year's standing from the date of their graduation as Bachelors, subject to the conditions contained in the following paragraphs. Ordinance.

2. Bachelors of Arts who have graduated with Honours may proceed to the degree of Master of Arts on presenting a dissertation satisfactory to the Senate on a subject approved by the Board of the Faculty of Arts.¹

3. Bachelors of Arts who have obtained the Ordinary degree shall be required to pass an examination in a subject or group of subjects upon which instruction is given in the Faculty of Arts, and to present a dissertation satisfactory to the Senate on a subject approved by the Board of the Faculty of Arts, or, if they do not present a dissertation, to pass a more extended examination. In special cases it shall be in the power of the Senate, on the application of the candidate and on the special recommendation of the Board of the Faculty of Arts, to award the degree upon a dissertation only. Candidates wishing to apply for such remission must make application to the Board of the Faculty of Arts not later than the end of the October preceding the examination. Regulations shall determine the subjects and groups of subjects in which the examination will be held. Certificates of attendance on courses of study in the University shall not be required. Bachelors of Arts who have obtained Honours in any school after the Ordinary degree shall be held to have satisfied the requirements of this clause.

4. All candidates who offer a dissertation either as sole test or in combination with other tests, may be called upon to present themselves for an examination—written, or oral, or both—in the theme of their dissertation.

¹ Students who have entered on an Honours course prior to October 1st, 1906, may obtain permission to proceed to the M.A. degree under the provisions of the Ordinance published in the Calendar for the session 1905-6.

5. The names of candidates who have passed the examination for the degree of Master of Arts shall be arranged in alphabetical order without distinction of classes.

II

Graduates or persons who have passed the Final examination for a degree of other approved Universities shall, if they present evidence satisfactory to the Senate that they are qualified to pursue a course of advanced study or research, be permitted to enter the University and to become candidates for the degree of M.A., without taking the B.A. degree, after not less than two years of such advanced study or research. Such candidates shall be required to give evidence to the Senate at the end of the first year of their period of study that their work has been satisfactory, and at the end of their second year they shall be required to present a dissertation, and to satisfy such further test, if any, as the Senate shall deem expedient. They will, as a rule, be called upon to present themselves for an examination—written, or oral, or both—in the theme of their dissertation.

N.B.—In 1912 the latest date of entry and payment of fee for candidates presenting themselves for examination will be FRIDAY, MARCH 1st, and the examination held under I, 3, will begin about Monday, June 10th. Candidates proceeding to the degree of M.A. by dissertation only must make their entry, pay the prescribed fee, and send in their dissertations not later than WEDNESDAY, MAY 1st. It is desirable that all candidates who present a dissertation should furnish at least two copies of such dissertation.

Examination

Regulations—Bachelors of Arts who have obtained the Ordinary degree and are candidates for the degree of Master of Arts may present themselves for examination *either* in *one* of the following subjects, viz., Greek, Latin, French, German, English Language and Literature, History, Philosophy, Economics, Education, *or* in *two* of the following: Greek, Latin, French, German, English Language and Literature, History, Philosophy, Economics. Candidates who offer two subjects must submit their choice of subjects for approval by the Board of the Faculty of Arts.

Greek

I. As a single subject.

Translation from Greek books selected, as a rule, from those prescribed for Honours in Classics, one paper.

Translation at sight and questions on the subject matter of the specified books, one paper.

Translation at sight and Greek prose composition, one paper.

A dissertation on some subject approved by the Board of the Faculty of Arts.

II. In combination with another subject.

As above, with the omission of the dissertation.

Books prescribed for 1911-12

Homer, *Iliad* xxiii, xxiv; *Odyssey* ix; Sophocles, *Antigone*; Euripides, *Bacchae*; Aristophanes, *Frogs*; Herodotus ii; Thucydides vii; Plato, *Republic* ii, iii.

Books prescribed for 1912-13

Homer, *Iliad* i, vi, *Odyssey* ix; Sophocles, *Ajax*; Euripides, *Hercules Furens*; Aristophanes, *Clouds*; Herodotus iii; Thucydides vii; Plato, *Republic* ii, iii.

Latin

I. As a single subject.

Translation from Latin books selected, as a rule, from those prescribed for Honours in Classics, one paper.

Translation at sight and questions on the subject matter of the specified books, one paper.

Translation at sight and Latin prose composition, one paper.

A dissertation on some subject approved by the Board of the Faculty of Arts.

II. In combination with another subject.

As above, with the omission of the dissertation.

Books prescribed for 1911-12

Plautus, *Captivi*; Lucretius v; Horace, *Odes* i-iii; Virgil, *Georgics* i, ii, *Aeneid* i-iv; Cicero, *Second Philippic*; Livy xii; Tacitus, *Agricola*, *Histories* iii; Juvenal i, iii, iv, x, xi, xiv.

Books prescribed for 1912-13

Plautus, *Trinummus*; Lucretius v; Horace, *Odes* ii-iii; Virgil, *Georgics* i, ii; *Aeneid* i-iv; Cicero, *Second Philippic*; Livy xxi; Tacitus, *Agricola*, *Histories* iii; Juvenal i, iii, iv, x, xi, xiv; Catullus i-v, xii, xiii, xxxi, xxxiv, xxxviii, xlv, xlix, li, lxi, lxx, lxxxiv, ci.

French

I. As a single subject.

Composition and essay, one paper.

Prescribed texts in Old and Modern French, including literary and linguistic study, one paper.

Unprepared translation and historical grammar, one paper.

French Literature (general outlines and special period or periods), one paper.

Oral examination.

A dissertation on some subject approved by the Board of the Faculty of Arts.

II. In combination with another subject.

As above, with the omission of the dissertation.

Books prescribed for 1911-12

G. Paris et Langlois, *Chrestomathie du Moyen Age*; Darmesteter et Hatzfeld, *Morceaux choisis des Ecrivains du 16^e Siècle* (prose only); Corneille, *Polyeucte*; Molière, *Le Misanthrope*, *les Femmes Savantes*; Racine, *Athalie*; Rousseau, *Lettre sur les Spectacles*; Victor Hugo, *Notre Dame*.

Period of Literature prescribed for 1911-12

French Classical Tragedy to the end of the XVIIth Century.

Books prescribed for 1912-13

As for 1911-12, substituting Rousseau, *Extraits* for *Lettre sur les Spectacles*.

Period of Literature prescribed for 1912-13

Rousseau's Life and Works.

German

I. As a single subject.

Composition and essay, one paper.

Prescribed texts in Middle High German and New High German, including literary and linguistic study, one paper.

Unprepared translation and historical grammar, one paper.

German Literature (general outlines and special period or periods), one paper.

Oral examination.

A dissertation on some subject approved by the Board of the Faculty of Arts.

II. In combination with another subject.

As above with the omission of the dissertation.

Books prescribed for 1911-12

Bartsch, *Liederdichter* xxi; Hans Sachs, *Selections* (ed. Kinzel, Halle) in *Denkmäler der älteren deutschen Literatur*, III, i; Schiller, *Maria Stuart*; Goethe, *Faust* i.; Lessing, *Nathan der Weise*; Hartman von Aue, *der Arme Heinrich* (ed. Robertson, Sonnenschein); Gerhart Hauptmann, *die versunkene Glocke*; Kleist, *Prinz Friedrich von Homburg* (ed. Heuwers, Paderborn, Schöningh).

Periods of Literature prescribed for 1911-12

Lessing's Life and Works; Schiller's Life and Works.

Books prescribed for 1912-13

As for 1911-12, omitting Gerhart Hauptmann, *die versunkene Glocke*.

Periods of Literature prescribed for 1912-13:

Schiller's Life and Works; The Romantic Period.

English Language and Literature

I. As a single subject.

Either

- A (a) A dissertation.
 (b) Examination, written or oral or both, in subjects connected with the candidate's dissertation.
 (c) Outlines of English Literature with prescribed books, two papers.

Or

- B (a) An essay, one paper.
 (b) Translation from prescribed books in Old and Middle English, and unseen translation, two papers.
 (c) Outlines of English Literature with prescribed books, two papers.
 (d) One of the following :
 (i) Old and Middle English Dialects, one paper, with Gothic, one paper.
 or (ii) Shakespeare, two papers.

II. In combination with another subject.

Either

- A (a) An essay, one paper.
 (b) Translation from prescribed books in Old and Middle English, and unseen translation, two papers
 (c) Gothic, one paper.

Or

- B (a) An essay, one paper.
 (b) Outlines of English Literature with prescribed books, two papers.
 (c) A special author or subject, one paper.

Books and periods prescribed for 1911-12 and 1912-13

I. As a single subject.

- A (c) Outlines of English Literature, with prescribed books as for English Honours, Scheme B, 1911-12.
 B (b) Prescribed books in Old and Middle English: *Either* (i) *Beowulf*, vv. 1-1651, or vv. 2223 to end, and *Sir Bevis of Hamtoun*, or (ii) Sweet's *Anglo-Saxon Primer*, and Chaucer, *Minor Poems* (Clarendon Press, ed. Skeat).
 (c) Outlines of English Literature, with prescribed books as for English Honours, Scheme B, 1911-12.
 (d) *Either* (i) Wright's *Primer of Gothic Language*, or (ii) a general knowledge of Shakespeare's Plays and Poems.

II. In combination with another subject.

- A (b) Prescribed books in Old and Middle English: *Either* (i) *Beowulf*, vv. 1-1651, or vv. 2223 to end, and Morris and Skeat's *Specimens of Early English*, vol. i, extracts ii, vi, x, xii, xix, or (ii) Sweet's *Anglo-Saxon Primer*, and Chaucer, *Minor Poems* (Clarendon Press, ed. Skeat).
 (c) Wright's *Primer of Gothic Language*.

- B (b) Outlines of English Literature, with prescribed books as for English Honours, Scheme B, 1911-12.
 (c) Shakespeare, *Tragedies*.

History

I. As a single subject.

An essay, one paper.

Either Ancient History (to 337 A.D.) General, two papers with special period in Ancient History, two papers.

Or Mediæval History (300 to 1500 A.D.), General, two papers, with special period in Mediæval History, two papers.

Or Modern History (since 1500 A.D.), General, two papers, with special period in Modern History, two papers.

Candidates may substitute a dissertation for the essay and the two papers on the special period.

II. In combination with another subject.

(a) Ancient or Medieval or Modern History, one paper.

(b) A special subject in the period taken under (a), two papers.

Candidates must in every case satisfy the Board of the Faculty of Arts that the subjects they offer under (a) and (b) form a suitable combination.

Special Periods prescribed for 1911-12

- (1) Roman History, 31 B.C.-37 A.D. ; (2) Life and Times of Saint Francis of Assisi ; (3) The Age of Queen Elizabeth ; (4) European History, 1789-1804 A.D.

Philosophy

I. As a single subject.

(a) General Questions, one paper.

(b) *Three* of the following :

Logic, one paper.

Psychology, one paper.

Ethics, one paper.

History of Philosophy, Ancient or Modern, one paper.

Advanced Psychology *or* Moral and Political Philosophy, one paper.

(c) *One* of the following special subjects, one paper.

Greek Philosophy before Socrates.

Socrates and Plato.

Aristotle.

Post-Aristotelian Philosophy.

Descartes, Malebranche, Spinoza.

Spinoza and Leibniz.

English Philosophy, from Locke to Hume, with reference to Bacon and Hobbes, and to Reid and the Scottish Philosophy.

Kant.

Candidates may as an alternative present a dissertation on a subject approved by the Board of the Faculty of Arts and present themselves for examination in three papers from section (b) or in two papers from section (b) and one paper from section (c).

II. In combination with another subject.

History of Philosophy, Ancient or Modern, one paper.

Logic, or Ethics, or Psychology, or History of Philosophy, Modern or Ancient, one paper.

A special subject, approved by the Board of the Faculty of Arts, one paper.

Economics

I. As a single subject.

(a) An essay, one paper.

(b) English Economic History, including the special study of a set period, two papers.

(c) *One of the following :*

General Principles of Economics, two papers.

A special Economic subject, two papers.

History of Economic Theory, including the special study of the work of a particular economist, two papers.

Candidates who have taken Economics as a subject for the degree of B.A. may not offer General Principles of Economics.

Candidates may as an alternative present a dissertation on a subject approved by the Board of the Faculty of Arts, and present themselves for examination in (b) or in one subject of (c). Such candidates may not offer a special Economic subject and a dissertation on the same subject.

II. In combination with another subject.

English Economic History or History of Economic Theory, one paper.

A special Economic subject, two papers.

Special period for 1911-12 : 1760-1900.

Economist for special study for 1911-12 : Adam Smith.

Education

(A) A dissertation on some subject related to Education and approved by the Board of the Faculty of Arts.

And (B) Either The Theory of Education, two papers, viz :

(1) The aim and form of Education and the organisation of its means, and their relations with Social Philosophy, Ethics and Logic, one paper.

(2) The processes of Education and their relations with the Physiology and Psychology of Development, one paper.

Or The History of Education—one of the following periods, with study of certain original authorities, as arranged after consultation with the Professor—two papers, viz :

(1) From beginnings of Greek education to 1400 A.D.

(2) 1400—1760 A.D.

- (3) 1760 A.D. to present time.
- (4) (a) A detailed study, based on personal knowledge, of the educational system of any one country, selected by the candidate with the approval of the Board of the Faculty of Arts. The examination on this subject may consist of an inspection of the reports and note books presented by the candidate.
- (b) General history of the development of thought in relation to education in Europe, with special reference to the foreign country studied under (a), two papers.

DEGREE OF DOCTOR OF LETTERS

Ordinance. 1. The degree of Doctor of Letters shall be conferred by the University upon registered Masters of Arts of the University who shall be deemed by the Senate, after considering a report from the Board of the Faculty of Arts, to have distinguished themselves by special research or learning.

Provided that the Senate may, in such cases as it shall think fit, after considering a report from the Board of the Faculty of Arts, also require candidates to pass such an examination as it may from time to time determine.

2. A Master of Arts of the University may make application for the degree of Doctor of Letters in the sixth or any subsequent year from the date of his admission to the Bachelor's degree.

3. Such applications shall be made in writing to the Registrar, and shall contain a full statement of the grounds on which the claim for the degree is based, together with one or more copies of any thesis, whether in print or in manuscript, which the applicant may desire to submit in support of the application.

4. If the application be approved by the Senate, the degree may be conferred at the expiration of not less than six years from the date of admission to the Bachelor's degree.

N.B.—In 1912 the latest date for application and payment of fee will be FRIDAY, MARCH 1st, and the examination, if required, will begin about Monday, June 10th.

DIPLOMAS

In Arts, Applied Science and Technology

Diplomas shall be granted by the University, in such *Ordinance.* subjects as the Council may from time to time determine, to students who pursue the courses of study and pass the examinations prescribed.

The Council is empowered to make from time to time Regulations under which such Diplomas shall be awarded.

The award of Diplomas under the provisions of this Ordinance is delegated to the Senate.

Candidates for Diplomas are required to give satisfactory *Regulations.* attendance upon all the subjects which form part of their course of study, and to present themselves for any class examinations that may be held in the same. Those who do not pass satisfactorily in these examinations in any year will be disqualified for the Diploma unless they repeat the course in whole or in part, as may be required by the Senate.

At the close of the course, candidates will be required to present themselves for such examination in the main subject of study as may be prescribed.

Some deviation from these courses may be sanctioned in special cases, and students who on entering upon a Diploma course produce evidence that they possess a sufficient knowledge of the work done during a part of the course will be allowed to dispense with a certain amount of attendance. Applications for exemption from attendance should be made to the head of the department concerned, who shall bring them before the Standing Committee of the Senate appointed to deal with such matters.

For special regulations for Diplomas in Applied Science and Technology, see page 280.

Diploma in Education

1. Candidates for the diploma in Education must be *Regulations.* graduates of some University in the United Kingdom or must have obtained such other academic qualifications as shall be approved by the Senate of the University. At present the course is only open to women students.

2. The session for students in this department will open at the beginning of September and will close about the middle of July.

3. In accordance with the requirement of the Board of Education at least sixty days will be devoted to class work in school.

4. The course is both theoretical and practical.

I. Theoretical Instruction.

Students will attend the following lectures :

(a) Psychological Bases of Education, Saturdays, 9.30-10.30 a.m. during the University session ;

(b) Physical Education, Tuesdays and Thursdays, 9.30-10.30 a.m., during the first term ;

(c) Logical Bases of Education, Tuesdays and Thursdays, 9.30-10.30 a.m., during the second term ;

(d) History of Education, Tuesdays and Thursdays, 10.30-11.30 a.m., during the University session ;

(e) Plato's Republic, Bks. II-IV., Thursdays, 2-3 p.m., during the University session ;

(f) Special courses in methods of teaching and discipline, with direct reference to work in Secondary Schools, twice a week in the 1st and 2nd terms ;

(g) Voice Production.

Note 1.—The courses (a) (b) (c) (d) (e) will, as a rule, be those arranged for the subject of Education for the degree of B.A.

Note 2.—All the courses may be taken in one academic year, but they may be spread over two years.

II. Practical Work.

This will be carried on under the immediate supervision of Miss H. Robertson, B.A., and certain teachers of special subjects in the practising schools.

Students who wish to specialise in one or more subjects of the school curriculum will be definitely attached throughout the year to certain selected schools which can provide special opportunities for the required training.

For several weeks previous to the opening of the University session at the beginning of October, students will be in continuous attendance at selected schools for the purpose of observing methods of organisation, teaching, discipline, &c.

During each week of the University session a certain amount of systematic teaching in school will be done by each student.

The third term will be devoted to practical work in the schools with the exception of such time as is required for attendance at courses of lectures at the University.

A Criticism or Demonstration lesson will be given once a week during the first two terms.

5. The written examination for the diploma will take place in June, at the same time as the degree examinations. The papers—except that in the Practice of Education—will, as a rule, be the same as those set for the degree.

The tests in practical skill will consist in the delivery of lessons and an inspection of records of the candidate's practical work in school. Importance will be attached to reports on the candidate's work and skill from the teacher of the school under whom she has worked, and from the staff of the University Education department. This examination will, as a rule, be held in June or July.

6. Graduates in Arts or Science of this University who have included Education in the Final examination for their degree may obtain the diploma in Education after a further year's attendance on a course approved by the Board of the Faculty in which the degree was taken. Such course must include :

- (a) Attendance in schools as specified in 4. II above ;
- (b) Attendance on course 4. I (f) ;
- (c) Attendance on a course of study in Arts or Science (not included in those taken for a degree), approved by the Board of the Faculty as at least equivalent to the subject of Education taken as part of the Final course for the degree.

The examination for the diploma in Education will in these cases consist of the tests of practical skill, and the paper in the Practice of Education (§ 5).

The diploma in Education in this case will not be issued until the candidate has also passed the degree examination in the subject or subjects included under (c).

7. The list of successful candidates will be issued in alphabetical order, and no special honours will be assigned to any candidate.

8. No diploma will be issued until the candidate has passed in both the written and the practical parts of the examination. But a candidate who fails in the practical part only may, on the recommendation of the examiners, be allowed by the Senate to present that part at a subsequent date without further written examination. In such cases the candidate must produce a satisfactory report from the head teacher of the school in which he (or she) has been teaching, and must submit records of work done.

9. A fee of £15, exclusive of fees for extra classes, is charged to students taking the whole of the course for the diploma, whether in one or two years. The fee for the examination is £1.

10. The following have been recognised as efficient Practising Schools for students :

Leeds Girls' High School.
Bradford Girls' Grammar School.
Wakefield Girls' High School.
Leeds Modern (Girls') School.
Notre Dame Collegiate School.
Mount St. Mary's College, Leeds.
Leeds Cockburn School.
Leeds Thoresby School.
West Leeds High School.

Diploma for Teachers of French

The examinations for the diploma, to be conducted annually, will be :

1. The First examination of the same standard as the Final examination in French for the Ordinary degree

of B.A., including the study of prescribed authors in their literary and linguistic aspect. The study of periods of literature will not be required.

2. The Second examination, in methods of teaching and in phonetics.

Candidates for the diploma will be required

- (1) To pass the First examination, or to give satisfactory evidence that their knowledge of the French language is not below the standard of that examination.
- (2) To attend for at least one year the University class preparatory to the Second examination.
- (3) To pass the Second examination.

Fee for the whole examination (First and Second), £1.

Diploma for Teachers of German

The regulations for this diploma are the same as above, with the substitution of "German" for "French" throughout.

N.B.—In 1912 examinations for these Diplomas will begin about Monday, June 10th. The latest date of entry and of payment of fees will be FRIDAY, MARCH 1st.

Courses in Arts

CLASSICS

Professor RHYS ROBERTS

Professor CONNAL

Mr.

GREEK LANGUAGE AND LITERATURE

Int. Intermediate Course

✧ The work in this course will comprise composition, translation at sight and the special study of Demosthenes, *Philippic* i, *Olynthiac* i, *Conon*, *Callicles*; Euripides, *Bacchae*.

Mondays and Tuesdays at 9.30 a.m., Wednesdays at 11.30 a.m., Thursdays at 9.30 a.m.

Books recommended

Jebb, *Primer of Greek Literature* (Macmillan), and Butcher's, *Demosthenes* (Macmillan).

Sandy's *Demosthenes' Philippic* i and *Olynthiacs* (Macmillan), Swift's *Demosthenes' Conon* and *Callicles* (Methuen), Tyrrell's *Euripides' Bacchae* (Macmillan).

F1. Final Course (First Year)

The work in this course will comprise composition, translation at sight, and the special study of books to be selected when the class meets.

Mondays, Wednesdays and Fridays at 9.30 a.m., and Fridays at 4 p.m.

Books recommended

Murray's, Jevons's, or Mahaffy's *History of Greek Literature*; or Croiset's (the abridged edition).

Sidgwick's *Greek Prose Composition* (Rivington).

F2. Final Course (Second Year)

The work in this course will comprise composition, translation at sight, and special study of Herodotus ii; Thucydides vii; Aristophanes, *Frogs*.

Tuesdays, Thursdays and Fridays, at 9.30 a.m. Composition class on Fridays at 3 p.m.

Books recommended

Murray's, Jevons's, or Mahaffy's *History of Greek Literature*; or Croiset's (the abridged edition).

Woods' *Herodotus* ii (Rivington); Marchant's (Macmillan) or Holden's (Cambridge Press) *Thucydides* vii; Merry's (Clarendon Press) or Tucker's (Macmillan) *Frogs of Aristophanes*.

H. Honours and M.A. Course

The work in this course will comprise composition, translation at sight, and the study of books prescribed for the examinations for Honours in Classics, and for the M.A. in Greek.

Mondays, Tuesdays, Wednesdays, and Thursdays, at 10.30 a.m., and a composition class on Saturdays at 10.30 a.m.

SPECIAL CLASSES

St. Elementary Class

This class is intended for beginners; it will not be held unless there is a reasonable number of entries.

Saturdays at 9.30 a.m.

Special fee, £1 11s. 6d.

Books recommended

Chambers' *Greek War of Independence* (Swan Sonnenschein).

Sonnenschein's *Greek Grammar* (Swan Sonnenschein).

S2. Higher Elementary Class

The work in this class will comprise grammar, elementary composition, translation at sight, and the special study of two of the Greek books prescribed for the Matriculation examination of the Northern Universities.

Mondays, Wednesdays, and Fridays at 11.30 a.m., and a composition class on Saturdays at 11.30 a.m.

Text books will be recommended by the lecturer at the beginning of the session.

The class will not be held unless there is a reasonable number of entries.

LATIN LANGUAGE AND LITERATURE

Int. Intermediate Course

The work in this course will comprise composition, translation at sight, and the special study of Livy xxi, 1-57, and Virgil, *Aeneid* i, ii.

Mondays, Wednesdays and Fridays at 9.30 a.m., and a composition class on *either* Tuesdays at 10.30 a.m. *or* Thursdays at 9.30 a.m.

Books recommended

Livy xxi, Loane (Blackie).

Virgil, *Aeneid* i and ii, Page (Macmillan).

F1. Final Course (First Year)

The work in this course will comprise composition, translation at sight, and the special study of selected books, two of which will be Tacitus, *Agricola*, and Catullus (selection).

Mondays, Wednesdays, and Fridays, at 11.30 a.m., and a composition class on Tuesdays, at 11.30 a.m.

Books recommended

Tacitus, *Agricola*, Walters (Blackie).

Catullus, Simpson (Macmillan).

F2. Final Course (Second Year)

The work in this course will comprise more advanced composition, translation at sight, and the special study of Tacitus, *Histories* iii and Virgil, *Aeneid* iv, vi.

Mondays and Fridays at 4 p.m., and Wednesdays at 11.30 a.m., and a composition class on Tuesdays at 11.30 a.m.

Books recommended

Tacitus, *Histories* iii, Summers (Pitt Press).

Virgil, *Aeneid* i-vi, Page (Macmillan).

H. Honours and M.A. Course

The work in this course will comprise composition, translation at sight, and the study of books prescribed for the examinations for Honours in Classics and for the M.A. in Latin.

Mondays and Fridays at 11.30 a.m., and Saturdays at 9.30 a.m., and a composition class on Saturdays at 10.30 a.m.

Books recommended for Classical Students

Such books as the following will be found useful by classical students:

Murray's Ancient Greek Literature, Jevons's Greek Literature, Mahaffy's Greek Classical Literature, Croiset's Abridged History of Greek Literature, Mackail's Latin Literature, Cruttwell's History of Roman Literature, Wight Duff's Literary History of Rome.

Sandys' History of Classical Scholarship, Saintsbury's History of Criticism, Evelyn Abbott's Hellenica, Butcher's Aspects of the Greek Genius and Harvard Lectures on Greek Subjects, Jebb's Essays and Addresses, Dickinson's Greek View of Life, Tucker's Life in Ancient Athens, Whitley's Companion to Greek Studies, Greenidge's Roman Public Life, G. F. Hill's Greek and Roman Coins, P. Gardner's Grammar of Greek Art, E. A. Gardner's Handbook of Greek Sculpture, Michaelis' Century of Archaeological Discoveries, Reinach's Apollo, Marquand's Greek Architecture, Burrows' Discoveries in Crete, Hawes' Crete the Forerunner of Greece.

Jebb's Growth and Influence of Classical Greek Poetry, Symonds' Studies of the Greek Poets, Mackail's Lectures on Greek Poetry, Butcher's Aristotle's Theory of Poetry and the Fine Arts, Jebb's Introduction to Homer, Gilbert Murray's Rise of the Greek Epic, Browne's Homeric Study, Haigh's Attic Theatre and Tragic Drama of the Greeks, Decharme's Euripide et l'esprit de son Théâtre, Jebb's Attic Orators.

Tyrrell's Latin Poetry, Sellar's Roman Poets of the Republic and Roman Poets of the Augustan Age (Virgil, Horace), Glover's Studies in Virgil, Martha's Poème de Lucrèce, Boissier's Cicéron et ses amis, Warde Fowler's Social Life in the Age of Cicero, Sandys' Companion to Latin Studies.

Giles' Comparative Philology, V. Henry's Comparative Grammar of Greek and Latin, Goodwin's Greek Moods and Tenses, Gildersleeve's Greek Syntax, Monro's Homeric Grammar, the Latin Grammars of Roby, Madvig, Gildersleeve and Lodge, Sidgwick's Lectures on Greek Prose Composition.

ENGLISH LANGUAGE & LITERATURE

Professor VAUGHAN

Dr. MOORMAN

Int. Intermediate Course (Literature)

The work in this course will comprise the history of English literature from 1786 to 1830, and the special study of Palgrave, *Golden Treasury*, book iv; Coleridge, *Ancient Mariner*, Odes on *France* and *Dejection*; Wordsworth, *Tintern Poem* and *Story of Margaret (Excursion)*, book i; Keats, *Hyperion*; Burke, Speech on *American Taxation*; Scott, *Guy Mannering*. Also, Chaucer, *Prologue to Canterbury Tales*; Shakespeare, *Romeo and Juliet*; Milton, *Comus*; Dryden, *McFlecknoe*.

Mondays, Wednesdays and Fridays at 10.30 a.m. throughout the session.

F1. Final Course (English Literature)

Students taking English in the Final course may offer English Literature and Language as a principal subject; or English Literature alone as a subsidiary subject.

The work in this course will comprise (i) the History of English Literature from 1786 to 1850, and the special study of *Lyrical Ballads* (1798); Wordsworth, *Story of Margaret (Excursion)*, book i, *Michael*; Shelley, *Adonais*; Byron, *Manfred*; Keats, *Hyperion*, Odes; Burke, *Reflections on the French Revolution*; Carlyle, *Lectures on Heroes*, i, iii, vi; Browning, *Rabbi Ben Ezra*, *Abt Vogler*, *A Grammarian's Funeral*, *Andrea del Sarto*, *The Last Ride Together*, *Too Late*, *The Worst of It*; *Golden Treasury*, book iv. Also, Chaucer, *Knight's Tale*; Shakespeare, *Macbeth*; Milton, *Samson Agonistes*; Pope, *Epistle to Arbuthnot*.

(ii) Outlines of English Literature.

Mondays, Wednesdays and Fridays, at 10.30 a.m., throughout the session.

F2. Final Course (English Literature and Language)

The work in this course, for those taking English as a principal subject, will comprise, in addition to what is entered under F1, a study of the following books: Cook, *First Book in Old English* (Grammar and Prose Extracts); Sweet, *Anglo-Saxon Reader*, extracts iv, viii, ix, xxii; Chaucer, *Man of Law's Tale*; Sweet, *Middle English Primer* (*Ancren Riwele*).

Two hours a week throughout the session for students in the second year of their Final course.

H1. Honours Course, First Year (Language)

The work in this course will comprise the history of the English Language and the special study of Cook, *First Book in Old English* (Grammar and Extracts i-xv); Sweet, *Anglo-Saxon Reader*, extracts iv, viii, ix; Morris and Skeat, *Specimens of Early English*, vol. i, extracts vi, xiii; Chaucer, *Prologue to Canterbury Tales*.

Mondays, Tuesdays and Fridays at 2 p.m.

H2. Honours Course, Second Year (Literature)

This course will be devoted to the study of the Outlines of English Literature.

One hour a week at a time to be arranged.

H3. Honours Course, Second Year (Literature)

This course will be devoted to the study of the works of Shakespeare.

One hour a week at a time to be arranged.

H4. Honours Course, Third Year (History of Criticism)

One hour a week at a time to be arranged.

H5. Honours and M.A. Course (Language)

Honours students in their second year attend this course for two hours a week, Honours students in their third year attend for one hour a week.

Translation from Old and Middle English texts, as prescribed for the Honours School.

H6. Seminar.

One hour a week at a time to be arranged.

SPECIAL CLASS

S. Post-Graduate Course

A special course, intended for post-graduate students, may be delivered on a subject to be arranged.

One hour a week, during the first two terms, at a time to be arranged.

FRENCH LANGUAGE AND LITERATURE

Professor BARBIER

Dr. GUNNELL

Int. 1, Int. 2. Intermediate Courses

The work done in these two courses is the same in every respect. It will comprise grammar, composition, dictation, translation at sight, conversation in French, and the special study of Auguste Barbier, *Iambes* and Mérimée, *Contes et Nouvelles*.

Course Int. 1 will be held on Mondays, Wednesdays and Fridays at 11.30 a.m., Course Int. 2 at 4 p.m. on the same days.

Books recommended

Auguste Barbier, *Iambes* (Oxford Higher Series).

Mérimée, *Contes et Nouvelles* (Oxford Higher Series).

Int. 3. French Literature (B)

Lectures in French on Auguste Barbier and Mérimée will be given on Tuesdays at 3 p.m. during the first and second terms.

Students taking French for the Intermediate examination are expected to join this class.

Special fee, £1 1s.

F1. Final Course

The work in this course will comprise more advanced syntax and composition, translation at sight, the elements of historical grammar and phonetics, and the special study of Corneille, *Polyeucte* and Racine, *Athalie*.

Mondays, Tuesdays and Fridays, at 2 p.m.

Books recommended

Corneille, *Polyeucte*.

Racine, *Athalie*.

Victor Hugo, *Notre Dame* (Oxford Higher Series).

F2. French Literature (A)

Lectures on *French Classical Tragedy to the end of the XVIIIth Century* will be given in French on Tuesdays at 3 p.m. during the session.

No entry will be taken for less than two terms.

Special fee, £1 11s. 6d. for the session; £1 1s. for two terms.

H. Honours Course

Mondays at 4 p.m. and Tuesdays and Thursdays at 9.30 a.m.

SPECIAL CLASSES**S1. Commercial Course**

Mondays at 10.30 a.m., and Fridays at 9.30 a.m.

In addition to the study of French correspondence, etc., a book bearing on French commercial life will be read.

S2. French Institutions

A course of lectures on French Institutions will be delivered during the first and second terms, on Tuesdays, at 10.30 a.m., commencing October 10th.

S3. Saturday Morning Training Course (A)

This class will meet on Saturdays, from 10.15 a.m. to 12.15 p.m., beginning October 7th. (N.B. The hours may be slightly altered to meet the convenience of students living outside Leeds.)

The course will cover the work in language required for the First examination in connection with the University Diploma for teachers of French, but students who are not candidates for the Diploma will also be admitted on satisfying the Professor that they are sufficiently qualified.

There will be a short examination at the first meeting of the class for students wishing to enter for the first Diploma examination at the end of the session.

Special fee, £2 12s. 6d.

Books recommended

Molière, *Don Juan*.

Leconte de Lisle, *Poems Barbares*.

Choix de Correspondances du XVIII^e siècle, ed. Lanson (Hachette & Cie).

S4. Saturday Morning Training Course (B)

This class will meet on Saturdays, from 10.15 a.m. to 12.15 p.m., beginning October 7th. (N.B. The hours may be slightly altered to meet the convenience of students living outside Leeds.)

The course will cover the work in phonetics and methods of teaching required for the Second examination in connection with the University Diploma for teachers of French, but students who are not candidates for the Diploma will also be admitted on satisfying the Professor that they are sufficiently qualified.

Special fee, £2 12s. 6d.

GERMAN LANGUAGE AND LITERATURE

Professor SCHÜDDEKOPF

Dr. GOUGH

Int. Intermediate Course

Mondays and Fridays at 3 p.m., and Thursdays at 10.30 a.m. or 2 p.m. (If necessary, the hours of this class on Thursdays will be altered).

This course is intended for candidates entering for the Intermediate examination in Arts, Science, and Commerce, and for general students who wish to acquire a greater proficiency in German. In addition to the prescribed work, syntax, dictation and composition will be studied, and the class will have practice in German conversation.

Books recommended

Kuno Meyer, *German Grammar*, parts i and ii (Sonnenschein).

Third German Reader and Writer (Sonnenschein).

Keller, *Kleider machen Leute* (ed. Lambert, Heath & Co.).

Goethe, *Hermann und Dorothea* (Pitt Press).

F. Final Course

Mondays, Wednesdays and Fridays, at 9.30 a.m.

The work of this class comprises revision of German syntax, the elements of historical grammar and phonetics, study of advanced texts, and composition. The class will be taught in German.

Books recommended

Schiller, *Maria Stuart* (Pitt Press).

Hans Sachs, *Selections* (in Kinzel's *Denkmäler der älteren deutschen Literatur*, III 1; Halle).

Macaulay's *Critical and Historical Essays*.

Longmans' *German Composition* (Longmans).

Behaghel, *Die deutsche Sprache* (Leipzig, Freytag).

Rippmann, *Elements of Phonetics* (Dent).

H. Honours and M.A. Course

Mondays, Wednesdays and Fridays at 10.30 a.m.

The work of this class will comprise Old and Middle High German grammar and literature, and interpretation of Old High German and Middle High German texts. Part of the work taken in this course is also suitable for graduates reading for the M.A. examination.

Books and periods will be found under the Honours School of Modern Languages and Literatures for the B.A. degree with Honours.

SPECIAL CLASSES**S1. Lower Elementary Class**

Mondays and Fridays at 2 p.m.

This class is intended for beginners. Special attention will be given to students of science.

Books recommended

Kuno Meyer, *German Grammar*, part i (Sonnenschein).

Sonnenschein, *First German Reader and Writer* (Sonnenschein).

Fiedler-Sandbach, *First German Course for Science Students* (Moring).

S2. Higher Elementary Class

Mondays and Fridays at 4 p.m.

This course is intended for students who already possess an elementary knowledge of German. In addition to the

study of grammar and composition, the work of this class will include books of general literary interest, as well as texts bearing on various branches of science. German conversation will be practised.

Books recommended

Kuno Meyer, *German Grammar*, parts i and ii (Sonnenschein).

Second German Reader and Writer (Sonnenschein).

Paul Heyse, *Hans Lange* (ed. Macdonell, Whittaker).

Dippold, *Scientific German Reader* (Ginn & Co.).

S3. German Literature

Lectures on *Schillers Leben und Werke* and *Die Romantische Schule* will be given in German on Tuesdays, at 4 p.m., during the first and second terms, commencing October 10th.

During the third term a German Literature Revision Class will be held for candidates reading for Honours or M.A. in German, or the Final B.A. examination.

Special fee, £1 11s. 6d. for the session; £1 1s. for two terms; 10s. 6d. for one term.

S4. Lower Commercial Course

Tuesdays and Thursdays, at 3 p.m.

In addition to the study of German correspondence, &c., a book bearing on German commercial life will be read, the title of which will be announced at the beginning of the first term. The class will be taught in German.

Book recommended

Whitfield-Kaiser, *Course of Commercial German* (Longmans).

S5. Higher Commercial Course

The hours of this class will be arranged at the beginning of the first term.

The study of German correspondence, etc., will be continued, and German books on economic subjects will be read, the titles of which will be announced at the beginning of the first term. The class will be taught in German.

Book recommended

Whitfield-Kaiser, *Course of Commercial German* (Longmans).

S6. Saturday Morning Training Course (A)

This class will meet on Saturdays, from 10.30 a.m. to 12.30 p.m., beginning October 7th. (N.B. The hours may be slightly altered to meet the convenience of students living outside Leeds.)

The course will cover the work required for the First examination in connection with the University Diploma for teachers of German, but students who are not candidates for the Diploma will also be admitted on satisfying the Professor that they are sufficiently qualified.

There will be a short examination at the first meeting of the class for students wishing to enter for the first Diploma examination at the end of the session.

Special fee, £2 12s. 6d.

Books recommended

Grillparzer, *Sappho* (ed. Rippmann, Macmillan).

Scheffel, *der Trompeter von Säckingen* (ed. Milner-Barry, Macmillan) pp. 1-62.

Heines *Prosa* (ed. Buchheim, Clarendon Press) pp. 1-47.

Macaulay's *Critical and Historical Essays*.

Meyer's *German Grammar*, parts i and ii (Sonnenschein).

Behaghel, *Die deutsche Sprache* (Leipzig, Freytag).

S7. Saturday Morning Training Course (B)

This class will meet on Saturdays, from 10.30 a.m. to 12.30 p.m., beginning October 7th. (N.B. The hours may be slightly altered to meet the convenience of students living outside Leeds.)

The course will cover the work in phonetics and methods of teaching required for the Second examination in connection with the University Diploma for teachers of German, but students who are not candidates for the Diploma will also be admitted on satisfying the Professor that they are sufficiently qualified. The titles of the books used in this class will be announced at the beginning of the first term.

Special fee, £2 12s. 6d.

HISTORY

Professor GRANT

Miss COOKE

INTERMEDIATE COURSES**Int. 1. Outlines of Greek and Roman History**

Tuesdays and Thursdays at 11.30 a.m.

Greek History to the death of Alexander.

Roman History from 264 B.C. to 70 A.D.

The following Lives in Plutarch will be studied in connection with this course:—Lycurgus, Solon, Themistocles, Pericles, Fabius Maximus, Aemilius.

The text used will be the translation of Stewart and Long in Bohn's Library. The above Lives are all contained in vol. i, which can be procured separately for 2s.

Int. 2. Modern History from 1763 to 1900

Two hours a week at times to be arranged.

This course will not be given unless there are candidates for the degree of B.Com.

FINAL COURSES*First Year: Final***F1. Outlines of European History since the decline of the Roman Empire**

Tuesdays and Thursdays, at 10.30 a.m.

*Books recommended*G. R. Adams, *European History* (Macmillan).Grant, *Outlines of European History* (Longmans).Myers, *General History* (Ginn).Ramsay Muir, *New School Atlas of Modern History* (Philips, 3/-).

This is also a course for the Special Intermediate examination for candidates for the B.A. degree with Honours in Literature.

F2. English Constitutional History since 1485

Tuesdays at 11.30 a.m.

*Second Year : Final***F3. Greek History from 445 to 371 B.C.**

Fridays at 9.30 a.m.

F4. Roman History from 31 B.C. to 180 A.D.

Tuesdays and Thursdays at 9.30 a.m.

F5. English History from 1625 to 1702

Mondays and Wednesdays at 9.30 a.m.

F6. European History : the Thirteenth Century

Tuesdays and Thursdays at 10.30 a.m.

This is also a course for the Special Intermediate examination for candidates for the degree of Honours in History.

Note:—The above periods will be studied in connection with certain of the original authorities which will be indicated at the beginning of the session.

F7. Economic History. (Professor MACGREGOR)

The commercial and industrial history of England, mainly in the nineteenth century.

Two hours a week at times to be arranged.

Candidates for the Final examination for the B.A. degree are recommended to take the course in English History and any one of the other courses.

HONOURS AND M.A. COURSES**H1. English Constitutional History**

Tuesdays at 11.30 a.m.

H2. Roman History from 31 B.C. to 37 A.D.

One hour a week at times to be arranged.

H3. The Life and Times of Saint Francis of Assisi

Mondays and Wednesdays at 11.30 a.m.

H4. Supplementary Class on the Life and Times of Saint Francis of Assisi for students in their third year,

Thursdays at 11.30 a.m.

**H5. Constitutional Documents of the Reign of
Queen Elizabeth.**

Fridays at 10.30 a.m.

H6. European History : 1789 to 1804

Mondays and Wednesdays at 10.30 a.m

H7. Essay Class

One hour a week at times to be arranged.

PHILOSOPHY

Mr. GILLESPIE

Int. Intermediate Course : Logic

Two Lectures a week throughout the session at times to be arranged.

This course deals with the elements of logic, deductive and inductive. Students will find it useful to familiarise themselves with the elementary formal logic, in some such text-books as *Jevons* or *Fowler*, before entering the class.

F1. Final Course : Ethics

Two lectures and a tutorial class each week throughout the session, at hours to be arranged.

Subjects: The outlines of ethical theory, together with the elementary psychology of the will, and the study of selected ethical systems.

F2. Final Course : History of Ancient Philosophy

Two lectures and a tutorial class each week throughout the session, at hours to be arranged.

Subjects: The outlines of the history of Greek philosophy with more detailed study of special books.

Candidates for Honours in Classics attend this class.

H. Honours Courses

Lectures will be delivered on Logic, Modern Philosophy, and the Political Philosophy of Plato and Aristotle (first term), at hours to be arranged.

POLITICAL ECONOMY

Professor MACGREGOR

INTERMEDIATE COURSE

Int. Political Economy

This course deals with the physical geography of industry and trade, and gives a general outline of the occupations and earnings of the chief classes in the community.

Two hours a week at times to be arranged.

FINAL COURSES

F1. Principles of Political Economy

In the first term, the existing organisation of Land, Labour and Capital in England will be described historically. In the second and third terms the principles will be explained on which this organisation is based.

Two hours a week at times to be arranged.

F2. Studies of Industrial Questions

This course deals with the application of general principles to some of the chief questions of industry and trade. Among these are:—Money and banking, taxation, protection and free trade, trade unions, and labour problems.

Two hours a week at times to be arranged.

HONOURS AND M.A. COURSES

H1. Recent Industrial History of England (1800-1900)

This course includes (a) the history of land tenure, agricultural development, and land legislation; (b) labour organisation, and legislation affecting labour; (c) the organisation of capital; (d) commerce, the tariff, and the financial system; (e) the development of public opinion, and the chief social teachers of the period.

Two hours a week at times to be arranged.

H2. Social Economy

The influence of industrial conditions on social life; the problems of poverty, trade depression, large cities, small holdings, social betterment.

One hour a week, at a time to be arranged, during the first two terms.

Special fee, 10s. 6d.

Books recommended

- Booth, *Life and Labour*, Vol. 1., Part 1., and Final Volume.
 Rowntree, *Poverty*.
 Meakin, *Model Villages and Factories*.
 Hobson, *The Unemployed*.
 The Reports on Housing, Sweating, Vagrancy, Physical Deterioration, Small Holdings, The Poor Laws, &c.

H3. Political Theory

The nature and duties of the State and the basis of citizenship.

Two hours a week at times to be arranged.

Tutorial Instruction in Special Subjects

Tutorial instruction will be given in the special subject which may be chosen from any branch of political or social economy, of industrial history, or of political theory.

EDUCATION

Vice-Chancellor of University and Principal of Training Department :

Professor : J. WELTON, M.A.

Master of Method : W. P. WELPTON, B.Sc.

Mistress of Method : Miss H. ROBERTSON, B.A.

Assistant Lecturer in Education : A. J. MONAHAN, M.A.

Assistant Master of Method : F. W. TURNER, B.Sc.

Assistant Mistresses of Method :

Miss E. M. BLACKBURN, M.A. Miss E. PARRY, M.Sc.

Teacher of Music, Reading and Elocution :

T. J. HOGGETT, Mus. B.

Training Department for Teachers for Primary Schools

A Training Department, under the provisions of the Education Code, was established in 1891.

The following particulars are supplied for the information of candidates who desire to be admitted to the Leeds University Training Department as King's Scholars.

CONDITIONS OF ADMISSION

N.B.—The conditions of admission may be modified on the publication of the Regulations for the Training of Elementary Teachers issued by the Board of Education during the coming session.

1. Candidates, except as provided below, must be over 18 years of age on the 1st of August in the year of admission, and must have fulfilled the conditions stated in the sections following :—

i. Persons who have, during the three years immediately preceding their admission, been in regular attendance at a Secondary School, which is on the list of Secondary Schools recognised by the Board of Education as efficient, may be admitted as Three Year Students if they are over 17 years of age on the 1st of August in the year of admission.

ii. The qualifying examination must have been passed, as a rule, within the two years and six months preceding the 1st of August in the year of entering the Training Department.

iii. Persons who have been recognised as Bursars or as Pupil Teachers under the Board's Regulations for the Preliminary Education of Elementary School Teachers, will not be admitted to the Training Department until the termination of their period of recognition (see *Regulations for the Training of Teachers*, Sec. 44a).

2. Candidates, before being accepted, are required by the Regulations of the Board of Education to be examined by the Medical Officer of the Department, and can only be admitted if reported as without physical defect or organic disease, strong and in good health, and capable of entering on a three years' degree course with professional training without undue strain.

3. Candidates will be required to furnish certificates of good character.

4. All candidates will on admission be required to give an undertaking to the Board of Education for the purpose of securing that in return for the grant payable under the

Board's regulations, they will complete their training in the Department, and thereafter actually follow the profession of teacher in an approved school for such period or periods, or repay to the Board such proportion of that grant, as may respectively be specified in the undertaking.

An approved school includes any Public Elementary School, and any Secondary School, Pupil Teacher Centre or Training College, in respect of which grants are paid by the Board out of monies provided by Parliament (*see sect. 106 and App. B. Regulations for the Training of Teachers*).

5. Candidates are required to have passed before admission one of the examinations which are recognised by the Board of Education as qualifying students for admission to a Training College for a three years' University Degree Course. Among the examinations so recognised are :—

(a) The Matriculation Examination of the Northern Universities, provided the candidate passes in English Literature and in Geography.

(b) The Matriculation Examination of the London University, provided the candidate passes in History and Geography, taken either as separate subjects, or as a single subject in combination.

(c) The Senior Local Examinations of the Universities of Oxford and Cambridge, provided the candidate passes in complete sections in the following subjects :

Arithmetic, English Language and Literature, History, Geography, Mathematics, two Languages *or* one Language and a Science subject approved by the Board.

Candidates who pass their qualifying examinations after August 1st, 1910, will not be regarded as qualified for admission to a University Course unless they have passed one of the following examinations under conditions approved by the Board :

i. The Matriculation Examination of the Northern Universities, provided that the candidate passes in the following subjects :

- (a) English Literature.*
- (b) English History.*
- (c) Geography.
- (d) Mathematics.
- (e) One Language selected from Latin, Greek, French, and German.
- (f) Either a second Language, or Physics, or Chemistry, or Botany.

ii. The Matriculation Examination of the University of London, provided the candidate passes in the following subjects :

- (a) English.*
- (b) Modern History.*
- (c) Geography.
- (d) Mathematics.
- (e) One Language selected from Latin, Greek, French, and German.
- (f) Either a second Language, or Physics, or Chemistry, or Botany.

*In these subjects a higher standard of attainment will be required than that indicated by a pass.

[See *Regulations for the Training of Teachers for 1910. Appendix A (ii.)*]

6. All students of the Training Department are required to fulfil the requirements, to attend the classes and to enter for the examinations qualifying for a Degree of the University of Leeds. Hence candidates must before admission pass, or obtain exemption from, the Matriculation Examination of the Northern Universities, and must declare their intention, if admitted, of completing the three years' course required for a Degree.

Candidates who propose to read for a Degree in Arts must pass in Latin and one other language at one of the qualifying examinations.

7. The selection of candidates admitted to the Training Department is determined by the results of the Matriculation Examination of the Northern Universities. Preference is given to those placed in the First Division, and who have taken alternative Higher Papers (*see Syllabus of the Matriculation Examination of the Northern Universities, and compare section 5 above*).

8. Candidates who have passed, or obtained exemption from, the Matriculation Examination of the Northern Universities, but who have omitted from their examination one or more of the subjects necessary for qualification must present themselves in the omitted subject or subjects before entrance. They may do this without entering again for the whole Matriculation Examination (*compare sections 5 and 6*).

N.B.—All communications respecting the Matriculation Examination of the Northern Universities should be addressed to The Secretary of the Joint Matriculation Board, 24, Dover Street, Manchester.

9. Application and Testimonial Forms may be obtained from the Master of Method, The University, Leeds. Forms will be issued after October 1st in each year, and applications for admission should be made as early as possible, and in any case before the end of the following July.

RESIDENCE

10. Candidates accepted will generally come into residence at the beginning of October, but those who have had no experience in teaching will be required to begin in the Practising Schools in the middle of September (*see section 16*). They will be at liberty to reside at their own homes if these are within reasonable distance of the University.

Men students may, by permission of the Managing Committee of the Training Department, reside in lodgings which have been inspected, and are registered and subject to inspection, by the University authorities. A list of registered lodgings will be forwarded on application

TERMS

11. The Training Department session coincides nearly with that of the University, which begins in October, is divided into three terms of about eleven weeks each, and ends in June. Students in training will be engaged in practical training in schools during certain parts of the University vacations.

GRANTS AND FEES

12. The Government grant for maintenance of £25 a year for men and £20 a year for women students will be paid, at the times and in the instalments prescribed by the Board of Education, to such King's Scholars as reside at home or in registered lodgings. All women students who do not reside with their parents or guardians are required by the Regulations of the Board of Education to reside in the University Hostel. Further particulars can be obtained from the Master of Method.

13. All King's Scholars admitted to the Training Department will be required to pay annually a tuition fee of £10, and also a sum of 10s. 6d., the compulsory annual fee payable for membership of the University Union. The University examination fees to be paid by all King's Scholars are as follows:

Intermediate Examination in Science or Arts	...	£1
Final Examination in Science or Arts	...	£1
Graduation	...	£5

No further payment to the University will be required, but Scholars are required to provide their own books, and those who work in the University laboratories will have to supply themselves (by purchase or hire) with a small amount of scientific apparatus. The King's Scholars in residence will be admitted without additional fee to the lectures, classes, and laboratory work required for their prescribed courses of study.

EXAMINATIONS

14. All students of the Department will attend the classes and will be required to enter for the examinations qualifying for a degree of the University.

N.B.—The attention of applicants is drawn to the following Regulation of the Board of Education.

Art. 44d.—As a condition of continued recognition a Three Year Student must in each year of the course make due progress towards obtaining his degree. No student will be regarded as making due progress unless he passes any examination which may form an Intermediate stage in the course for a University degree not later than the time contemplated by the ordinary arrangement of the University course of study.

This imposes on students the necessity of passing the Intermediate examination for a degree at the end of the first year. Students who fail to do this can only continue to hold the King's Scholarship for one more year as non-degree students.

15. The Government certificate will be issued on the results of examinations conducted in part by the Board of Education and in part by the University. Students substitute approved University examinations for the greater part of the syllabus of the Certificate Examination conducted by the Board of Education.

N.B.—The attention of applicants is drawn to Art. 50 of the Regulations for the Training of Teachers of the Board of Education, which lays down the conditions on which University students may be certificated.

PROFESSIONAL TRAINING

16. The professional training of the students is conducted by the staff of the Department of Education. This training includes courses of lectures and written exercises in the History, Theory, and Art of Education forming part of the course for a pass degree, and attendance at exercises in Practical Teaching, supplemented by practical work in selected schools under the supervision of the professional staff.

Students who have had, previous to their entering the Department, no practical experience of teaching in Elementary Schools in a capacity recognized by the Board of Education, are required to spend a longer period in school practice than those who have had such practical experience.

17. Attendance on courses of instruction in Music, Drawing, Reading and Recitation, and Needlework (for women) is compulsory under the Regulations of the Board of Education. Satisfactory progress in these subjects is a condition of continued recognition and certification by the Board of Education.

Teachers for Secondary Schools

A full course of instruction in the theory and practice of education is provided for women students intending to become teachers in secondary schools. Such students attend the ordinary courses of lectures in Education and exercises in Practical Teaching, and special courses to prepare for the Diploma in Education of the University are provided as required.

Arrangements are also made for practical training in class teaching and management in certain selected secondary schools in Leeds or in the immediate neighbourhood.

The whole course may be taken in one session, or may be spread over two or three sessions.

Diploma in Education

For Regulations, see page 187.

LECTURE COURSES

F1. Education : First Year Course

Mondays and Fridays at 4 p.m.

Principles and Methods of Teaching.

Each Term—Exercise in Practical Teaching. One and a half hours a week on Thursdays at 3.15 p.m.

F2. Education : Second Year Course

A. Tuesdays and Saturdays at 9.30 a.m.

First Term—Physical education and school hygiene. School organization.

Second Term—The logical bases of education.

Third Term—The ethical foundations of moral education, with applications to school discipline.

B. Thursdays at 9.30 a.m.

Each Term—The psychological bases of education.

Each Term—Exercise in Practical Teaching. One and a half hours a week on Thursdays at 3.15 p.m.

F3. Education : Third Year Course

Course A. Tuesdays and Thursdays at 10.30 a.m. The history of educational thought in Western Europe from the Renaissance to the present time, with special reference to England, and special emphasis on the Nineteenth Century.

Course B. Thursdays at 2 p.m. Plato, *Republic*, ii, iii, iv.

A discussion class on the Practice of Education will be held in the first and second terms, if a sufficient number of students wish to join it. Attendance optional. Time to be arranged.

Each Term—Exercise in Practical Teaching. One and a half hours per week on Thursdays at 3.15 p.m.

S1. Drawing and Elementary Design

This course is arranged to meet the requirements of the students in the Training Department, and consists of one lecture per week in the first and second years, together with at least one hour per week for practical work. The classes will be arranged after the beginning of the session.

Students wishing to prepare for any subjects which they may require in order to complete the Elementary Drawing Certificate of the Board of Education may do so by arrangement with the lecturer.

S2. Reading and Recitation

Classes will be held at times to be arranged.

S3. Music

For first and second year King's Scholars, on Thursdays, at 2 p.m. for choral music. Tutorial classes will be held at times to be arranged.

S4. Needlework

For first or second year King's Scholars two hours a week at times to be arranged.

DEGREE, DIPLOMA, AND COURSES OF STUDY IN COMMERCE

Students in the Department of Commerce may take a three years' course for the degree of Bachelor of Commerce, or a two years' course for the diploma in Commerce, according to the ordinance and regulations which follow.

Degree of Bachelor of Commerce

Ordinance.

1. The degree in Commerce shall be that of Bachelor of Commerce (B. Com.).
2. All candidates for the degree of Bachelor of Commerce shall be required to have passed the Matriculation examination, with at least one modern foreign language as one of the subjects, and thereafter to have pursued approved courses of study for not less than three academic years.
3. The complete course of study for the degree of Bachelor of Commerce shall be divided into two parts, called respectively the Intermediate course and the Final course.
4. Every candidate shall be required to pass two examinations, the Intermediate and the Final.
5. The Intermediate and Final examinations shall ordinarily be held in June of each year.¹ There shall also be a supplementary Intermediate examination in September, at which those candidates only may present themselves who have obtained the permission of the Senate.
6. Candidates who have failed at an Intermediate examination in June, and have obtained permission to present themselves at the following supplementary examination, may be excused such part of the supplementary examination as the combined examination committee, on report from the examination committee for the degree of Bachelor of Commerce, may determine.

N.B.—In 1912, they will begin on Monday, June 10th. The latest date of entry and of payment of fees will be FRIDAY, MARCH 1st.

7. All students shall be required, before presenting themselves for the Intermediate or Final examination, to furnish to the Registrar certificates testifying that they have regularly attended the prescribed courses of study, and performed the class exercises to the satisfaction of the Professor or Lecturer, in each of the subjects which they offer at the examination.

Intermediate Course and Examination

Ordinance Every candidate shall be required, after passing the Matriculation examination, to attend during not less than one academic year approved courses of study in five subjects, viz. :

- i. Economics : the outlines of the economic history of England in the Nineteenth Century, and the general elementary principles of Economics
- ii. The economic geography of the British Empire
- iii. A modern foreign language (French *or* German)
- iv, v. *Two* of the following :

A second modern foreign language (French *or* German, whichever of the two has not been offered under iii)

Mathematics

European History from 1763,

and to pass in each of the subjects offered. The examination in each modern foreign language shall include an oral examination.

Regulation Every candidate shall also be required to attend, during his first year, a course of lectures on Accountancy for at least one hour a week.

Final Course and Examination

Ordinance Every candidate shall be required, except as provided in the following clause, to attend approved courses of study, extending over two years, and to pass an examination in each of the following principal subjects :

- i. Economics : comprising (a) advanced general Economics (b) a special commercial or economic subject

- ii. A modern foreign language (French *or* German)
- iii. A second modern foreign language (French *or* German, whichever of the two has not been offered under ii)
- iv. Accountancy.

The examination in each modern foreign language shall include an oral examination. An essay shall also form part of the examination.

For the second modern foreign language candidates may substitute the two following, studied each for one year as a subsidiary subject :

- (a) The economic geography of the principal foreign countries
- (b) Commercial Law

Candidates may take the course of study in a subsidiary subject in the first year of the Final course, and present themselves at the end of that year for examination in such subject.

Diploma in Commerce

In addition to the degree of Bachelor of Commerce the Regulations University offers a diploma in Commerce, the course of study for which extends over two years. Candidates for the diploma must have passed the Matriculation examination, with at least one modern foreign language as one of the subjects, or some other public examination, which in the opinion of the Senate is of sufficiently high standing, and must thereafter have pursued approved courses of study for not less than two years, and passed the prescribed examinations.

First Year Course and Examination

Economics

French *or* German

The economic geography of the British Empire

Accountancy

Mathematics *or* a second language *or* some other course to be approved by the Senate.

Second Year Course and Examination***I. Compulsory Subjects :***

Economics, more advanced general course

French *or* German

The economic geography of the principal foreign countries

Accountancy, second year course

Commercial Law.

II. Optional Subjects :

Candidates for the diploma may also take, in their second year, an optional course in a second foreign language *or* a short course in the Textile, Engineering, or other Technological Department of the University.

Separate Classes in Commercial Subjects

Those who are unable to spare the necessary time for the acquisition of a degree or diploma in Commerce may be admitted to such of the classes in the department as may suit their requirements and their other engagements during the day, on payment of the fees for the separate classes, in addition to the registration and library fee.

Honours Degree in Arts**Economic and Political Science**

Candidates for the Degree of Bachelor of Arts with Honours in Economic and Political Science shall be required to pursue courses of study, and to submit themselves to examination, as follows :—

The course of study for the first academic year shall include the following subjects, as for the Intermediate Examination for the Ordinary degree of B.A., (1) Latin or Greek ; (2) French or German ; (3) Modern History or English Literature, or, if not taken under (2), French or German ; (4) Political Economy ; and, in addition, (5) Economic Geography. An examination will be held in these subjects at the end of the first year, and must be passed before proceeding to further study.

(Candidates who have passed the above Intermediate examination, but are unable to continue their Honours course, may apply to the Senate for permission to proceed to the Final Course and examination for the Ordinary degree of B.A.).

Attendance on the full course for the Intermediate examination for the degree of B.A. may also be accepted by the Senate as the required attendance for the first year of the Honours course.

During the second and third year candidates shall be required to attend approved courses in the subjects of the school of not less than five hours a week in each year.

They shall also be required to attend, during the second and third years, approved courses of lectures on other subjects, the number of lectures amounting to not less than two hours a week in each year.

Examination

Essay, one paper.

Political Economy, two papers.

Social Economy, one paper.

Recent Industrial History of England, two papers.

Political Theory, one paper.

A special subject, studied in connection with original sources of information, two papers.

The special subject may be chosen by the candidate, subject to the approval of the Board of the Faculty of Arts.

Courses of Study

The following syllabus explains more in detail the nature of the various courses.

Political Economy

Int. Intermediate Arts Class

This class is introductory, its aim being to present a picture of industrial life in its broad aspects, and to familiarise students with the use of economic terms and ideas. A study is made of (a) the physical basis of industry and trade, (b) the ideas of production, market value,

distribution, competition, co-operation, national wealth and welfare, and other economic methods and relations, (c) the chief forms of industrial work and earnings.

Two hours a week at times to be arranged.

F1. Principles of Political Economy

The first term will be given to the study of the broad aspects of industrial development in England in recent times. This will lead up to an explanation of the chief features of the existing industrial organisation of the country. In the second and third terms this descriptive study will be used as a basis for the explanation of economic principles. The principles connected with the production and distribution of wealth ; with wages, profits, interest, and rent ; and the value of goods and services, will be dealt with.

Two hours a week at times to be arranged. Commercial students take this class in their first year, Arts students in their second year.

F2. Studies of Industrial Questions

This course will deal more in detail with particular departments of industrial and commercial activity. It will include such subjects as :—the money market ; currency and banking ; fluctuations and depressions of trade ; rates, taxes and debts ; the different forms of wages ; Trusts and Trade Unions ; free trade and protection. The principles involved will be kept in view, but the course will also be descriptive of present conditions.

Two hours a week at times to be arranged. Commercial students take this class in their second year, Arts students in their third year.

H1. Recent Industrial History of England (1800—1900)

A course of lectures is given annually on the industrial history of England in the nineteenth century. The course includes :—(a) the history of land tenure, agricultural development and land legislation ; (b) labour organisation, and legislation affecting labour ; (c) the organisation of

capital ; (d) commerce, the tariff, and the financial system ; (e) the development of public opinion, and the chief social teachers of the period.

Two hours a week at times to be arranged.

H2. Social Economy

This course deals with the various sides of the "social problem." The purpose of the lectures will be to explain :— (1) The results of recent enquiry, both public and private, into social conditions, and (2) the existing social legislation of the country. The problems dealt with include :—the nature and extent of poverty, the Poor Laws, trade depression, unemployment, land tenure, the growth of cities, sweating, co-partnership and co-operation, social betterment.

One hour a week during the first two terms, at a time to be arranged.

Special fee, 10s. 6d.

Tutorial Instruction in Special Subjects

Tutorial instruction is given to students who wish to study in detail some special aspect of industry, commerce, or social economy. The subjects in which such instruction is given are fixed by the choice of students reading for a degree in Commerce, or an Honours degree in Arts. Examples of such subjects are :—Industrial Combination, Transport, Poor Law Administration, Foreign Trade, Industrial Peace, Municipal Trade, or the study of any particular industry.

Times to be arranged. A special subject must be taken by students for the B.Com. degree, and for the B.A. degree with Honours in Economic and Political Science.

Economic Geography

1. Intermediate Class—The United Kingdom

The physical geography of the United Kingdom, in its relation to industry and trade. The chief agricultural and pastoral areas. The railway and canal systems. The

distribution of population, and the growth of manufacturing districts. The chief ports, and their hinter-lands. The main imports and exports, and their markets. The coal fields, and the sources of other raw materials.

Two hours a week, for candidates for a Degree in Arts with Honours in Political and Economic Science, at times to be arranged.

2. First Commercial Class—The British Empire

This class is similar to that on the United Kingdom. It deals with the physical conditions of the chief parts of the Empire, their chief products, and trade relations; the bearing of physical conditions on commercial federation will be considered. In addition to the United Kingdom, attention will be given to Canada, South Africa, Egypt, Australasia, and India.

Two hours a week at times to be arranged.

3. Second Commercial Class—The Chief Foreign Countries

Similar methods of study will be applied to the physical features, resources, transport systems, and trade relations of America, Germany, France, the Near East, the Far East.

Two hours a week at times to be arranged.

Agricultural Economics

A short course will be given in the Economics and Statistics of Agriculture, chiefly in the United Kingdom. The course will deal with the principles of rent, the forms of land tenure, and the returns of acreage, stock, and output of Great Britain and Ireland.

One hour a week in the second term, at a time to be arranged.

Labour and Capital

A course will be given in the second term for the study of Labour and Capital in modern business. This course will be non-theoretical, and is intended to meet the needs of

students in the Technological departments, who wish to make a descriptive study of existing business conditions.

One hour a week at a time to be arranged.

Special fee, £1 5s.

Accountancy

First Year Course.—Tuesdays, 3 p.m.

Second Year Course.—Tuesdays, 4 p.m., and at a second hour to be arranged.

Third Year Course.—Hours to be arranged.

First Year: The course will deal with (1) the general principles of book-keeping, illustrated by the ordinary transactions of a merchant or manufacturer; (2) the special principle of book-keeping by double entry; (3) the books themselves—various subsidiary books, leading up to the ledger; (4) the trial balance and the various methods of preparing it; (5) the preparation of the trading account, profit and loss account and balance sheet; (6) cheques, bills of exchange, and other important commercial documents.

Second Year: (1) Partnership accounts and other more complicated transactions; (2) the different forms of books and accounts suitable for various kinds of businesses; (3) the various methods of stock-taking; (4) the books and forms used for limited companies in connection with the share capital, debentures, &c., a study of the balance sheets of a number of companies; (5) departmental accounts; (6) the preparation of accounts required for income tax purposes.

Third Year: (1) The analysis of accounts with a view to the computation of earnings and comparison of expenses; (2) costing and cost accounts; (3) sinking funds, provision for depreciation, &c.; (4) the various methods of payment of wages and of remuneration for management; (5) limited companies—public and private—their advantages and disadvantages; (6) fixed charges and the relation of selling prices to cost prices; (7) goodwill.

Modern Languages (French and German)

In the degree course students in their first year will take the same work in languages as Arts students, including composition, translation at sight, dictation, conversation and the study of prescribed books. It is not thought desirable that the teaching should be specialised at this stage in the case of degree students.

During the second and third years, in preparation for the Final examination, students will continue some parts of the general work and teaching, but will also read specially selected books of an economic or commercial character, and they will have opportunities of studying (1) correspondence, and (2) the institutions of the country whose language they are learning.

Diploma Students must attend the Intermediate class in the first year, and the Final class in the second year. They must also attend for at least one year a commercial class.

Mathematics

The course in Mathematics will be that for the Intermediate B.A. It is intended for students who propose to enter a career such as that of an accountant, in which a mathematical training may be of special value.

Commercial Law (Law S1)

Wednesdays and Fridays at 3 p.m. throughout the session.

First Term: The general principles of the law of contract; the conception of contract in English Law; doctrine of consideration; statute of frauds; Sale of Goods Act—mistake—misrepresentation—fraud—illegality; assignment of contract, discharge of contract.

Second Term: Two independent short courses each of one hour a week: (a) Law of negotiable instruments; (b) Law of Bankruptcy.

Third Term: Two independent courses as in the second term: (a) Industrial Law or Law as to Employers and Employed; (b) Company Law.

Special fee for the session, £3 3s.

DEGREES IN LAW

1. The degrees in Law shall be :

Ordinance

Bachelor of Laws (LL.B.)

Master of Laws (LL.M.)

Doctor of Laws (LL.D.).

Degree of Bachelor of Laws

2. All candidates for the degree of Bachelor of Laws shall be required to have passed the Matriculation examination, except those who may be exempted therefrom,¹ and thereafter to have pursued approved courses of study for not less than three academic years.

3. The complete course of study for the degree of Bachelor of Laws shall be divided into two parts, called respectively the Intermediate course and the Final course.

4. Every candidate shall be required to pass two examinations, the Intermediate and the Final.

5. The Intermediate and Final examinations shall ordinarily be held in June of each year.

6. All candidates shall be required, before presenting themselves for the Intermediate or Final examination, to furnish to the Registrar certificates testifying that they have regularly attended the prescribed courses of study in each of the subjects which they offer at the examination.

Intermediate Course and Examination

7. Every candidate shall be required, after passing the Matriculation examination, or after obtaining exemption therefrom, to attend during one academic year approved courses of study, and to pass in each of the following subjects :

- i. Roman Law
- ii. Elements of English Law
- iii. The Law and Custom of the English Constitution

¹ For particulars of this examination, and conditions of exemption, apply to the Secretary, Joint Matriculation Board, 24, Dover Street Manchester

- iv. Any subject included in the course for the Intermediate examination for the Ordinary degree of B.A. or B.Com.

Provided that candidates who are already graduates of this or any other University within the United Kingdom shall not be required to attend classes or to be examined in iv.

Detailed subjects of study and of examination

Regulations

ROMAN LAW :

The *Institutes* of Justinian, edited by Moyle. The subjects of Intestate Succession and Procedure are to be studied in outline only. Students must, from the notes in the text book and from lectures, make themselves familiar with the general history of Roman Law, and particularly with the state of the law in the time of Gaius. Gneist's *Institutionum Syntagma*.

ELEMENTARY ENGLISH LAW :

Stephen's *Commentaries*, Vols. i, ii, iii.

LAW AND CUSTOM OF THE ENGLISH CONSTITUTION :

Dicey's *Law of the Constitution* ; Anson's *Law of the Constitution*, Part I.

OTHER SUBJECTS :

See the Regulations for Intermediate courses for the Ordinary degree of B.A. and the degree of B.Com.

Final Course and Examination

- Ordinance 8. Every candidate shall be required to attend during two academic years one or other of the following courses of study, and to pass in each of the subjects of the selected course :

Course I.

- i. Roman Law
- ii. Jurisprudence
- iii. Public or Private International Law.

An essay paper shall be set at the final examination for all candidates taking this course.

Course II.

- i. Property, Real and Personal (including Conveyancing)
- ii. Equity (including Company Law)

- iii. Common Law (including Criminal Law and Bankruptcy)
- iv. Evidence and Procedure
- v. Jurisprudence.

Detailed subjects of study and of examination
Course I

Regulations

ROMAN LAW :

The General History of Roman Law, including the History of the Roman Constitution ; the Principles of Roman Law as stated in the *Institutes* of Gaius and Justinian ; a selected Title or selected Titles of the *Digest*. (Title selected for 1911-12 : Book VII., Tit. I. De Usufructu.)

The following books are recommended (not prescribed) in order to show the scope of the course :

History of Roman Law : Roby's *Introduction to the Study of the Digest* ; Sohn's *Institutes of Roman Law* ; Muirhead's *Law of Rome*.

The Principles of Roman Law : Gaius, edited by Poste ; Justinian, edited by Moyle ; Roby's *Roman Private Law* ; Gneist's *Syntagma*.

JURISPRUDENCE. (Historical and Analytical) :

The following books are recommended (not prescribed) in order to show the scope of the course :

Austin's *Jurisprudence* ; Clark's *Practical Jurisprudence* ; Markby's *Elements of Law* ; Holland's *Jurisprudence* ; Maine's *Ancient Law, Village Communities, Early History of Institutions*, and *Early Law and Custom* ; Salmond's *Jurisprudence*.

INTERNATIONAL LAW :

The following books are recommended (not prescribed) in order to show the scope of the course :

(a) PUBLIC : Lawrence's *Principles of International Law* ; Oppenheim's *International Law* ; Maine's *Lectures on International Law* ; Pitt Cobbett's *Leading Cases in International Law* ; Grotius's *De Jure Belli et Pacis* (edited by Whewell).

(b) PRIVATE : Westlake's *Private International Law* ; Dicey's *The Law of Domicile* ; Foote's *Private International Jurisprudence* ; The Reported Cases.

Course II

In this course it is not thought necessary to give more detailed information than that contained in the Ordinance.

N.B.—In 1912 the Intermediate and Final examinations will begin about June 10th. The latest date of entry and of payment of fees will be FRIDAY, MARCH 1st.

Degree of Master of Laws

Ordinance 1. The degree of Master of Laws may be conferred on payment of the proper fee upon registered Bachelors of Laws when of not less than one year's standing from the date of their graduation as Bachelors, subject to the conditions contained in the following paragraphs.

2. Bachelors of Laws who have obtained their degree by attendance at the classes of Course I and examination in the subjects of that Course shall be required to pass an examination in the subjects of Course II. Certificates of attendance on Course II shall not be required.

3. Bachelors of Laws who have obtained the degree by attendance at the classes of Course II and examination in the subjects of that Course, shall be required to pass an examination in the subjects of Course I. Certificates of attendance in Course I shall not be required.

Regulation The names of candidates who have passed the examination for the degree of Master of Laws shall be arranged in alphabetical order without distinction of classes.

N.B.—The Court has ordained that this Ordinance shall not apply to persons who have graduated as Bachelors of Law prior to the institution of the LL.M. degree and the consequent change in the Ordinance for the LL.D. degree. Such Bachelors may proceed to the LL.D. degree without having previously graduated as Masters of Law.

Degree of Doctor of Laws

Ordinance 1. The degree of Doctor of Laws shall be conferred by the University upon registered Masters of Laws of the University who shall be deemed by the Senate, after considering a report from one or more of the Boards of Faculties, to have distinguished themselves by special research or learning.

Provided that the Senate may, in such cases as it shall think fit, after considering a report from one or more of the Boards of Faculties, also require candidates to pass such an examination as it may from time to time determine.

2. A Master of Laws of the University may make application for the degree of Doctor of Laws in the sixth or any subsequent year from the date of his admission to the Bachelor's degree.

3. Such application shall be made in writing to the Registrar, and shall contain a full statement of the grounds on which the claim for the degree is based, together with one or more copies of any thesis, whether in print or in manuscript, which the applicant may desire to submit in support of the application.

4. If the application be approved by the Senate, the degree may be conferred at the expiration of not less than six years from the date of admission to the Bachelor's degree.

N.B.—In 1912 the latest date of entry and of payment of fees will be FRIDAY, MARCH 1st. The LL.M. examination will begin on Monday, June 10th, and the LL.D. examination, if required, will begin on the same date.

THE COUNCIL OF LEGAL EDUCATION

Undergraduates who have completed two years of residence at the University are excused the deposit usually required by the Inns of Court. Undergraduates may keep their terms at any of the Inns of Court by dining in Hall any *three* days (in lieu of the six days ordinarily required) in each term.

The Matriculation examination of the Universities of Manchester, Liverpool, Leeds and Sheffield is accepted in lieu of the Preliminary examination of the Inns of Court.

Graduates in Law of the University may be excused the examination in Roman Law of the Council of Legal Education.

In addition to Roman Law, the following are the subjects in which a satisfactory examination must be passed before the certificate of fitness for Call to the Bar required by the four Inns of Court can be obtained :

1. Constitutional Law and Legal History.
2. Evidence, Procedure, and Criminal Law.
3. Law of Real and Personal Property.
4. Law of Contracts and Torts.
5. Principles of Equity.

Students have the option of passing the examination in Roman Law and in Constitutional Law, or in either of those subjects, before they take the examination in the other subjects mentioned above.

THE LAW SOCIETY

The certificate of the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds and Sheffield is accepted by the Law Society in lieu of the Preliminary examination, provided Latin be one of the subjects taken.

Students who take the LL.B. degree before entering into articles are exempted from two years of service.

Graduates in Law of the University are excused the Intermediate examination of the Law Society.

The subjects prescribed by the Law Society for its Intermediate examination are Stephen's *Commentaries on the Laws of England*, (latest edition); *Book-keeping, a Lawyer's Manual of Book-keeping*, by H. Hughes Onslow and *A Guide to Trust Accounts*, by Pretor W. Chandler, both published by Butterworth & Co., 11 and 12, Bell Yard, Temple Bar, E.C.

The subjects prescribed by the Law Society for its Final examination are:

1. The Principles of the Law of Real and Personal Property and the Practice of Conveyancing.
2. The Principles of Law and Procedure in matters usually determined or administered in the Chancery Division of the High Court of Justice.
3. The Principles of Law and Procedure in matters usually determined or administered in the King's Bench Division of the High Court of Justice, and the Law and Practice of Bankruptcy.
4. The Principles of Law and Procedure in matters usually determined or administered in the Probate, Divorce, and Admiralty Division of the High Court of Justice; Ecclesiastical and Criminal Law and Practice; and Proceedings before Justices of the Peace.

DEPARTMENT OF LAW

Supported by the Yorkshire Board of Legal Studies

Professor PHILLIPS

Dr. CHAPMAN Mr. OWEN Mr. LOCKWOOD

The Law Department of the University of Leeds was founded by the Yorkshire Board of Legal Studies, assisted by the Law Society, in 1899, and is intended to afford systematic instruction throughout the academic year to students preparing for

1. The examinations for the degrees in Law of the University of Leeds,
2. The examinations of the Council of Legal Education, preparatory to call to the Bar, and
3. The examinations of the Law Society, qualifying for admission to practice as a Solicitor.

Most of the classes will also be found useful to candidates for the Law degree of the University of London.

SYLLABUS OF LECTURE COURSES

In connection with the lecture courses announced in the following pages, tutorial classes are held for which no additional fees are charged. Special tutorial classes are also provided for students preparing for the Intermediate or Final examinations of the Law Society, particulars of which are given on page 240.

In cases where the hours of the lectures and classes are not stated, arrangements will be made in accordance with the requirements of individual students and the convenience of the majority.

Professor Phillips would be glad to confer with Law students on all questions concerning their examinations, and to render them such assistance as might be in his power.

Composition Fees

Students pursuing the requisite course of study for a University degree in Laws will be charged the following composition fees :

- (a) £9 9s. for the Intermediate course, for the session.

- (b) £15 15s. for the Final course, to be paid at the beginning of the first year of the Final course.

Students pursuing the requisite course of study for the Final examinations of the Law Society will be charged a composition fee of £15 15s., to be paid at the beginning of the first year of the Final course.

On payment of the composition fee of £15 15s. students may enter without further payment upon both the Final LL.B. course and the Final course for the Law Society's examinations.

Students have the option of paying the separate fees of the classes selected. Candidates for the examinations of the University of Leeds must, however, comply with the University regulations as to the number of hours of weekly attendance to be given to the prescribed courses.

DEGREE OF BACHELOR OF LAWS

The courses are arranged so as to give preparation for the Intermediate examination in one session, and for the Final examination in two sessions.

Intermediate Course

1. Roman Law

PROFESSOR PHILLIPS

Mondays, at 2 p.m., throughout the session.

Fee for the course, £2 2s.

2. Elements of English Law

DR. CHAPMAN

Mondays and Thursdays, at 4 p.m., throughout the session.

Fee for the course, £3 3s.

3. The Law and Custom of the English Constitution

PROFESSOR PHILLIPS

Mondays, at 3 p.m., throughout the session.

Fee for the course, £2 2s.

4. Other Subjects

For particulars of classes in Greek, Latin, French, German, English Literature, Ancient History, Modern History, Logic, Mathematics, Physics, Chemistry, Zoology, Botany, Geology, Economics, and Economic Geography, see Courses in Arts and Science and Commerce.

Final Course

Course I

1. Roman Law

Professor PHILLIPS

Mondays and Fridays, at 10.30 a.m., throughout the session.

Fee for the course, £3 3s.

2. Jurisprudence

Professor PHILLIPS

Mondays and Fridays, at 11.30 a.m., throughout the session.

Fee for the course, £3 3s.

3. Public International Law

Professor PHILLIPS

Tuesdays and Fridays, at 2 p.m., throughout the session.

Fee for the course, £3 3s.

Course II

1. Real and Personal Property

Dr. CHAPMAN

A course of lectures of one hour a week throughout the session will be given at times to be arranged.

Fee for the course, £2 2s.

2. Equity (including Company Law)

Dr. CHAPMAN

A course of lectures on the Principles of Equity, of one hour a week throughout the session, will be given at times to be arranged.

Fee for the course, £2 2s.

3. (a) Common Law

Professor PHILLIPS

During the session 1911-12, a course of lectures on the Law of Contract, of one hour a week throughout the session, will be given at times to be arranged, to be followed in the next session by a course on the Law of Torts.

Fee for each course, £2 2s.

3. (b) Criminal Law

Professor PHILLIPS

A course of lectures on Criminal Law and Practice, of one hour a week during the session, will be given at times to be arranged.

Fee for the course, £2 2s.

3. (c) Bankruptcy

Professor PHILLIPS

A course of lectures on the Law and Practice of Bankruptcy, of one hour a week during the first and second terms, will be given at times to be arranged.

Fee for the course, £1 11s. 6d.

4. Evidence and Procedure

Dr. CHAPMAN

A course of lectures on Legal Evidence and Procedure, of one hour a week throughout the session, will be given at times to be arranged.

Fee for the course, £2 2s.

5. Jurisprudence

Professor PHILLIPS

A course of lectures on Jurisprudence of one hour a week throughout the session, will be given at times to be arranged.

Fee for the course, £2 2s.

**EXAMINATIONS OF THE COUNCIL OF
LEGAL EDUCATION**

Classes 1 and 3 in the Intermediate course for the degree will prepare also for the examinations of the Council of Legal Education.

EXAMINATIONS OF THE LAW SOCIETY

Intermediate Examination

The Elements of English Law

DR. CHAPMAN

Mondays and Thursdays, at 4 p.m. throughout the session.

Subject: Stephen's *Commentaries on the Laws of England*.

This class will be mainly tutorial.

Fee for the course, £3 3s.

Classes on Criminal Law, as contained in Stephen's *Commentaries*, will be held in August and September at times to be arranged.

Fee for the course, £1 11s. 6d.

Bookkeeping

MR. SHAW

A course of classes in Book-keeping, of one hour a week throughout the session will be held at times to be arranged. The lectures will be based on the works prescribed by the Incorporated Law Society for their Intermediate examination.

Fee for the course, £1 11s. 6d.

Final Examination

Real and Personal Property

DR. CHAPMAN

A course of classes of one hour a week throughout the session will be held at times to be arranged.

Fee for the course, £2 2s.

Conveyancing

DR. CHAPMAN

A class for tuition in the practice of Conveyancing will be held once a week throughout the session. The time of meeting will be arranged.

Fee for the class, £2 2s.

Common Law

Professor PHILLIPS

During the session 1911-12, a course of classes on the Law of Contract, of one hour a week throughout the session, will be held at times to be arranged, to be followed in the next session by a course on the Law of Torts.

Fee for each course, £2 2s.

Equity

DR. CHAPMAN

A course of classes in the Principles of Equity, of one hour a week throughout the session, will be held at times to be arranged.

Fee for the course, £2 2s.

Bankruptcy

Professor PHILLIPS

Classes will meet once a week during the first and second terms at times to be arranged.

Fee for the course, £1 11s. 6d.

Criminal Law

Professor PHILLIPS

Classes will meet once a week during the session at times to be arranged.

Fee for the course, £2 2s.

Company Law

Professor PHILLIPS

A course of lectures on the Law and Practice of Joint Stock and other Companies will be given during the first and second terms. The class will meet once a week, at times to be arranged.

Fee for the course, £1 11s. 6d.

Equitable Procedure

DR. CHAPMAN

A class for tuition in the practice of the Chancery Division of the High Court of Justice will be held once a week during the third term, at an hour to be arranged.

Fee for the course, £1 1s.

Legal Evidence and Procedure

DR. CHAPMAN

A course of lectures on the Law of Evidence and Procedure in the King's Bench Division of the High Court of Justice will be given throughout the session. The class will meet once a week, at an hour to be arranged.

Fee for the course, £2 2s.

Probate, Divorce, and Admiralty Law

DR. CHAPMAN

A class for tuition in the principles of Law and Procedure in Probate, Divorce, Admiralty, and Ecclesiastical Cases will be held once a week throughout the session, at an hour to be arranged.

Fee for the course, £2 2s.

Law of Partnership

PROFESSOR PHILLIPS

Classes will meet once a week during the third term.

Fee for the course, £1 1s.

Ecclesiastical Law

DR. CHAPMAN

Arrangements will be made, if desired, for a class for tuition in the principles of Ecclesiastical Law.

Negotiable Instruments

PROFESSOR PHILLIPS

Classes will meet once a week during the third term.

Fee for the course, £1 1s.

Mohammedan and Romano-Dutch Law

PROFESSOR PHILLIPS

Arrangements will be made, if desired, for a class for tuition in the principles of Mohammedan and Romano-Dutch Law.

Tutorial Classes

In the case of students who are about to present themselves for the Intermediate or Final examination of the Law Society, there will be held during each term Tutorial Classes, the work of which will be revisionary. These classes will be open only to such students as have attended, or are attending, ordinary classes in the Law Department of the University, and have obtained the sanction of the Head of the Department. The Tutorial Classes of each term will be complete in themselves.

Fee for the classes, £2 2s. per term.

N.B.—This fee is not included in any composition fees.

Long Vacation Courses

Courses will be held during the months of August and September in Elementary Criminal Law, Probate, Ecclesiastical Law, and the subjects of the Intermediate and Final Tutorial Classes. The Intermediate and Final Tutorial Classes will each be held three hours a week, the course in Elementary Criminal Law two hours a week, and the courses in Probate and Ecclesiastical Law each one hour a week.

	£	s.	d.
*Fee for the Intermediate Tutorial Class ...	2	2	0
*Fee for the Final Tutorial Class ...	2	2	0
Fee for the Course in Elementary Criminal Law ...	1	11	6
Fee for the Course in Probate Law ...	1	1	0
Fee for the Course in Ecclesiastical Law ...	1	1	0

*N.B.—These fees are not included in any Composition fee.

Students reading for the Examinations of the Law Society and other Professional examinations will be admitted to the Department in any term or at the beginning of the above-mentioned courses, excepting that admission to the Tutorial Classes will be restricted to such students as have already attended, or are attending, ordinary classes.

SPECIAL CLASSES

Commercial Law

PROFESSOR PHILLIPS

Wednesdays and Fridays, at 3 p.m. throughout the session.

First term: The general principles of the law of contract; the conception of contract in English Law; doctrine of consideration; statute of frauds; sale of goods Act—mistake—misrepresentation—fraud—illegality; assignment of contract, discharge of contract.

Second term: Two independent short courses each of one hour a week. (a) Law of negotiable instruments; (b) Law of Bankruptcy.

Third term: Two independent courses as in the second term:—(a) Industrial Law or Law as to Employers and Employed; (b) Company Law.

Fee for the session, £3 3s.

Law of Landlord and Tenant

A course of lectures of one hour a week during one term will be given by Dr. Chapman at times to be arranged, on the Law of Landlord and Tenant.

This course is intended for students in the Agricultural department who propose to present themselves for the examinations of the Surveyors' Institution in Sub-Division I, "chiefly land agency."

Special fee for the course, 10s. 6d.

Beginning and Growth of the English Law

DR. CHAPMAN

A course of three *evening class* lectures on the Beginning and Growth of the English Law will be given in the first term, on alternate Fridays, at 8 p.m., beginning October 27, 1911, in the rooms of the Leeds Philosophical and Literary Society, Park Row.

Fee for the course, 2s. 6d.

LAW CLASSES AT HULL

MR. OWEN

MR. LOCKWOOD

During the first and second terms two lectures a week are given on Stephen's *Commentaries* preparatory for the Intermediate examination of the Law Society, and two lectures a week on certain subjects preparatory for the Final examination of the Law Society.

Fee for each course, £1 1s.

EXTENSION LECTURES IN LAW

Extension lectures in Law subjects may be arranged by Local Committees. For particulars see the special Prospectus of Extension lectures.

RAILWAY FARES

The Yorkshire Board of Legal Studies will pay half the 3rd Class Railway Fares of Articled Clerks coming from a distance to Leeds, to attend the Law classes at the University during the session 1911-12.

Applications for repayment of the amount expended should be sent in at the close of the session, addressed to the Treasurer, Herbert Denison, Esq., 10, East Parade, Leeds.

N.B.—Attention is directed to the fact that the University supplies courses on General Bookkeeping, Solicitors' Bookkeeping, and Trust Accounts, and that the books prescribed by the Law Society are used in this connection.

DEGREES IN SCIENCE

1. The degrees in Science shall be :
 Bachelor of Science (B.Sc.)
 Master of Science (M.Sc.)
 Doctor of Science (D.Sc.).

Ordinance.

DEGREE OF BACHELOR OF SCIENCE

2. The degree of Bachelor of Science shall be conferred either as an Ordinary degree or as a degree with Honours.
3. All candidates for the degree of Bachelor of Science shall be required to have passed the Matriculation examination, and thereafter to have pursued approved courses of study for not less than three academic years.

Ordinary Degree of Bachelor of Science

4. The complete course of study for the Ordinary degree of Bachelor of Science shall be divided into two parts, called respectively the Intermediate course and the Final course.
5. Every candidate shall be required to pass two examinations, the Intermediate and the Final.
6. The Intermediate and Final examinations shall ordinarily be held in June of each year. There shall also be a supplementary Intermediate examination in September, at which those candidates only may present themselves who have obtained the permission of the Senate.
7. Candidates who have failed at an Intermediate examination in June, and have obtained permission to present themselves at the following supplementary examination, may be excused such part of the supplementary examination as the combined examination committee, on report from the examination committee concerned, may determine.
8. All candidates shall be required, before presenting themselves for the Intermediate or Final examination, to furnish to the Registrar certificates testifying that they have regularly attended the prescribed courses of study, and performed the class exercises to the satisfaction of the Professor or Lecturer, in each of the subjects which they offer at the examination. Some modification of the amount

of attendance required may, in exceptional cases, be made by the Vice-Chancellor, on the recommendation of the head of the department concerned.

9. The proficiency of candidates in laboratory work may be determined by inspection of their laboratory note books and the consideration of terminal or sessional reports from their laboratory teachers. Candidates may also be called upon to undergo a special practical examination at the Intermediate and Final stages of the degree course.

It shall always be in the power of the External Examiner to impose a practical or *vivâ voce* examination on such occasions as he may think desirable.

Intermediate Course and Examination

10. Every candidate shall be required, after passing the Matriculation examination, to attend during not less than one academic year approved courses of study in three subjects, viz. :

Physics

Two of the following :

Mathematics

Chemistry

Zoology

Botany

Geology,

and to pass in each of the subjects selected.

Candidates who propose to take an Applied Science (see section 15) in the Final course must pass in the subjects of the Intermediate course specified in section 20.

11. Every candidate is further required, at some time during his course, to attend an approved course of study and pass in an additional subject at the Intermediate standard, selected from the following: Greek, Latin, French, German, English Literature, Ancient or Modern History, Logic, Economics, Economic Geography, Mathematics, Chemistry, Zoology, Botany, Geology. In the case of candidates taking an Applied Science as a principal subject in the Final course (section 20 below), this list is increased by the addition of Applied Mechanics and General Engineering.

12. A descriptive essay relative to the scientific or technical work of the candidates will be set as part of the Intermediate examination, and will be examined by the Examiners in English in co-operation with the Examiners in the scientific department concerned, and in the event of a student failing in this portion of the Intermediate examination, he shall be permitted to take it again at any subsequent Intermediate examination.

N.B.—In 1912 the Intermediate and Final examinations in June will begin on Monday, June 10th. The latest date of entry and of payment of fees will be FRIDAY, MARCH 1st.

Detailed subjects of study and of examination

The scope of the work required may be understood from the following references to the courses of study preparing for this examination (see pages 282, etc.). The amount of laboratory work mentioned below is that ordinarily required. It may be varied on special grounds with the sanction of the Senate. Regulations.

MATHEMATICS: Intermediate Course.

PHYSICS:

CHEMISTRY:

ZOOLOGY:

BOTANY:

GEOLOGY:

} Intermediate Course.
Laboratory work, three hours a week.

APPLIED MECHANICS: The work covered by Part I of Engineering Course I, together with graphical constructions, strength of materials, transmission of power and mechanics of machines as given in Engineering Course VI.

GENERAL ENGINEERING: Course II A, with Engineering Drawing.

GREEK, LATIN, FRENCH, GERMAN, ENGLISH LITERATURE, ANCIENT OR MODERN HISTORY, LOGIC, ECONOMICS, ECONOMIC GEOGRAPHY: The same as for Intermediate Arts.

Candidates who have passed the Intermediate examination for the degree of Bachelor of Science in Chemistry, Physics, Zoology and Botany will, on payment of the required additional fee, be regarded as having passed the First examination for the degrees of Bachelor of Medicine and Bachelor of Surgery.

Candidates who have not passed in all the above four subjects will be required to pass at the Intermediate examination or at the First examination in such subjects as they have omitted before being regarded as having passed the First examination for the degrees of Bachelor of Medicine and Bachelor of Surgery.

The Zoology and Botany portions of the subject Biology of the First examination shall for this purpose be considered separate subjects.

Final Course and Examination

Ordinance 13. Every candidate will be required to attend approved courses of study either in two principal subjects, or in one principal subject and two subsidiary subjects, provided that the same subject shall not be taken both as a principal and a subsidiary subject.

14. The course of study in each principal subject shall extend over at least two years beyond the Intermediate standard, and the course of study in a subsidiary subject shall extend over at least one year beyond the Intermediate standard.

Principal Subjects

15. The principal subjects shall be selected from the following lists :

Pure Sciences :

Mathematics
Physics
Chemistry
Zoology
Botany
Physiology
Geology.

Applied Sciences :

Mechanical Engineering
Civil Engineering
Electrical Engineering
Mining Engineering
Gas Engineering
Fuel and Metallurgy

Agriculture
Applied Chemistry (Colour Chemistry and
Dyeing)
Applied Chemistry (Chemistry of Leather
Manufacture).

Every candidate taking Physics as a principal subject is required to have passed in Mechanics at the Matriculation examination, or to satisfy the Professor of Physics that he possesses an adequate knowledge of the subject.

In the event of Physiology being chosen as a principal subject, the second principal subject or the two subsidiary subjects shall be chosen from among the following: Physics, Chemistry, Zoology, Botany. In any case, six months' instruction in Human Anatomy will be required.

Every candidate taking an Applied Science as a principal subject is required to pursue one of the courses specified in section 20.

Subsidiary Subjects

16. The subsidiary subjects shall be selected from the following list:

Mathematics P (Pure)
Mathematics PA (Pure and Applied)
Physics
Chemistry
Zoology
Botany
Physiology
Geology
Human Anatomy
Bacteriology
Education (including the teaching of
Elementary Science).

Mathematics P and PA cannot be taken together as subsidiary subjects.

17. The following subjects shall rank as subsidiary subjects in connection with courses where Mechanical or

Civil or Electrical or Mining Engineering is taken as a principal subject :

Mechanical Engineering
Civil Engineering
Electrical Engineering
Mining Engineering.

18. The course of study in the subsidiary subjects may be taken either in the first or second year of the Final course.

19. Candidates who have attended, during the first year of their Final course, the prescribed course of study in a subsidiary subject, may present themselves in June of that year for examination in such subsidiary subject. When Education is taken as a subsidiary subject, part of the examination may be taken at the end of each of the two years of the Final course. Candidates who fail to satisfy the examiners in such parts of the Final examination as they have taken at the end of the first year of their Final course shall be required to repeat this part of the examination at a subsequent June examination.

Courses for candidates taking an Applied Science

20. Candidates selecting an Applied Science as a principal subject are required to attend courses of study and to present themselves for examination in definite subjects, as specified below :

Mechanical Engineering :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Mechanical Engineering ; subsidiary subjects, Mathematics, and either Physics or Civil or Electrical or Mining Engineering, but in any case the candidate shall produce a certificate of having satisfactorily attended a prescribed course in Physics.

Civil Engineering :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Civil Engineering ; subsidiary subjects, Mathematics, and either Geology or Mechanical or Electrical or Mining Engineering, but in any case the candidate shall produce a certificate of having satisfactorily attended a prescribed course in Geology.

Electrical Engineering :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Electrical Engineering ; subsidiary subjects, Mathematics, and either Physics or Mechanical or Civil or Mining Engineering, but in any case the candidate shall produce a certificate of having satisfactorily attended a prescribed course in Physics.

Mining Engineering :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Mining Engineering ; subsidiary subjects, two of the following : Mathematics, Geology, Mechanical, or Electrical Engineering, but candidates shall produce certificates of having satisfactorily attended prescribed courses of study in each of these four subjects.

Gas Engineering :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate Standard ; Applied Mechanics.

Final—Principal subject, Gas Engineering ; subsidiary subjects, Chemistry and Engineering.

Fuel and Metallurgy :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, Applied Mechanics.

Final—Principal subject, Fuel and Metallurgy ; subsidiary subjects, Chemistry and Mechanical Engineering.

Agriculture :

Intermediate—Physics, and two of the following : Chemistry, Zoology, Botany, Geology ; together with an additional subject at Intermediate standard (see section 11).

Final—Agriculture, as principal subject, together with one of the pure sciences specified under section 15 above as the second principal subject, or two of the pure sciences specified under section 16 as subsidiary subjects.

Applied Chemistry (Colour Chemistry and Dyeing) :

Intermediate—Mathematics, Physics, and Chemistry ; additional subject at Intermediate standard, General Engineering.

Final—Two principal subjects, viz. : Colour Chemistry and Dyeing, and Chemistry.

Candidates presenting Applied Chemistry (Colour Chemistry and Dyeing) may not present this subject, except with the special permission of the Senate, until the end of the fourth year of study. Such candidates may take the examination in Chemistry at the end of the second year.

Applied Chemistry (Chemistry of Leather Manufacture) :

Intermediate—Physics, and two of the following : Mathematics, Chemistry, Zoology, Botany, and an additional subject at Intermediate standard (see section 11).

Final—Two principal subjects, viz. : Chemistry of Leather Manufacture, and Chemistry.

Detailed subjects of study and of examination

Regulations. In the Final examination a paper will be set containing passages of French and German for translation into English, relating to the principal subject or subjects of a candidate's degree course. All candidates will be required to take this paper, and credit will be given for correct renderings of such passages. In the case of candidates who have passed neither in French nor in German at the

Matriculation examination, and who have passed neither in French nor in German as an additional subject at the Intermediate standard it shall be obligatory to satisfy the Examiners in the translation of one of the aforesaid passages from either French or German. In the case of students pursuing a Degree Course for Colour Chemistry, this paper must be presented at the examination held at the end of the third year of study; students, however, who fail in this part of the examination, may present the subject again in the further examination held at the end of the fourth year.

The scope of the work required may be understood from the following references to the courses of study preparing for this examination (see pages 282 etc.) The amount of laboratory work mentioned below is that ordinarily required. It may be varied on special grounds, with the sanction of the Senate.

I. Principal Subjects, studied for Two Years

MATHEMATICS: Courses F1, F2, and F3.

PHYSICS: Courses F1 and F2. Laboratory work, six hours a week for two sessions.

CHEMISTRY: *Three* of the Courses F1, F2, F3, H1 and H3. Laboratory work, twelve hours a week for two sessions.

ZOOLOGY: Course F1 (*A* and *B*). Laboratory work, nine hours a week for two sessions.

BOTANY: Course F1 (*A* and *B*). Laboratory work, six hours a week for two sessions.

PHYSIOLOGY: Courses I, II, and IV.

GEOLOGY: Courses F1 and F2, and *one* of courses F3, F4, and F5. Laboratory work, six hours a week for two sessions, together with an approved course of Field Geology.

MECHANICAL ENGINEERING: Courses I, VI, VII, VIII, VIII a, VIII b, and IX.

CIVIL ENGINEERING: Courses I, III, IV, VI (the parts relating to graphical constructions, strength of materials, air, transmission of power, and hydraulics), VII (the parts relating to hydraulics and compressed air), VIII, VIII a, VIII b, and IX.

ELECTRICAL ENGINEERING: Courses I, II, III, and IV. Laboratory work, nine hours a week for two sessions.

MINING ENGINEERING: Courses I and II. Practical work, fifteen hours a week for one session.

GAS ENGINEERING: Fuel and Metallurgy courses I, II, and III, together with the special course in By-Product Coking and on the Manufacture of Coal Gas. Laboratory work, six hours a week in the second year, and twenty-four hours a week in the third year.

FUEL AND METALLURGY: Courses I, II, IV (*A* and *C* or *B* and *C*) together with the special course on By-Product Coking. Laboratory work, six hours a week in the second year, and twenty-four hours a week during the third year.

AGRICULTURE: General Agricultural courses, and special courses in *two* of the following:—Agricultural Chemistry, practical work, six hours a week for four terms; Agricultural Botany, practical work, thirty-six hours; Agricultural Zoology, practical work, thirty-six hours; Agricultural Geology, practical work, thirty-six hours; Veterinary Science; Surveying, practical work, thirty-six hours. Practical work equivalent to 130 days of six hours each at the Manor Farm, Garforth.

APPLIED CHEMISTRY (COLOUR CHEMISTRY AND DYEING): Courses I, III, IV, V, VI, and VII. Laboratory work, equal to twelve hours a week for two sessions.

APPLIED CHEMISTRY (CHEMISTRY OF LEATHER MANUFACTURE): Courses I, II, III, IV, V, and VI. Laboratory work, twelve hours a week for two sessions.

II. Subsidiary Subjects, studied for One Year

MATHEMATICS P (PURE): Course F2.

MATHEMATICS PA (PURE AND APPLIED): Courses F1 and F2.

PHYSICS: Course F1. Laboratory work, six hours a week for one session.

CHEMISTRY: Course F1 or F2 or F3. Laboratory work, twelve hours a week for one session.

ZOOLOGY: Course F1, either *A* or *B*. Laboratory work, six hours a week for one session.

BOTANY: Course F1, either *A* or *B*. Laboratory work, six hours a week for one session.

PHYSIOLOGY: Courses I and IV.

GEOLOGY: Course F1. Laboratory work, six hours a week for one session, together with an approved course of Field Geology.

HUMAN ANATOMY: Courses I (Part I) and II.

BACTERIOLOGY: Course I. Laboratory work, forty-five hours during one session.

EDUCATION: Parts I and II. Instruction in the method of teaching elementary science will be regarded as equivalent to laboratory attendance (three years' course).

MECHANICAL ENGINEERING: Courses VI, VIII, and IX.

CIVIL ENGINEERING : Portions of Courses III, IV, VIII, and VIII a.

ELECTRICAL ENGINEERING : Course Ia. Practical work, three hours a week for two terms.

MINING ENGINEERING : Course II. Practical work (either Mine Surveying, or Ore Dressing, or Assaying), six hours a week for one session.

Degree of Bachelor of Science with Honours

1. The degree of Bachelor of Science with Honours will be awarded in the following subjects : Ordinance.

Mathematics
Physics
Chemistry
Zoology
Botany
Physiology
Geology
Civil Engineering
Mechanical Engineering
Electrical Engineering
Mining Engineering
Gas Engineering.
Fuel and Metallurgy.
Applied Chemistry (Chemistry of Leather Manufacture)
Applied Chemistry (Colour Chemistry and Dyeing)
Agriculture.

2. Candidates will be required to present certificates of attendance upon approved courses of study extending over three or four years, as defined under the regulations for each Honours School. Such certificates of attendance shall only be granted when the candidate has regularly attended to the work of the classes and has acquitted himself satisfactorily at the class examinations.

3. Candidates for admission to an Honours examination will be required to have passed the Intermediate and the Final examinations as prescribed for the Ordinary Degree of B.Sc., subject to the qualifications contained in the Clauses 5 and 6 *infra*.

4. Such candidates as, prior to entrance to the University, declare their intention of proceeding to the degree of B.Sc. with Honours in one of the Honours Schools, may be admitted to the Intermediate examination prescribed in the Regulations for the Honours School in question, without previous attendance at the University. In this case, they will be required to pass simultaneously in all of the three subjects prescribed, and will also be required then or during their course of study to pass the examination in a fourth subject at the Intermediate stage as required by Ordinance.

5. Candidates who have not passed the Intermediate examination prior to entrance at the University shall be required to pursue courses of instruction in the subjects of the Intermediate examination (including the fourth, or additional subject) as prescribed in the regulations of the several Honours Schools, but (a) they shall not be required to pass simultaneously in all the subjects prescribed at the Intermediate examination, and (b) they shall be excused from presenting themselves at the Intermediate examination in any subject which they will subsequently offer at a higher standard.

6. All candidates shall be required to pursue courses of instruction in the subjects of the Final examination as prescribed in the regulations of the several Honours Schools, but they shall be excused from presenting themselves for examination in any subject which they will subsequently offer at a higher standard.

7. A special Honours examination, hereinafter called the Honours examination, shall be held in the subjects of the Honours stage.

8. Candidates who shall present evidence satisfactory to the Senate that they are qualified to enter upon a course of research may receive permission to pursue such a course, and to offer a thesis of their work in place of part or the whole of the Honours examination; but no candidate shall be excused the whole of the Honours examination unless he has satisfied the examiners in the subject of his Honours School as a principal subject for the Ordinary degree, in addition to the one principal subject or two subsidiary subjects required for such degree.

Each application for the recognition of research work must be made to the Senate not later than the last day of the October preceding the Honours examination, together with a statement of the intended subject of research, and a summary of the course of work actually pursued must be sent in to the examiners not later than the first day of the May preceding the Honours examination.

Candidates whose thesis does not satisfy the examiners shall not receive the Honours degree, but may be recommended for the Ordinary degree.

9. Names of candidates who have passed the examination for the degree of Bachelor with Honours will be published in such form as to distinguish the Honours School in which severally they may have passed; the names of those who have passed in Honours being drawn up in three classes, and each class being arranged in alphabetical order.

10. Candidates who have not acquitted themselves so as to deserve Honours, but have reached the standard of the Ordinary degree, may be recommended for that degree.

11. Candidates who have passed the examination for the Ordinary degree of Bachelor of Science may (during the succeeding year or the two years immediately succeeding) proceed with the course of study in an Honours School.

12. Every candidate for the degree of Bachelor of Science with Honours shall be required to present himself for examination at the end of the third or fourth academic year from the time when he has entered upon one of the courses of instruction approved by the University for such degree, unless he shall present a medical certificate of illness satisfactory to the Senate. This examination shall ordinarily be held in June of each year.

13. Students who have passed the Final examination in any of the Honours Schools shall be admitted to the Final examination in any other Honours School after the expiration of one or two years, on presenting certificates of having attended, during the period in question, courses approved by the University, provided that in the said other Honours School candidates shall not present themselves for the examination more than two academic years after the

examination in Honours already passed by them, and also that no candidate be admitted to examination in any Honours School after a longer period than five years has elapsed since the date of his first entrance upon a prescribed course of study for an Honours School.

14. Candidates who have passed the Second M.B. examination may, with the sanction of the Senate, and on furnishing certificates of having during the academical year following such Second M.B. examination attended the third year's, or during the two academical years following such Second M.B. examination of having attended the second and third year's course approved by the University for one of its Honours Schools in Science, present themselves for examination for a B.Sc. degree with Honours in such school.

N.B.—In 1912 the Honours examination will begin on Monday, June 10th. The latest date of entry and of payment of fees for candidates presenting themselves for examination, will be FRIDAY, MARCH 1st. Candidates who have received permission to offer a thesis in place of part or the whole of the examination must make their entry and pay the prescribed fee not later than WEDNESDAY, MAY 1st. The thesis must be sent in to the examiners not later than FRIDAY, MAY 31st.

Prescribed Courses of Study

Regulations. The following regulations apply to candidates who have not passed the Intermediate examination before entering the University. Candidates who have already satisfied the requirements of that examination will be exempted from attendance at the Intermediate classes in the subjects in which they have passed. It should be noted that preparation for the additional Intermediate subject is not mentioned in the following schemes, as it may be taken at such time in the undergraduate course as is most convenient to the candidate.

Laboratory work will be required in each subject, except Mathematics. The amount required in each Honours subject will be prescribed by the Professor, with the sanction of the Board of the Faculties of Science and Technology. In the remaining subjects offered by candidates laboratory

work will also be required, the amount being that prescribed for such subjects at the Intermediate and Final stage of the Ordinary degree.

In the following regulations the words *Intermediate course* or *examination* and *Final course* or *examination* indicate respectively the Intermediate and the Final courses or examinations for the Ordinary degree of Bachelor of Science.

In the Final examination a paper will be set containing passages of French and German for translation into English, relating to the subject in which the candidate is presenting himself for Honours. All candidates will be required to take this paper, and credit will be given for correct renderings of such passages. In the case of candidates who have passed neither in French nor in German at the Matriculation examination, and who have passed neither in French nor in German as an additional subject at the Intermediate standard, it shall be obligatory to satisfy the Examiners in the translation of one of the aforesaid passages from either French or German.

The Courses set forth in the following schedules are those that will ordinarily be taken by Honours students, but they may be modified by the Vice-Chancellor in the case of any individual student on the recommendation of the head of the department concerned.

Mathematics¹

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

- (a) *Intermediate Examination* (together with additional subject and essay):

Mathematics, Physics, and *one* of the following, viz. : Chemistry, Zoology, Botany, Geology.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

- (b) *Final Examination* :

Physics as a second principal subject.

¹The standard for the Honours degree in this subject may be taken as equivalent to two years' study beyond that required for the Ordinary degree.

(c) Honours Examination.

Ten papers will be set on the following subjects :

PURE MATHEMATICS :

Pure Geometry, plane and solid
 Algebra
 Theory of Equations and Determinants
 Plane Trigonometry
 Spherical Trigonometry with simple applications to Astronomy
 Analytical Geometry of two and of three dimensions
 Elements of Projective Geometry
 Differential Calculus with applications to plane curves
 Integral Calculus
 Ordinary Differential Equations
 Partial Differential Equations of the first order
 Finite Differences.

APPLIED MATHEMATICS :

Dynamics of a particle
 Statics
 Attractions
 Dynamics of rigid bodies
 Hydrostatics
 Elementary Hydrodynamics
 Elementary Theory of Sound.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

THREE YEARS' COURSE.

First year : Mathematics F₂ and F₃, Physics Int., and *one* of the following, viz. : Chemistry Int., Zoology Int., Botany Int., Geology Int.

Second year : Mathematics H₁ and H₂, Physics F₁ and F₂.

Third year : Mathematics H₁ and H₂.

FOUR YEARS' COURSE.

First year : Mathematics Int. and F₁, Physics Int., and *one* of the following, viz. : Chemistry Int., Zoology Int., Botany Int., Geology Int.

Second year : Mathematics F₂ and F₃, Physics F₁ and F₂.

Third and Fourth years : Mathematics H₁ and H₂.

Physics

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

- (a) *Intermediate Examination* (together with additional subject and essay) :

Physics, Mathematics, and Chemistry.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

- (b) *Final Examination* :

Mathematics as a second principal subject.

- (c) *Honours Examination.*

Experimental and Theoretical Physics, requiring a knowledge of the Calculus, three papers.

One of the following :

Mathematical Physics, more advanced portions, one paper.

Physical Chemistry, one paper.

Technical Electricity, one paper.

Practical examination in the Physical laboratory extending over two days.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

THREE YEARS' COURSE.

First year : Physics Int. and F₁, Mathematics F₁ and F₂, Chemistry F₁.

Second year : Physics F₂ and H, Mathematics F₂ and F₃.

Third year : Physics H.

FOUR YEARS' COURSE.

First year : Physics Int., Mathematics Int. and F₁, Chemistry Int.

Second year : Physics F₁ and F₂, Mathematics F₂ and F₃.

Third and Fourth Years : Physics H.

Chemistry

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

- (a) *Intermediate Examination* (together with additional subject and essay):

Physics, Mathematics, and Chemistry.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

- (b) *Final Examination* :

Physics as a second principal subject,

or

Mathematics and Physics as subsidiary subjects.

- (c) *Honours Examination.*

Inorganic Chemistry, one paper

Organic Chemistry, one paper

Physical Chemistry, one paper

History of Chemistry and of Chemical Philosophy, one paper

One of the following optional subjects :

Electro-chemistry, one paper

Chemistry of Food and Drugs, one paper.

Colour Chemistry and Dyeing, one paper

Chemistry of Leather Manufacture, one paper

Fuel and Metallurgy, one paper

Physiological Chemistry, one paper.

Agricultural Chemistry, one paper

A branch of Physics, one paper

Mineralogy and Crystallography, one paper

Mechanical Engineering, one paper.

Practical examination in the laboratory, extending over three days.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

THREE YEARS' COURSE.

First year : Physics Int., Mathematics Int., Chemistry F1 or F2.

Second and Third years: Chemistry F₁ or F₂, F₃, and H₁, H₂, H₃, H₄, and the classes required for the optional subject, together with *either*

- (1) Mathematics F₂ and Physics F₁, *or*
- (2) Physics F₁ and F₂.

FOUR YEARS' COURSE.

First year: Physics Int., Mathematics Int., Chemistry Int.

Second and Third Years: Chemistry F₁, F₂, F₃, together with *either*

- (1) Mathematics F₂ and Physics F₁, *or*
- (2) Physics F₁ and F₂.

Fourth year: Chemistry H₁, H₂, H₃, H₄, and the classes required for the optional subject.

Zoology.

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

- (a) *Intermediate Examination* (together with additional subject and essay):

Zoology, Physics, and *one* of the following, viz.: Mathematics, Chemistry, Botany, Geology.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

- (b) *Final Examination:*

A second principal subject,

or

Two subsidiary subjects.

- (c) *Honours Examination:*

One or more of the subjects named below may be selected, or the candidate may propose other subjects for the approval of the Senate. The subjects must be sent in not later than the last day of the October preceding the examination. A summary of the course of study actually gone through must be sent in to the examiners during the following April.

The Honours examination may be taken in the same year as the Ordinary B.Sc., or a year later. It will extend over four days, one (or more) of which will be occupied with practical work. There will be a *viva voce* examination.

A thesis, founded upon original research, may be sent in either alone, or together with one or more special subjects for examination.

Subjects, one or more of which may be selected for an Honours course in Zoology :

- (a) The comparative anatomy, or general zoology, of some large and important group of animals.
- (b) Comparative embryology.
- (c) Palæontology, with special reference to some large and important group of animals.
- (d) Variation and Heredity.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

THREE YEARS' COURSE.

First year : Zoology Int., Physics Int., and *one* of the following, viz. : Mathematics Int., Chemistry Int., Botany Int., Geology Int.

Second year : Zoology F_I (A *or* B), together with courses in a second principal subject, *or* in two subsidiary subjects.

Third year : Zoology F_I (A *or* B), and Honours work in Zoology.

FOUR YEARS' COURSE.

First year : Zoology Int., Physics Int., and *one* of the following, viz. : Mathematics Int., Chemistry Int., Botany Int., Geology Int.

Second and third years : Zoology F_I (A *and* B), together with courses in a second principal subject, *or* two subsidiary subjects.

Fourth year : Honours work in Zoology.

Botany

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

- (a) *Intermediate Examination* (together with additional subject and essay) :

Botany, Physics, and *one* of the following, viz. : Mathematics, Chemistry, Zoology, Geology.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

(b) *Final Examination:*

A second principal subject,

or

Two subsidiary subjects.

(c) *Honours Examination.*

One or more of the subjects named below may be selected, or the candidate may propose other subjects for the approval of the Senate. The subjects must be sent in not later than the last day of the October preceding the examination. A summary of the course of study actually gone through must be sent in to the examiners during the following April.

The Honours examination may be taken in the same year as the Ordinary B.Sc., or a year later. It will extend over four days, one (or more) of which will be occupied with practical work. There will be a *viva voce* examination.

A thesis, founded upon original research, may be sent in either alone, or together with one or more special subjects for examination.

Subjects, one or more of which may be selected for an Honours course in Botany:

- (a) Special study of a selected group of plants
- (b) Ecology of a selected group
- (c) Cytology
- (d) Fossil Botany.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING
THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

THREE YEARS' COURSE.

First year: Botany Int., Physics Int., and *one* of the following, viz.: Mathematics Int., Chemistry Int., Zoology Int., Geology Int.

Second year: Botany FI (A *or* B) together with courses in a second principal subject *or* two subsidiary subjects.

Third year: Botany F1 (A or B), and Honours work in Botany.

FOUR YEARS' COURSE.

First year: Botany Int., Physics Int., and *one* of the following, viz: Mathematics Int., Chemistry Int., Zoology Int., Geology Int.

Second and Third years: Botany F1 (A and B) together with courses in a second principal subject or two subsidiary subjects.

Fourth year: Honours work in Botany.

Physiology

EXAMINATION PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

- (a) *Intermediate Examination* (together with additional subject and essay):

Physics, and *two* of the following, viz: Mathematics, Chemistry, Zoology, Botany, Geology.

This examination^a is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

- (b) *Final Examination:*

If a three years course is taken,

Two subsidiary subjects, selected from Physics, Chemistry, Zoology, Bacteriology, but *one* of the selected subjects must be *either* Physics or Chemistry.

If a four years' course is taken,

One principal subject, selected from Physics, Chemistry, Zoology.

- (c) *Honours Examination:*

Physiology, three papers

Practical examination in the laboratory, extending over two days.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

THREE YEARS' COURSE.

First year: Physics Int., and *two* of the following, viz.: Mathematics Int., Chemistry Int., Zoology Int., Botany Int., Geology Int.

Second year: Physiology I and II, together with *two* of the following, viz.:

- (1) Physics F₁
- (2) Chemistry F₁ or F₂ or F₃ or H₃
- (3) Zoology F₁ (A or B)
- (4) Bacteriology I

one of which shall be *either* Physics *or* Chemistry.

Third year: Honours work in Physiology.

FOUR YEARS' COURSE.

First year: Physics Int., and *two* of the following, viz.: Mathematics Int., Chemistry Int., Zoology Int., Botany Int., Geology Int.

Second and Third Years: Physiology I and II, together with *one* of the following, viz.:

- (1) Physics F₁ and F₂
- (2) Chemistry F₁, F₂, F₃, and H₃
- (3) Zoology F₁ (A and B).

Fourth Year: Honours work in Physiology.

As part of both the three years' and the four years' courses candidates will be required to have attended satisfactorily an approved course of instruction in Human Anatomy or in Comparative Anatomy.

Geology

In this school there are alternative schemes of study, Scheme A—Physical, and Scheme B—Biological.

SCHEME A (PHYSICAL)

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING
SCHEME A.

- (a) *Intermediate Examination* (together with additional subject and essay):

Geology, Physics, and *one* of the following, viz.:
Mathematics, Chemistry, Zoology, Botany.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

- (b) *Final Examination*:

If a three years' course is taken,

Chemistry as a second principal subject,

or

Physics and Chemistry as subsidiary subjects.

If a four years' course is taken,

Physics and Chemistry as subsidiary subjects.

- (c) *Honours Examination.*

Geology, two papers

Petrology, one paper

Elementary Mineralogy, one paper

A special paper on the subject of research selected by the candidate

Practical examination in the laboratory, extending over two days.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING
SCHEME A.

For full particulars of these lecture courses see Courses in Science set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

THREE YEARS' COURSE.

First year: Geology Int., Physics Int., and *one* of the following, viz.: Mathematics Int., Chemistry Int., Zoology Int., Botany Int.

Second and Third Years: Geology F₁, F₂, F₅, and H₁, with research, together with *either*

- (1) (a) Chemistry F₁ *or* F₂, *or* (b) Chemistry F₃, *or* (c) Chemistry H₃, and Physics F₁,

or

- (2) Chemistry F₁, F₂, F₃ and H₃.

FOUR YEARS' COURSE.

First year: Geology Int., Physics Int., and *one* of the following, viz.: Mathematics Int., Chemistry Int., Zoology Int., Botany Int.

Second and Third years: Geology F₁ and F₄, Physics F₁, Chemistry F₁ or F₂ or F₃ or H₃.

Fourth year: Geology F₅ and H₁, with research.

SCHEME B (BIOLOGICAL)

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING SCHEME B.

- (a) *Intermediate Examination* (together with additional subject and essay):

Geology, Physics, and *one* of the following, viz.: Mathematics, Chemistry, Zoology, Botany.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

- (b) *Final Examination*:

If a three years' course is taken,

Two subsidiary subjects, selected from Chemistry, Zoology, Botany.

If a four years' course is taken,

Zoology or Botany as a second principal subject,
or

Two subsidiary subjects, selected from Chemistry, Zoology, Botany.

- (c) *Honours Examination*:

Geology, one paper

Palæontology, one paper

Palæobotany, one paper

Special paper on the subject of research selected by the candidate

Practical examination in the laboratory, extending over two days.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING SCHEME B.

For full particulars of these lecture courses see Courses in Science set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

THREE YEARS' COURSE.

First year: Geology Int., Physics Int., and *one* of the following, viz.: Mathematics Int., Chemistry Int., Zoology Int., Botany Int.

Second year: Geology F₁ and F₂, together with *two* of the following, viz.:

- (a) Chemistry F₁ or F₂ or F₃ or H₃
- (b) Zoology F₁ (A or B)
- (c) Botany F₁ (A or B).

Third year: Geology F₅, with research.

FOUR YEARS' COURSE.

First year: Geology Int., Physics Int., and *one* of the following, viz.: Mathematics Int., Chemistry Int., Zoology Int., Botany Int.

Second and Third years: Geology F₁ and F₂, together with *either*

- (1) (a) Zoology F₁ (A and B), or (b) Botany F₁ (A and B),

or

- (2) *Two* of the following, viz.:
- (a) Chemistry F₁ or F₂ or F₃ or H₃
- (b) Zoology F₁ (A or B)
- (c) Botany F₁ (A or B).

Fourth year: Geology F₅, with research.

Mechanical EngineeringEXAMINATIONS PRESCRIBED FOR STUDENTS TAKING THIS
HONOURS SCHOOL.

- (a) *Intermediate Examination* (together with additional subject and essay):

Mathematics, Physics, Chemistry, Applied Mechanics.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

- (b) *Final Examination:*

Mathematics as a second principal subject.

(c) Honours Examination.

Graphics and Descriptive Geometry, one paper
 Strength and Elasticity of Materials, one paper
 General Hydraulics, one paper
 Thermodynamics and Theory of Heat Engines, one paper
 Dynamics of Steam Engines and Machinery, one paper
 Mechanics and Kinematics, one paper

¹ Pure Mathematics, two papers.

¹ Applied Mathematics, two papers.

Laboratory examination, two days.

A candidate's work done in the drawing office and the laboratory and the class examination results in Engineering during his three years' course will be taken into consideration.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science and Technology set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

'THREE YEARS' COURSE.

First year: Engineering I, Mathematics Int. and F₁, Physics Int., Chemistry Int.

Second year: Engineering VI, Mathematics F₂ and F₃, and Electrical Engineering Ia.

Third year: Engineering IV (Part I) and VII, Physics F₁ (second term only).

Civil Engineering

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

(a) Intermediate Examination (together with additional subject and essay):

Mathematics, Physics, Chemistry, Applied Mechanics.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

¹ i.e., Mathematics taken as the second principal subject.

(b) Final Examination :

Mathematics as a second principal subject.

(c) Honours Examination.

Graphics and Descriptive Geometry, one paper
 Strength and Elasticity of Materials, one paper
 General Hydraulics, one paper
 Theory of Complex Structures, one paper
 Surveying and Descriptive Engineering, one paper
 Water Engineering, Tidal and Railway Construction, one paper

¹ Pure Mathematics, two papers

¹ Applied Mathematics, two papers.

Laboratory examination, two days.

A candidate's work done in the drawing office and the laboratory, and the class examination results in Engineering during his three years' course will be taken into consideration.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science and Technology set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

THREE YEARS' COURSE.

First year: Engineering I, Mathematics Int. and F₁, Physics Int., Chemistry Int.

Second year: Engineering III and VI, Mathematics F₂ and F₃, and Geology F₁.

Third year: Engineering IV and VII, and Physics F₁ (second term only).

Electrical Engineering

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

(a) Intermediate Examination (together with additional subject and essay):

Mathematics, Physics, Chemistry, Applied Mechanics.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

¹ i.e., Mathematics taken as the second principal subject.

(b) Final Examination :

Mathematics as a second principal subject.

(c) Honours Examination.

Generation of Electrical Energy, one paper
Transformation of Electrical Energy, one paper
Distribution of Electrical Energy, one paper
Design of Electrical Appliances, one paper
Mechanical Engineering, one paper

Heat Engines, one paper

¹ Pure Mathematics, two papers

² Applied Mathematics, two papers.

Practical examination in Electrical Engineering, two days.

A candidate's work done in the Electrical and Mechanical Engineering Drawing Office and Laboratory and the class examination results in Electrical and Mechanical Engineering during his three years' course will be taken into consideration.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science and Technology set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

THREE YEARS' COURSE.

First year: Mathematics Int. and F₁, Physics Int., Chemistry Int., Engineering I.

Second year: Mathematics F₂ and F₃, Engineering VI and Electrical Engineering I.

Third year: ² Mathematics II, Physics F₁ (second term only), and Electrical Engineering II, III, and IV.

Mining Engineering

15. Honours in Mining Engineering will be awarded to candidates who, having obtained the Ordinary degree, with Mining Engineering as a principal subject, and being

Ordinance.

¹ i.e., Mathematics taken as the second principal subject.

² Non-degree students take this if they were unable to take Mathematics F₂ in the second year.

recommended as suitable to proceed with an Honours course, shall have spent one year in research or in the preparation of a thesis, attendance at the University during this fourth year not being compulsory. All candidates for Honours shall pass the same Mathematical examinations as if they had taken Mathematics as a principal subject, but no attendance on Mathematical courses other than that prescribed for Mining Engineering students proceeding to the Ordinary degree shall be required.

Gas Engineering: Fuel and Metallurgy

Ordinance. 16. Honours in Gas Engineering or Fuel and Metallurgy will be awarded to candidates who, having obtained the Ordinary Degree, with either Gas Engineering or Fuel and Metallurgy as a principal subject, and being recommended as suitable to proceed with an Honours Course, shall have spent one year in research, or in the preparation of a thesis on some industrial process, to the satisfaction of the examiners, attendance at the University during this fourth year not being compulsory.

Honours in Gas Engineering or Fuel and Metallurgy may also be conferred upon candidates, who, having graduated in Science at this or an approved University, with Chemistry or Engineering as a principal subject, shall have subsequently (1) completed the course and passed the examination required for the diploma in Gas Engineering or Fuel and Metallurgy; and (2) spent an additional year in research in the Department to the satisfaction of the examiners.

Applied Chemistry:

Colour Chemistry and Dyeing

Regulations. Honours in this subject will be awarded to candidates who, having completed the four years' course of study for the Ordinary degree, with Colour Chemistry and Dyeing as a principal subject, shall have shown competence in the special work for Honours prescribed at the Final examination.

**Applied Chemistry :
Chemistry of Leather Manufacture**

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING THIS
HONOURS SCHOOL.

- (a) *Intermediate Examination* (together with additional subject and essay) :

Physics, Chemistry, and *one* of the following, viz. :
Mathematics, Zoology, Botany.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

- (b) *Final Examination* :

Chemistry as a second principal subject.

- (c) *Honours Examination.*

Physics and Chemistry of Leather Manufacture, one paper.

Methods of Leather Manufacture, one paper.

Laboratory Methods, one paper.

Practical examination, three days.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING
THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science and Technology set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

FOUR YEARS' COURSE.

First year : Physics Int., Chemistry Int., and *one* of the following, viz. : Mathematics Int., Zoology Int., Botany Int.

Second and Third years : Physics F₁, Engineering II (A), Chemistry F₁, F₂, F₃, and H₃, and Chemistry of Leather Manufacture I, II, III, IV, V, and VI.

Fourth year : Honours courses *or* research in Chemistry of Leather Manufacture.

Agriculture

EXAMINATIONS PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

- (a) *Intermediate Examination* (together with additional subject and essay):

Physics, and *two* of the following, viz: Chemistry, Zoology, Botany, Geology.

This examination is subject to the provisions contained in clauses 4 and 5 of the Honours B.Sc. Ordinance.

- (b) *Final Examination*:

One of the pure sciences specified under section 15 of the Ordinary B.Sc. Ordinance as second principal subject,

or

Two of the pure sciences specified under section 16 of the Ordinary B.Sc. Ordinance as subsidiary subjects.

- (c) *Honours Examination.*

The examination will extend over two days, part of the time being occupied by a *viva voce* examination at the Manor Farm, Garforth.

LECTURE COURSES PRESCRIBED FOR STUDENTS TAKING THIS HONOURS SCHOOL.

For full particulars of these lecture courses see Courses in Science and Technology set forth in subsequent pages. An additional subject and an essay must also be taken at Intermediate standard.

FOUR YEARS' COURSE.

First year: Physics Int., and *two* of the following, viz: Chemistry Int., Zoology Int., Botany Int., Geology Int.

Second and Third years: the courses prescribed for candidates for the Final examination for the Ordinary degree who offer Agriculture as a principal subject, together with research work.

Fourth year: Honours work, with research. Candidates are required to present themselves at the end of the third year for the Final examination for the Ordinary degree.

The same rule shall apply to an Honours student as to a student reading for an Ordinary degree, viz., six months of practical work equivalent to 130 days of six hours each shall be spent at the Manor Farm, Garforth, after the Intermediate examination and before the completion of the third year. At the examination at the end of the third year the candidate for the Ordinary degree will be required to submit a report on an experiment he has himself conducted. The candidate for Honours will be required to submit an interim report on his special research.

DEGREE OF MASTER OF SCIENCE

I

1. The degree of Master of Science is conferred, on Ordinance. payment of the proper fee, upon registered Bachelors of Science, when of one year's standing from the date of their graduation as Bachelors, subject to the conditions contained in the following paragraphs.

2. Bachelors of Science who have graduated with Honours are not required to present themselves for any further examination for the degree of Master of Science.

3. Bachelors of Science who have obtained the Ordinary degree are required to satisfy the examiners in a further examination in *one* of the following subjects: Mathematics, Physics, Chemistry, Zoology, Botany, Physiology, Geology, Mechanical, Civil, Electrical, or Mining Engineering, Applied Chemistry (Colour Chemistry and Dyeing), Applied Chemistry (Chemistry of Leather Manufacture), Fuel and Metallurgy, Gas Engineering, and Agriculture. Certificates of attendance are not required.

4. The names of candidates who have passed the further examination for the degree of Master of Science are arranged in alphabetical order without distinction of classes.

5. Candidates who have prosecuted research, and who give satisfactory evidence thereof by the presentation of a thesis, may be excused part or the whole of the examination.

Each application for permission to present a thesis Regulations. must be made to the Senate not later than the last day of the October preceding the M.Sc. examination, together

with a statement of the intended subject of research; and the thesis must be sent in to the examiners not later than the last day of the May preceding the M.Sc. examination.

[N.B.—The phrase “in a further examination” in clause 3 of the Ordinance is interpreted by the Senate to mean that candidates shall only be allowed to present themselves in subjects already presented by them for the Final examination for the B.Sc. degree (Ordinary or Honours) or some subject cognate thereto. For example, a candidate who has presented himself in Pure Chemistry may present himself for the M.Sc. degree in any subject of Applied Chemistry, and *vice versa*, but in the departments of Applied Science special papers may be set or other tests applied to graduates who have not passed the Final examination for the B.Sc. degree in such Applied Sciences.]

II

Ordinance Graduates or persons who have passed the Final examination for a degree of other approved Universities shall, if they present evidence satisfactory to the Senate that they are qualified to pursue a course of advanced study or research, be permitted to enter the University and to become candidates for the degree of M.Sc., without taking the B.Sc. degree, after not less than two years of such advanced study or research. Such candidates shall be required to give evidence to the Senate at the end of the first year of their period of study that their work has been satisfactory, and at the end of their second year they shall be required to present a dissertation, and to satisfy such further test, if any, as the Senate shall deem expedient.

N.B.—In 1912 notice must be given and the fee must be paid not later than FRIDAY, MARCH 1st, by Bachelors of Science who have obtained the Ordinary degree and who intend to proceed to the Degree of M.Sc. The examination, if required, will begin on Monday, June 10th. Notice must be given and the fee must be paid a week before Degree Day, June 29th, by Bachelors of Science who have graduated with Honours and who intend to proceed to the Degree of M.Sc.

Examination

Regulations. MATHEMATICS:

Analytical Geometry, Plane and Solid, one paper
Differential and Integral Calculus, one paper
Dynamics and Statics of a Particle, one paper
Hydrostatics and Rigid Dynamics, one paper.

N.B.—The standard is represented by the papers numbered III, IV, V, and VI set at the examination for the Honours School of Mathematics.

PHYSICS :

Experimental Physics, including Chemical Physics, two papers
Experimental and Theoretical Physics requiring a knowledge of the
Differential Calculus and of the elements of the Integral
Calculus, one paper
Practical examination, one day.

CHEMISTRY :

Inorganic Chemistry, one paper
Organic Chemistry, one paper
One of the following optional subjects :
Physical Chemistry, one paper
History of Chemistry and of Chemical Philosophy, one paper
Electro-Chemistry, one paper
Chemistry of Food and Drugs, one paper
Colour Chemistry and Dyeing, one paper
Chemistry of Leather Manufacture, one paper
Fuel and Metallurgy, one paper
Physiological Chemistry, one paper
Agricultural Chemistry, one paper
A branch of Physics, one paper
Mineralogy and Crystallography, one paper
Mechanical Engineering, one paper
Practical examination, one day.

ZOOLOGY :

Zoology and Comparative Anatomy (including the more important
extinct forms) and Embryology, three papers
Practical examination, one day.

BOTANY :

Botany, three papers
Practical examination, one day.

PHYSIOLOGY :

Animal Physiology, three papers
Practical examination, one day.

GEOLOGY :

Either Geology and the elements of Mineralogy, three papers,
or Geology and Zoology, three papers
Practical examination, one day.

MECHANICAL ENGINEERING :

Dynamics of Machinery, one paper
Stress, Strain and Elasticity, one paper
Heat Engines and Thermodynamics, one paper
Hydraulics, one paper.

CIVIL ENGINEERING :

Surveying and Descriptive Engineering, one paper
Stress, Strain and Elasticity, one paper
Complex Structures, one paper
Hydraulics, one paper.

ELECTRICAL ENGINEERING :

Mechanical Engineering, one paper.

Electrical Engineering, two papers (embracing Generation, Transformation, Distribution and Design).

Practical examination, one day.

MINING ENGINEERING :

Mining (including Ore Dressing and Mine Surveying) three papers.

Practical examination, one day.

APPLIED CHEMISTRY (Chemistry of Leather Manufacture) :

Physics and Chemistry of Leather Manufacture, one paper.

Methods of Leather Manufacture, one paper.

Laboratory Methods, one paper.

Practical examination, three days.

APPLIED CHEMISTRY (Colour Chemistry and Dyeing) :

Chemistry of the Artificial and Natural Dyestuffs, one paper.

Practical examination, five days.

Or alternatively—

Presentation of thesis embodying original work in the subject of Colour Chemistry.

Viva voce examination upon thesis presented or upon matters cognate thereto.

Candidates who have not obtained their B.Sc. degree in Colour Chemistry as a principal subject are required to present themselves for the above theoretical and practical examination or such part thereof as the examiners may deem necessary.

AGRICULTURE :

Two papers, embracing Soils and Manures, Rotations and Permanent Grass, Live Stock and Feeding, Implements, and Agricultural Economics.

Practical Examination at the Manor Farm, Garforth.

GAS ENGINEERING :

Carbonisation Methods for Coal (Gas Manufacture and By-Product Coking Practice), one paper.

Gas Distribution, Lighting, and Heating, one paper.

Chemistry of Gases, one paper.

Practical examination, four days.

Candidates who have taken the ordinary B.Sc. without Engineering as a principal or subsidiary subject must also take a *fourth* paper in General Engineering.

FUEL AND METALLURGY :

Technology of Fuel, one paper.

The Metallurgy of some selected Metal or group of Metals, one paper.

Alloys, one paper.

Practical examination, four days.

Candidates who have taken the ordinary B.Sc. without Engineering as either a principal or a subsidiary subject must also take a fourth paper in General Engineering.

DEGREE OF DOCTOR OF SCIENCE

1. The degree of Doctor of Science is conferred by the University upon registered Masters of Science of the University who shall be deemed by the Senate, after considering a report from one or more of the Boards of Faculties, to have distinguished themselves by special research or learning. Ordinance.

Provided that the Senate may, in such cases as it shall think fit, after considering a report from one or more of the Boards of the Faculties, also require candidates to pass such an examination as it may from time to time determine.

2. A Master of Science of the University may make application for the degree of Doctor of Science in the sixth, or any subsequent year from the date of his admission to the Bachelor's degree.

3. Such application shall be made in writing to the Registrar and shall contain a full statement of the grounds on which the claim for the degree is based, together with one or more copies of any memoir, whether in type or in manuscript, which the applicant may desire to submit in support of the application.

4. If the application be approved by the Senate, the degree may be conferred at the expiration of not less than six years from the date of admission to the Bachelor's degree.

N.B.—In 1912 notice must be given and the fee must be paid not later than FRIDAY, MARCH 1st. The examination, if required, will begin on Monday, June 10th.

DIPLOMAS IN APPLIED SCIENCE AND TECHNOLOGY

Diplomas are granted by the University in the following subjects:

Civil Engineering
Mechanical Engineering
Electrical Engineering
Coal Mining
Fuel and Metallurgy
Gas Engineering
Dyeing

Leather Manufacture

Textile Industries: (1) Textile Design and Cloth Finishing;

(2) Woollen and Worsted Spinning; (3) Cloth Manufacture.
Textile Chemistry. [facture.

For general regulations affecting the award of Diplomas, see page 187.

A descriptive essay relative to the technical work of the candidates will be set as part of the Diploma examination, and will be examined by the Examiners in English in co-operation with the Examiners in the technical department concerned. Foreign students may be excused from presenting themselves for this essay on producing evidence of having received a satisfactory general education. All other students will be required to satisfy the Examiners in this essay.

In the Diploma examination there will be included, for translation into English, passages of French and German relating to the principal subject of a candidate's Diploma course, and credit will be given for correct rendering of such passages.

The Registrar will supply each candidate with a Diploma Course Record which he will be required to keep and to produce, prior to the Final examination, to the Professors and Lecturers concerned, and on other occasions when called for.

Each candidate will also be required to obtain on his Diploma Course Record each session the signatures of the respective Professors or Lecturers to certify that his work has been satisfactorily done, and that he has reached a satisfactory standard in the required examinations in each subject forming part of the course.

For other regulations affecting each several Diploma, see particulars of courses of study under the heading of the department concerned.

CITY AND GUILDS TECHNOLOGICAL EXAMINATIONS

The examinations of the City and Guilds of London Technical Institute are held in the University in April, May, or June every year. Students of the University and others are admitted to the examinations. Each candidate is

required, when entering his name for the examination with the Local Secretary, to pay to the City and Guilds Institute a fee of 1s. for each subject in which he desires to be examined. In some few subjects a higher fee is charged. Money prizes, medals, and certificates are awarded by the Institute. Among the subjects of examination, the following may be mentioned as specially suitable to the technical students of the University:—Coal Tar Products, Gas Manufacture, Iron and Steel Manufacture, Leather Tanning, Dyeing (Silk, Wool, and Cotton), Bleaching and Printing, Textile Fabrics (Spinning and Weaving), Electrical Engineering, Mechanical Engineering, Mine Surveying. To obtain a full certificate in any of the above-mentioned technological subjects candidates will be required to pass the Institute's examination in the Honours grade and also, in general, an examination in one or more of the Science and Art subjects included in the *Regulations* of the Board of Education, the subjects to be chosen from those most closely allied to the subject taken by the candidate. The Institute will accept in lieu of the examination by the Board of Education a certificate from the University stating that the candidate has attended approved courses of instruction at the University in the science subjects allied to the technological subject in which the full certificate is claimed, and has passed a satisfactory examination in such science subject. Candidates will also be qualified for the full technological certificate who pass the Preliminary examination as well as the Ordinary and Honours examinations (written and practical) in any technological subject for which such a full course is provided by the Institute. For further particulars see the programme of the Institute (price, post free, 1s.)

Entries for the next examination will be received by the Local Secretary, Mr. G. R. Brench, The University, Leeds, not later than Friday, March 1st, 1912.

Courses in Science

MATHEMATICS

Professor ROGERS

Mr. WATSON

LECTURE COURSES

I. First Year Course for Engineers

See page 331.

II. Second Year Course for Engineers

Mondays, Wednesdays, and Fridays, at 9.30 a.m.

Subjects: Graphical methods, differential and integral calculus.

Book recommended

Saxelby, *A Course in Practical Mathematics* (Longmans and Co, 6s. 6d.)

Int. Intermediate Course in Pure Mathematics

Mondays and Fridays, at 2 p.m.

Students reading for the Intermediate B.A. and B.Sc. examinations attend this course throughout the session.

Books recommended

Hobson and Jessop, *Elementary Trigonometry* (Cambridge)

Knott, *Four-figure Mathematical Tables* (Chambers, 4d.)

Gibson, *Introduction to the Calculus* (Macmillan, 3s. 6d.)

F1. Final Course in Applied Mathematics (Elementary)

Tuesdays and Thursdays at 11.30 a.m.

Subjects: Elementary statics, dynamics, and hydrostatics

Book recommended

Jessop, *Elements of Applied Mathematics* (Bell, 4s. 6d.)

F2. Final Course in Pure Mathematics

Mondays, Wednesdays, and Fridays, at 11.30 a.m.

Subjects: co-ordinate geometry, differential and integral calculus.

Students taking Mathematics (i) as principal subject (p. 251), (ii) as the subsidiary subject, entitled Mathematics P (p. 252), attend for all three hours; students reading for (i) Arts Courses (p. 164), (ii) science subsidiary course, entitled Mathematics PA (p. 252), attend on Mondays and Fridays only.

Books recommended

Lamb, *Infinitesimal Calculus* (Cambridge)

Smith, *Conic Sections* (Macmillan)

F3. Final Course in Applied Mathematics

Mondays, Wednesdays, and Fridays, at 9.30 a.m.

Subjects: Statics, dynamics, and hydrostatics Text Books will be recommended by the Professor at the beginning of the course.

H1. Honours Course in Pure Mathematics

A course of lectures of three hours a week in Pure Mathematics will be delivered to students reading for Honours in Mathematics. Hours of meeting will be arranged at the beginning of the session.

H2. Honours Course in Applied Mathematics

A course of lectures of three hours a week in Applied Mathematics will be delivered to students reading for Honours in Mathematics. Hours of meeting will be arranged at the beginning of the session.

PHYSICS

Chair endowed in 1884 by public subscription in memory of the
late Lord Frederick Cavendish, first President of the
Yorkshire College

Professor BRAGG

Mr. ALLEN

Mr. SHORTER

Mr. EDMONDS

Mr. PORTER

LECTURE COURSES**Int. Intermediate Course**

Lectures and Experimental Demonstrations: Mondays and Fridays at 3 p.m. Tutorial class, one hour, as arranged.

Subjects: The elements of electricity, magnetism, sound, light, heat, and the properties of matter.

Text books will be recommended by the lecturer at the beginning of the course.

It is very desirable that students taking this course should have passed either in Mechanics or in Physics including Elementary Mechanics, at the Matriculation examination.

Students whose knowledge of Mechanics has not reached this standard will be assisted by special instruction during laboratory hours in the first term, but they will necessarily have less time to devote to the usual work of the class.

Int. a. Special Course for Medical Students

Lectures and Experimental Demonstrations: Mondays, Wednesdays and Fridays at 11.30 a.m. during the first two terms only.

Subjects: The elements of electricity, magnetism, sound, light, heat, and the properties of matter.

Text books will be recommended by the lecturer at the beginning of the course.

F1. Final Course (Subsidiary)

Lectures : Mondays and Fridays, at 10.30 a.m., throughout the session.

This course is designed to meet the requirements of students taking Physics as a subsidiary subject in the Final B.Sc. examination. It also forms the first half of the course for students taking Physics as a principal subject in that examination.

Text books will be recommended by the lecturer at the beginning of the course.

F2. Final Course (Principal)

Lectures : Wednesdays, at 10.30 a.m., throughout the session, and at some other hour to be arranged when the class meets.

This course, in addition to F1 above, is designed to meet the requirements of students taking Physics as a principal subject in the B.Sc. examination. Students taking this course are required to have previously gained at least a second class in each terminal examination in the Intermediate course, or in default are required to take the Intermediate course again concurrently with this course, unless specially exempted by the Senate.

N.B.—A practical acquaintance with the principles of the Differential and Integral Calculus is absolutely essential to students taking this class.

H. Honours Course

Three lectures a week throughout the session, at hours to be arranged to suit the convenience of students attending the class. The complete course extends over two sessions.

PHYSICAL LABORATORY

The Physical laboratory will be open daily from 9.30 a.m. to 1 p.m., and from 2 to 5 p.m. (Saturdays from 9.30 a.m. to 12.30 p.m.).

Students preparing for the Intermediate B.Sc. examination are required to devote at least three hours per week throughout the session to practical work. Medical students are required to devote three hours per week during the first two terms.

A student preparing for the Final B.Sc. examination and taking Physics as a principal subject is required to devote one day per week for two sessions to practical work.

A student taking Physics as a subsidiary subject is required to devote one day per week for one session to practical work.

The following table shows the hours at which the laboratory is open to the various classes :

	9.30—12.30.	2—5.
M.	Honours.	Final.
Tu.	Final.	Intermediate.
W.	Honours.	Final.
Th.	Final.	Intermediate.
F.	Honours.	Final.
S.	Intermediate and Medical.	

CHEMISTRY¹

Professor SMITHELLS	Professor COHEN
Dr. DAWSON	Mr. LOWSON
Mr. PERKINS	Mr. CALAM
	Mr. MARSHALL
Mr. PATTERSON	

LECTURE COURSES

Int. General Course of Chemistry (Intermediate)

The lectures of this course are given throughout the session, on Mondays, Wednesdays, and Fridays, at 11.30 a.m. In addition a tutorial class will be held one hour weekly throughout the session.

¹ Candidates for the First examination in Medicine, or the Intermediate Science or Preliminary Scientific (M.B.), London, should refer to page 439.

The course is divided into two parts :

Part I will comprise lectures on the general properties of matter; chemical combination and decomposition; preparation, classification, and chemical behaviour of the chief elements and their compounds; chemical theory treated in an elementary manner.

Part II (third term) will form an introduction to organic chemistry.

Int. a. Special Course for Medical Students

This course extends over the first and second terms, on Mondays, Wednesdays and Fridays, at 9.30 a.m., and an additional hour to be arranged later.

FINAL COURSES

F1. Inorganic Chemistry¹

(Advanced Course—A)

Mondays, Wednesdays, and Fridays, at 9.30 a.m., throughout the session.

A previous general knowledge of chemistry is necessary.

F2. Inorganic Chemistry

(Advanced Course—B)

Tuesdays, Thursdays, and Saturdays, at 9.30 a.m. throughout the session.

A previous general knowledge of chemistry is necessary.

F3. Organic Chemistry

Tuesdays, Thursdays, and Saturdays, at 12 (noon) throughout the session.

This course is intended for second year students, or for those who have already some knowledge of chemistry.

¹ It will be advisable, as a rule, for students to take course F1 before course F2, but this order is not essential.

HONOURS COURSES**H1. Organic Chemistry**

Professor COHEN

Mondays, Wednesdays, and Fridays, at 12 (noon), during the first and second terms.

H2. History of Chemistry

Professor COHEN

Mondays, Wednesdays, and Fridays at 9.30 a.m., during the first term.

H3. Physical Chemistry

Dr. DAWSON

Mondays, Wednesdays and Fridays, at 9.30 a.m. during the second and third terms.

H4. Electro-Chemistry

Dr. DAWSON

Tuesdays at 9.30 a.m. throughout the session.

H5. Chemistry of Food and Drugs

Mr. LOWSON

This class will be held during the second term, at hours to be arranged. This class is intended also for those students who are taking the Final examination of the Institute of Chemistry in Branch E (Food and Drugs).

Special fee, £3 3s.

S1. Science in Relation to the Household

A Teachers' class on Science in Relation to the Household will be held on Saturday mornings during the session at an hour to be arranged.

Special fee, £3 13s. 6d.

PRACTICAL CHEMISTRY

1. General Laboratory Courses

The object of the laboratory courses is to enable the student to obtain a practical acquaintance with chemical science, so as to fit him to conduct chemical analysis, to make original investigations in Chemistry, and generally to become qualified to apply the science to the arts and manufactures. It is necessary that each laboratory student should attend or should have attended the General or the Advanced courses in Chemistry and the course in Organic Chemistry (F3).

In the Chemical laboratories instruction is given in the general modes of preparing chemical compounds, inorganic and organic, in the qualitative and quantitative analysis of minerals and commercial products, in water analysis, gas analysis, and in the various branches of physical chemistry. It is necessary, however, that students wishing to pursue any special branch of practical work shall first have thorough training in the general principles and method of chemical manipulation and analysis.

Each student will be furnished with a separate working table, a set of re-agents, water and gas, and will be required to provide himself with a regulation set of apparatus on entry,¹ and also, if necessary, a few of the more costly tests, and any expensive materials which he may need for the purposes of original investigation. Apparatus of a special or expensive character may be obtained on loan, subject to such conditions as may be prescribed by the Professor.

Students taking the course for the First examination in Medicine or the Preliminary Scientific (M.B.) of the University of London, must attend at the hours specified on page 439.

2. Practical Course in Sanitary Chemistry

This course is arranged on the lines laid down by the General Medical Council and to suit the requirements of Medical Officers of Health.

¹ For the convenience of students, a supply of apparatus is kept at the University, and may be purchased from the laboratory steward.

The course will be held during the third term of the session on Tuesdays and Thursdays, from 2 to 5 p.m.,¹ and will include practical instruction or demonstrations in the sanitary examination of water, air and food, and on the properties of gases, the laws of heat and the use of meteorological instruments.

Instruction will be given in :

Water.—Qualitative examination, quantitative examination, estimation of free and albuminoid ammonia, oxygen consumption, chlorine, nitrates and nitrites, total solids, temporary and permanent hardness, metallic impurities.

Air.—Qualitative examination of foreign gases, quantitative determination of carbon dioxide.

Food.—Qualitative or quantitative examination of milk, butter, tea, coffee, sugar, alcoholic beverages.

The Properties of Gases.—Expansion, weight, pressure, diffusion, ventilation.

The Laws of Heat.—Expansion of liquids and solids, temperature, latent and specific heat, liquefaction, evaporation, ebullition, radiant heat.

The Use of Meteorological Instruments.—Thermometers (wet and dry bulb), barometers, hygrometers, anemometers, analysis of weather reports and meteorological charts.

Special fee, £5 5s.

COURSE FOR STUDENTS NOT TAKING A DEGREE.

The following course of instruction is recommended to students of Chemistry who do not propose to take a University degree.

First Year :

Chemistry Lectures : Course Int. or Course F1.

Chemical Laboratory, 3 days per week.

Mathematics Int.

Physics Int.

French or German.

¹ These hours are subject to re-arrangement.

Second Year :

Chemistry Lectures : F₁, F₂ and F₃.
Chemical Laboratory, 3 days per week.
Physics F₁.
French or German.

Third Year :

Chemistry Lectures : H₁, H₃, H₄, and H₅.
Chemical Laboratory, 3 days per week.
Physical Laboratory, 1 day per week.
One of the following : Elementary Engineering,
Metallurgy, Geology

INSTITUTE OF CHEMISTRY

Students desirous of obtaining the Associateship of the Institute of Chemistry are required to pass an approved preliminary examination (such as the Matriculation examination) and further to attend :

1. A course of study during three years in practical and theoretical Inorganic and Organic Chemistry, the practical work to occupy at least fifteen hours per week.
2. At least fifty lectures in Physics, with at least 100 hours in the Physical laboratory.
3. A course in Mathematics up to the standard of the Intermediate examination for the degree of Bachelor of Science.
4. A course of instruction in *one* of the following optional subjects : (a) Advanced Mathematics, (b) General Chemical Engineering, (c) Metallurgy, (d) Geology and Mineralogy, (e) Elementary Physiology, (f) Bacteriology, (g) Agriculture, (h) Elementary Botany, (i) Elementary Biology, (j) Higher Physics.

The above non-degree course is recommended as a convenient arrangement of subjects. For further details the Regulations of the Institute¹ should be consulted.

¹ To be obtained from the Secretary, Institute of Chemistry, 30, Bloomsbury Square, London, W.C.

ZOOLOGY

Professor GARSTANG

Mr. TAYLOR

Miss LEBOUR

LECTURE COURSES

Int. Intermediate Course

Lectures on Mondays and Fridays at 10.30 a.m. throughout the session. Practical work on Tuesdays from 2 to 5 p.m. and on Wednesdays from 10.30 to 11.30 a.m. throughout the session.

Subjects: Outlines of the anatomy and physiology of animals as exemplified by a series of selected types. The elements of embryology.

Practical Work, First and Second terms: Amœba, a Flagellate, Paramecium, Monocystis, Hydra, Liver fluke, Earthworm, Amphioxus, Dogfish, Frog. Demonstration of the distinctive features of a Mammal. Embryology of Frog and Chick.

Third Term: Cockroach, Culex (life history), Taenia, Ascaris.

Book recommended

Bourne, *An Introduction to the Study of the Comparative Anatomy of Animals*, 2 vols., 2nd edition (Bell & Sons, 10/6).

Int. a. Course for First M.B. Examination

The Zoological part of the course for the First M.B. examination in Biology coincides with the Intermediate course above, with certain modifications. During the third term, medical students will take additional Zoology (including the anatomy of the Rabbit), on Wednesday mornings (practical work 9.30 to 11.30 a.m.; lectures at 11.30 a.m.).

Book recommended

Bourne, *An Introduction to the Study of the Comparative Anatomy of Animals*, 2 vols., 2nd edition (Bell & Sons, 10/6).

Int. b. Course for Conjoint Board Examination

The Zoological part of the syllabus for the examination in Biology for the diploma of the Conjoint Board (L.R.C.P. and M.R.C.S.) is covered by the Intermediate course during the first and second terms.

FI. Final Course: General Zoology

Lectures three times a week, at hours to be arranged with the class.

Sections A and B will be taken in alternate years, each occupying one session. Either will rank as a subsidiary course for the degree. Section B will be taken during 1911-1912.

A course of laboratory work, occupying at least six hours per week, will be provided in connection with each series of lectures. Excursions for field and waterside observation will be arranged from time to time.

The two years' course will prepare for Zoology as a principal subject at the Final B.Sc. examination.

A. INVERTEBRATA (EXCEPT ECHINODERMA). The organisation and mode of life of common types of the principal classes and orders; the function of their parts. Modes of development and larval forms. Classification. Outlines of palæontology of Mollusca or Arthropoda.

Evolution and adaptation. The general characteristics of marine, freshwater, and terrestrial faunas. The colours of animals.

The natural history of the local species of one or more groups to be selected.

B. VERTEBRATA (AND ECHINODERMA). The organisation and mode of life of selected types of Echinoderma, Protochorda, and the classes of Vertebrata. Modifications of the skeletal and other systems characteristic of the principal orders, and their relation to locomotor, respiratory, and other functions. Temporary and seasonal colour-changes in various types of Vertebrata.

Outlines of development of the chief classes; the palæontology of a selected class; the orders and chief sub-orders of Mammalia.

Geographical distribution, especially of Mammalia.

The variation of one or more species to be selected.

H. Honours Course

A course of lectures and laboratory work will be arranged to suit the requirements of students who intend to offer themselves for Honours or for the M.Sc. in Zoology.

SPECIAL CLASSES.

S1. Natural History (Zoology) for Agricultural Students.

Lectures and laboratory work during the second term only on Mondays, 10.30 a.m. to 12.30 p.m.; Wednesdays at 11.30 a.m.; and Fridays, 9.30 to 11.30 a.m.

Subjects: Elementary facts of structure of the higher animals; the use and mechanism of special organs; drawing; the use of the microscope.

S2. Agricultural Zoology

Mr. TAYLOR

Lectures and laboratory work during the first term, on Thursdays at 11.30 a.m., and on Fridays from 9.30 to 11.30 a.m., and from 3 to 4 p.m.

Subjects: Structure and classification of insects. Life history of certain types.

This course covers the syllabus of the examination in Agricultural Zoology for the National Diploma in Agriculture.

Book recommended

Miall, *Injurious and Useful Insects* (Bell & Sons, 3s. 6d.)

S3. Nature Knowledge (Animal Life)

Professor GARSTANG

Mr. TAYLOR Miss LEBOUR

The class will meet on Saturdays from 9.30 a.m. to 12 noon throughout the session, beginning October 7th. The course is intended primarily for teachers, and is based on lessons which can be reproduced or adapted for classes of children. It is not restricted to such lessons, however, and is designed to give an elementary practical knowledge of some of the chief types of animals and of animal mechanism, as well as an insight into the relations of animals to their surroundings.

Each student will be required at the beginning of the course to provide a few simple instruments, which can be obtained at the laboratory at a cost of about 1s. 6d.

Fee, £3 3s.

ZOOLOGICAL LABORATORY

The Zoological laboratory will be open daily from 9.30 a.m. to 5 p.m. (Saturdays, from 9.30 a.m. to 12.30 p.m.).

Each student is required to provide himself with a razor, hone, a pocket lens, a *dissecting case* (a suitable case

is made by Reynolds & Branson, Ltd., Leeds, and sold at 13s. 6d.), and a *biological drawing book* (Jackson, Leeds, 1s.).

A *microscope* is also necessary, and students are recommended to provide their own, which must be submitted for approval. They are particularly urged to consult the Professor before purchasing new ones.

Every microscope should be fitted with a ruled circle in the eyepiece for drawing. Messrs. Reynolds & Branson will supply such a circle for 7s. 6d., or 6s. 6d. when included with a microscope.

Microscopes may be had on loan from the University at the rate of 2/6 each per term for elementary work, and 3/6 each per term for advanced work. These fees must be paid in advance.

BOTANY

Professor PRIESTLEY

Mr. WALKER

Mr. STILES

LECTURE COURSES

Int. Intermediate Course

Lectures on Tuesdays and Thursdays at 9.30 a.m., and laboratory work on Tuesdays and Thursdays from 10.30 a.m. to 12.30 p.m. throughout the session.

Subjects: The elementary study of *Chlamydomonas*, *Ulothrix*, *Pleurococcus*, *Spirogyra*, *Fucus*, *Bacteria*, *Saccharomyces*, *Eurotium*, *Pythium*, *Pellia*, *Funaria*, *Aspidium*, *Selaginella*, *Pinus*, and the flowering plant; the elements of plant anatomy and physiology. The classification and adaptation of flowering plants as exhibited by examples of *Salicaceae*, *Ranunculaceae*, *Cruciferae*, *Caryophyllaceae*, *Leguminosae*, *Rosaceae*, *Labiatae*, *Primulaceae*, *Compositae*, *Liliaceae*.

Books.

Scott, *Structural Botany*, 2 vols. (Black, 3s. 6d. each.)

Groom, *Elementary Botany* (Bell, 3s. 6d.)

Each student is required to provide himself with a microscope, a pocket lens, a biological drawing book (Ingle & Son, Call Lane, Leeds, 1s.), two razors, two scalpels and a strop.

Int. a. Course for First M.B. examination

This course includes the Botanical work necessary for the Biology of the First M.B. examination. The work is similar to that of the Intermediate course outlined above, but the types in italics are omitted. The times will be as in the Intermediate Course above, but the work will stop in the middle of the second term, to be resumed in the third term.

Int. b. Course for Conjoint Board Examination

This course is part of course Int., and is held at the same time, but is completed by the middle of the second term.

Fr. Final Course : Botany

Lectures on Mondays, Wednesdays and Fridays at 9.30 a.m. throughout the session. Courses A and B will be taken in alternate years, each occupying one session. Either will rank as a subsidiary course for the degree.

- A. Algæ, Fungi and Bryophyta : classification and life-histories of representative groups.
Pteridophyta : structure and relationships of the principal groups.
Physiology of growth and irritability.
- B. Gymnosperms : morphology, anatomy and classification of principal groups ; distribution in space and time.
Angiosperms : the morphology of the flower, general anatomy. The principles of geographical distribution, and ecology.
Important natural orders of flowering plants.
Physiology of metabolism. Cytology, Evolution and Heredity.

A course of laboratory work on one of the above courses will be provided each session.

The two years' course will prepare for the Botany of the Final B.Sc. examination.

H. Honours Course

A course of lectures and laboratory work will be given at hours to be arranged

SPECIAL CLASSES

S1. Natural History (Botany) for Agricultural Students

Lectures and laboratory work during the first term, on Mondays, at 10.30 a.m. to 12.30 p.m.; on Wednesdays at 11.30 a.m.; and on Fridays, at 9.30 to 11.30 a.m.

Subjects: Elementary facts of structure of plants; drawing; the use of the microscope; simple experiments on the growth of plants and allied matters; the elements of Agricultural Botany.

S2. Botany for Agricultural Students

(Second year of Agricultural Course)

Mondays and Wednesdays, from 2 to 4 p.m., and Fridays, at 2 p.m., during the first and second terms.

Subjects: Structure, nutrition and reproduction of plants; the elements of systematic Botany; fungi which cause diseases of crops.

Laboratory work to accompany the lectures, with special work on identification of grasses and other crop-plants, common weeds, and diseases of plants.

This course will prepare for the National Diploma examination.

S3. Forestry

Lectures and laboratory work, Mondays and Wednesdays, 10.30 to 12.30 a.m., during the third term.

Occasional excursions will be made during the term; students to pay their own railway fares or other expenses.

Subjects: (1) Forest Botany; the structure and growth of trees and timber.

(2) General Forestry; trees in relation to soil and climate; the growth of trees in the open and in forests; formation and regeneration of woods and plantations; pure and mixed woods; general management of trees.

Laboratory work includes identification of important trees and timbers, and common diseases of trees.

S4. Nature Knowledge (Plant Life)

Mr. WALKER

This class will meet on Saturdays from 9.30 a.m. to 12 noon throughout the session, beginning September 16th. The course embraces such botanical topics as can be readily adapted to school work. No formal lectures will be given.

The method of treatment followed, will, as nearly as possible, be that which could be put into practice in classes of children. Numerous experiments will be performed, but without *special* apparatus, and the natural objects studied will be confined to those which can be gathered with little trouble by the teacher or the children.

Fee for course, £3 3s.

S5. Experimental Plant Physiology

Mr. WALKER

This class is in part the same as S4 and will be held on Saturdays at the University in the morning, and in the afternoon at the Manor Farm, Garforth, throughout the session. It is intended for teachers of Horticulture, and is held in connection with a two years' course in Horticulture.

Fee £1 12s. 6d.

BOTANICAL LABORATORY

The Botanical laboratory will be open daily from 9.30 a.m. to 5 p.m. (Saturdays, from 9.30 a.m. to 12.30 p.m.).

Each laboratory student, or student taking a practical class in Botany, will be required to use his own microscope and dissecting instruments. Microscopes may be had on loan from the University at the rate of 2/6 each per term for elementary work, and 3/6 each per term for advanced work. These fees must be paid in advance.

PHYSIOLOGY

Professor BIRCH

Mr. LLOYD

For courses in this Department, see page 462.

GEOLOGY

Professor KENDALL

Mr. GILLIGAN

Mr.

LECTURE COURSES

Int. Intermediate Course

Lectures on Tuesdays, Thursdays, and Saturdays at 10.30 a.m. throughout the session.

Subjects: The earth's position in the universe; the movements, form, size and density of the earth; the

construction and interpretation of maps ; the principles of Meteorology, with special reference to the distribution of climatic provinces ; weather forecasts and charts ; Oceanography ; Dynamical Geology, including denudation, deposition, earth movements, mountain structure, morphology of land-forms ; Historical Geology, being a brief account of the nature and succession of the various formations entering into the formation of the British Isles ; Geology in relation to the study of Geography.

Practical work, which will include work at the Cecil Duncombe Observatory, three hours per week throughout the session.

FINAL COURSES

Fr. Final Course in Geology

Mondays and Fridays throughout the session, at 2 p.m., and at another hour and day to be arranged at the beginning of the session, for students taking Geology as a subsidiary subject, and for students taking Geology as a principal subject in the first year of their Final course.

Subjects : The scope of Geology ; the crust of the earth ; the common rock-forming minerals ; classification of rocks according to their mode of origin ; aqueous rocks ; denudation, transport, and accumulation of rocks ; chemical action ; forms of stratification ; jointing and concretionary structures ; igneous rocks, volcanoes and earthquakes ; the condition of the interior of the earth ; metamorphic rocks and metamorphism ; slaty cleavage ; mountain-building ; the elements of Stratigraphical Geology and Palæontology ; the application of Geology to Civil Engineering.

F2. Advanced Geology.

Three lectures a week throughout the session, at hours to be arranged, for students taking Geology as a principal subject in the second year of their Final course.

F3, F4, F5. Final Courses in Palæontology, Applied Geology, Petrology

These courses will prepare for the Final B.Sc. (Ordinary). Each will consist of two lectures and not less than two hours' practical work a week during the session at hours to be arranged with the students.

HONOURS COURSES

H1. Honours Course in Geology

A course of not less than 90 lectures will be given at hours to be arranged with the students.

H2. Honours Course in Mineralogy

A course of 30 lectures and demonstrations will be given for students reading for Honours Geology (Scheme A).

H3. Mineralogy for Mining Course

Lectures on Wednesdays and Fridays, at 11.30 a.m.

A course of 60 lectures with practical work will be given during the session for students taking the Mining course, and will include the following subjects, viz.:

Principles of Crystallography

Physical properties of Minerals

Descriptive and Determinative Mineralogy

Modes of occurrence and association of Minerals and Ores, with special reference to Metalliferous Mining.

SPECIAL CLASSES

Sr. Agricultural Geology

A course of about 60 lectures will be given on Mondays, Wednesdays, and Fridays, during the first and second terms, at 11.30 a.m. Practical work, Tuesdays, from 2 to 4 p.m.

Subjects: Scope of the science; the composition and physical characters of the common rock-forming minerals; classification of rocks according to (a) their mode of origin and (b) chemical composition; denudation, transport and accumulation; forms of stratification; the subdivision of stratified rocks; economic products of the chief formations; the nature and origin of the drift deposits; their importance in relation to the soils of the North of England; the soils of the Warp lands and the Yorkshire Wolds; the disintegration of rocks and the formation of soils; geological maps, their interpretation and use; British rainfall, its measurement and variation; storage of subterranean waters; water supply from springs and deep and shallow wells; application of geological knowledge to the selection of sites for roads, bridges, &c.

S2. Field Course

A course of practical instruction, with field excursions, will be given at hours to be arranged.

Special fee, £3 13s. 6d. (including an allowance of £1 1s. for travelling expenses).

S3. Geology applied to Coal Mining

Tuesdays at 4 p.m. during the second and third terms.

Outline of Physical and Dynamical Geology: Denudation, transport, and accumulation of rocks; volcanoes and earthquakes; elevation and depression of the earth's crust; condition of the interior of the earth; earth folds, and the origin of mountain chains.

Historical Geology: General outline of Historical Geology; detailed description of the carboniferous rocks, with special reference to the Yorkshire coalfield; the rocks which overlie the carboniferous; search for coal under the newer rocks; the drift deposits, how they affect the discovery and working of coal.

S4 Geography

Mondays, Wednesdays, and Fridays, at 9.30 a.m., in the second and third terms.

(a) *Physical Geography:* The agents at work on and beneath the surface of the earth; phenomena resulting from earth-heat; distribution of land and water.

(b) *Political and Commercial Geography:* Political and economic effects of natural features and conditions; outlines of Geography of the British Empire (including Historical Geography); Political and Commercial Geography of the United Kingdom.

S5. Geology applied to Sanitary and Civil Engineering

Mondays, during the second and third terms at 5 p.m.

GEOLOGICAL LABORATORY

The Geological laboratory will be open every day.

Students preparing for the Final B.Sc. (Ordinary), will be required to take not less than six hours practical work a week. Students preparing for Honours will be required to take not less than six hours a week.

Courses in Technology

CIVIL & MECHANICAL ENGINEERING

Professor GOODMAN

Mr. GILCHRIST Mr. KEAN

Mr. THOMSON Mr. MYERS

Mr. DUNCAN

The course of instruction in Engineering extends over three sessions, and comprises (a) Lectures on Engineering Principles and Work; (b) Instruction in Machine and Geometrical Drawing; (c) Experimental Work in the Engineering Laboratory; (d) Field Work and Practical Surveying.

The present arrangements of the Department do not allow of more than 100 students being admitted to the Laboratory and Drawing Classes.

In the event of more than 100 qualifying for entrance, preference will be given to students taking a two or three years' course and who have had previous practical training in Works.

Students will not be admitted, except under very special circumstances, after the beginning of the Session.

COURSES OF STUDY

The work of this department is intended to provide a systematic training in the application of scientific principles to engineering purposes, and is not intended in any way to supersede the usual routine of engineering works and offices. An apprenticeship or pupilage in such works is an absolute necessity to every Engineering Student, and is the only means by which he can obtain a thorough knowledge of the practical details of his future work.

The scientific training at the University must be regarded as a means of acquiring the principles that underlie the art of Engineering, and the training in the Works as necessary for acquiring the art itself.

It is most important that all students, whether taking up Civil, Mechanical or Electrical Engineering, should have some practical experience in Engineering Works before taking up the University course.¹ West Riding County Council and other scholars who have not been in works should make application to have their Scholarships postponed for one year, for the purpose of getting the necessary preliminary practical experience.

Though the Engineering courses are designed primarily to suit students intending to be Civil or Mechanical, or Electrical Engineers, the subjects in the Civil Engineering course are such as should be studied by Mining Engineers, and by Architects, and the course prescribed for Mechanical Engineers, or parts of it, would be found of direct practical utility to students who are afterwards to be engaged in any occupations connected with manufactures.

All students entering any Engineering Department will be required to pass an Entrance Examination² or to produce certificates of having passed the Matriculation examination conducted by the Joint Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield, the Oxford or Cambridge Local examination in Mathematics (including Trigonometry), London University Matriculation, or other approved examination. Students under 17 have to take a paper on English Composition and Dictation.

ENTRANCE EXAMINATION

(For Students intending to enter the Civil, Mechanical, Electrical, and Mining Engineering Departments).

(Time allowed, three hours.)

Arithmetic: The ordinary rules of Arithmetic including vulgar and decimal fractions, proportion, factors, H. C. F.

¹ See a pamphlet published by the University on "The Training of Professional Engineers." The Registrar will forward a copy on application.

² The Examination will be held on Tuesday, October 3, 1911, the English subjects at 10 a.m. and the Mathematical subjects at 2 p.m., and on Tuesday, July 2, 1912, at 2 p.m. in the Mathematical subjects only. Students should send in their names beforehand. The July Examination may be taken at any place convenient to the candidate provided suitable invigilation can be secured. Students who have attended Evening classes at the University and have taken a satisfactory position in the Examination will be exempted from this Examination.

and L. C. M., practice, square root, conversion from English to Metric system, averages, percentages, interest.

Algebra: The ordinary rules of Algebra including fractions, brackets, simple equations with problems. H. C. F. and L. C. M.

Geometry: The first book of Euclid or its equivalent, including riders.

Trigonometry: Simple problems involving the trigonometrical ratios.

Every student is required to pass in each subject. For a sample paper see the Engineering prospectus.

Books Recommended

LONEY'S Arithmetic for Schools.

HALL AND KNIGHT'S Elementary Algebra.

LOCK'S Trigonometry for Beginners.

HALL AND STEVENS' Euclid, Book I.

Students who can devote three years to attendance at the University are strongly recommended to take the B.Sc. Degree Course in Engineering science in the Leeds University. Students intending to read for a degree must pass the Matriculation examination before taking the Engineering course. Mechanics should always be included in the subjects chosen. The Institution of Civil Engineers now requires that all candidates for membership shall take an Honours Engineering Degree or shall pass an equivalent examination before being admitted.

All Engineering Students of this University who have passed the Leeds Matriculation (including two Science subjects) and an additional paper in Trigonometry or other prescribed examination are eligible for election as Students of the Institution of Civil Engineers—the first step towards becoming a Member (M.Inst.C.E.). They are then entitled to attend the Meetings and Excursions of the Local Branch

of the Institution of Civil Engineers and to receive four volumes of Proceedings per annum. Miller Scholarships and Prizes, value from £10 to £120, are awarded by the Institution for papers read by students at either the Local Branches or at Head Quarters. Free Studentships for a period of two years are awarded to all students elected from this University, who have obtained a first class in the second year's examination, and have undertaken research work to the satisfaction of the Professor, the results of which must be forwarded to the Institution in the form of a Student's Paper.

Students who have not passed the Matriculation examination are strongly advised to take the Studentship examination of the Institution of Civil Engineers during their second year, and the Associate Membership examination during their third year. Only those students who have attended their various classes to the satisfaction of the Professors and Lecturers concerned and have done reasonably well in their class examinations will be proposed for admission to the Institution.

A three hours' Examination is held at the end of the first term, when note books are allowed to be used, and an ordinary Examination without note books at the end of the second and third terms. In the latter Examination a piece of designing and drawing work is set in addition, for which a fortnight is allowed.

If a student fails more than once in his class examinations, in any one course, he will be required to repeat that course of study before proceeding to higher work, and if he fails to pass in all of his examinations in Engineering I he will not be allowed to re-enter except on the special recommendation of the head of the department.

The following courses of study are suitable for students who wish to take a B.Sc. degree :—

MATRICULATION, before leaving school. (Fee, £2).

(1) English Language and Literature, and English History.

(2) Mathematics, including an additional paper in Trigonometry.

(3) Elementary Mechanics.

(4) Chemistry.

(5) Either French or German, or some other language approved by the Board.

INTERMEDIATE, at end of first year. (Fee, £1).

(1) Mathematics (two papers).

(2) Physics (with practical examination).

(3) Chemistry (with practical examination).

(4) An essay.

INTERMEDIATE, at end of second year. (No fee).

Applied Mechanics.

ORDINARY DEGREE.

FINAL, at end of third year. (Fee, £1).

Mechanical Engineering, principal subject.

Strength and Elasticity of Materials.

Heat Engines and Dynamics of Machinery.

Hydraulics and Compressed Air.

Graphics, one day.

Laboratory, one day.

Subsidiary subjects: At end of second or third years.

Mathematics, see Examination papers—Pure Mathematics I and II; *or* Pure Mathematics I and Subsidiary Applied Mathematics.

Physics or Surveying, or Electrical or Mining Engineering.

Translation from French or German.

Sample drawings done by the candidate, also his laboratory books must be handed in for the external examiner to inspect.

The candidate must produce a certificate of having satisfactorily attended a prescribed course in Physics.

Civil Engineering, principal subject. (Fee, £1).

Surveying.

Hydraulics and Compressed Air.

Structures and Design.

Graphics, one day.

Laboratory, one day.

Subsidiary subjects:

Mathematics, see Examination papers—Pure Mathematics I and II; *or* Pure Mathematics I and Subsidiary Applied Mathematics.

Geology or Mechanical or Electrical or Mining Engineering.

Translation from French or German.

Sample drawings done by the candidate, also his laboratory books must be handed in for the external Examiner to inspect.

The candidate must produce a certificate of having satisfactorily attended a prescribed course in Geology.

On the conferment of the degree a fee of £5 is charged

HONOURS DEGREE.

INTERMEDIATE, at end of second year. (Fee, £1).

Applied Mechanics.

FINAL, at end of the second or third year. (Fee, £1)

Pure Mathematics. Two papers.

Applied Mathematics. Two papers.

Mechanical Engineering, at the end of the third year. (Fee, £1).

Graphics, paper to be worked at home during the third term.

Strength and Elasticity of Materials.

General Hydraulics.

Thermodynamics and Theory of Heat Engines.

Dynamics of the Steam Engine.
Mechanics and Kinematics.
Laboratory, two days
Translation from French or German.

Sample drawings done by the candidate, also his laboratory books must be handed in for the external Examiner to inspect.

Civil Engineering. (Fee, £1).

Graphics, paper to be worked at home during the third term.

Strength and Elasticity of Materials.
General Hydraulics.
Theory of Complex Structures.
Surveying.
Railways and Water Supply, &c.
Laboratory, two days.
Translation from French or German.

Sample drawings done by the candidate, also his laboratory books must be handed in for the external Examiner to inspect.

On the conferment of the degree a fee of £5 is charged.

Diplomas.

Diplomas will be awarded in Civil and Mechanical Engineering to those students who have done satisfactorily in their class work throughout their course and who have passed the final Engineering papers set for the Ordinary Degree. Notice of intention to apply for a diploma must be made to the Clerk to the Senate early in the student's career. See also pages 187 and 280. Fee, £1.

Fees.

The fee for all courses, including the registration, library and Union fees, is £31 per session of three terms, but it does not include Examination fees or Laboratory deposit (10/6).

TIME TABLES

1. Ordinary and Honours Degrees

FIRST OR INTERMEDIATE YEAR COURSE FOR CIVIL, ELECTRICAL, AND MECHANICAL ENGINEERING.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Eng. Laboratory		Chem. Int.	Math. Int.	Physics Int.	Eng. I.
TUE. ..	Drawing	Drawing	Math. F1	Chemical Laboratory		
WED. ..	Eng. Laboratory		Chem. Int.			
THU. ..	Drawing	Tech. of Fuel	Math. F1	Physics Laboratory		
FRI. ..	Chem. Exercise Class	Eng. I. Exercise Class	Chem. Int.	Math. Int.	Physics Int.	Eng. I.
SAT. ..	Drawing	Machine Drawing Lecture	Physics Lab.			

2. Ordinary Degrees

SECOND YEAR COURSE FOR MECHANICAL ENGINEERING, with Mining Engineering as the subsidiary subject.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Drawing or Mining	Eng. VI.	Math. F2	Drawing	Drawing	Drawing
TUE. ..	Engineering	Engineering Laboratory		Engineering	Engineering Laboratory	
WED. ..	Drawing or Mining	Eng. VI.	Math. F2	Drawing	Drawing	Drawing
THU. ..	Engineering or Mining			Laboratory		
FRI. ..	Drawing or Mining	Eng. VI.	Math. F2	Drawing	Drawing	Drawing
SAT. ..	Mach. Design	Ex. Class				

It may be advisable for students who have not done well in Maths. F1 in their first year to repeat a part of the course during the third term of their second year.

3. Ordinary Degrees**SECOND YEAR COURSE FOR MECHANICAL ENGINEERING, with Civil Engineering as the subsidiary subject.**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Drawing	Eng. VI.	Math. F2	Drawing	Drawing	Drawing
TUE.	Engineering Laboratory			Eng. Laboratory	Eng. III.	
WED.	Drawing	Eng. VI.	Math. F2	Drawing	Drawing	Drawing
THU.	Engineering Laboratory			Eng. Laboratory	Eng. III.	
FRI.	Drawing	Eng. VI.	Math. F2	Drawing	Drawing	Drawing
SAT.	Machine Design	Ex. Class	Eng. III.			

Students are advised to take the Practical Surveying Class at Easter.

4. Ordinary Degrees**SECOND YEAR COURSE FOR CIVIL ENGINEERING**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Drawing	Eng. VI.	Math. F2	Geol. F1	Drawing	Drawing
TUE.	Engineering Laboratory			Eng. Laboratory	Eng. III.	
WED.	Geol. Lab.	Eng. VI.	Math. F2	*Geol. F1	Geol. Lab.	Geol. Lab.
THU. †	Drawing	Drawing	Drawing	Drawing	Eng. III.	
	Geology	Field	Work			
FRI.	Drawing	Eng. VI.	Math. F2	Geol. F1	Drawing	Drawing
SAT.	Mach. Design	Ex. Class	Eng. III.			

* This time may be altered to suit the convenience of students. † Alternate weeks.

Students are advised to take the Practical Surveying Class at Easter, and the special course of Geology for Civil Engineers on Mondays at 5 p.m. during the second and third terms.

5. Ordinary Degrees

THIRD YEAR COURSE FOR MECHANICAL ENGINEERING,
with Electrical Engineering as the subsidiary subject.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Elec. Ia.	Eng. Lab.* Phys. Fit†	Eng. Lab.	Engineering Laboratory		
TUE.	Eng. IV.	Eng. VII.	Drawing	Drawing (1) Elect. Eng. Lab. (2, 3)		
WED.	Elec. Ia.	Engineering Lab.		Engineering Laboratory		
THU.	Eng. IV.	Eng. VII.		Chemistry of Gases	Drawing	Drawing
FRI.	Elec. Ia.	Eng. Lab.* Phys. Fit†	Eng. Lab.	Engineering Laboratory		
SAT.	Exer. Class	Eng. VII.				

6. Ordinary Degrees

THIRD YEAR COURSE FOR CIVIL ENGINEERING

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Elec. Ia.	Eng. Lab.* Phys. Fit†	Eng. Lab.	Engineering Laboratory		
TUE.	Eng. IV.	Eng. VII.	Drawing	Drawing (1) Elect. Eng. Lab. (2, 3)		
WED.	Elec. Ia.	Engineering Lab.		Engineering Laboratory		
THU.	Eng. IV.	Eng. VII.		Drawing	Drawing	Drawing
FRI.	Elec. Ia.	Eng. Lab.* Phys. Fit†	Eng. Lab.	Engineering Laboratory		
SAT.	Exer. Class	Eng. IV.				

* First and Third Terms.

† Second Term.

7. Honours Degrees**SECOND YEAR COURSE FOR MECHANICAL ENGINEERING**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Math. F ₃	Eng. VI.	Math. F ₂	Drawing	Drawing	Drawing
TUE. ..	Engineering Laboratory			Engineering Laboratory		
WED. ..	Math. F ₃	Eng. VI.	Math. F ₂	Drawing	Drawing	Drawing
THU. ..	Engineering Laboratory			Engineering Laboratory		
FRI. ..	Math. F ₃	Eng. VI.	Math. F ₂	Drawing	Drawing	Drawing
SAT. ..	Mach. Design	Exer. Class				

8. Honours Degrees**SECOND YEAR COURSE FOR CIVIL ENGINEERING**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Math. F ₃	Eng. VI.	Math. F ₂	Geol. F ₁	Drawing	Drawing
TUE. ..	Engineering Laboratory			Engineering Laby.		Eng. III.
WED. ..	Math. F ₃	Eng. VI.	Math. F ₂	*Geol. F ₁	Geol. Lab.	Geol. Lab.
THU. † {	Drawing	Drawing	Drawing	Drawing } Geology Field Work		Eng. III.
FRI. ..	Math. F ₃	Eng. VI.	Math. F ₂	Geol. F ₁	Drawing	Drawing
SAT. ..	Mach. Design	Exer. Class	Eng. III.			

* This time may be altered to suit the convenience of students. † Alternate weeks.

Students are advised to take the Practical Surveying Class at Easter, and the special course of Geology for Civil Engineers on Mondays at 5 p.m. during the second and third terms.

9. Honours Degrees

THIRD YEAR COURSE FOR MECHANICAL ENGINEERING

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Elec. Ia	Eng. Lab.* Phys. Fit†	Eng. Lab.	Engineering Laboratory		
TUE. ..	Eng. IV. Part I. II.	Eng. VII.	Drawing	Drawing (1) Elec. Eng. Lab. (2, 3)		
WED. ..	Elec. Ia	Engineering Lab.		Engineering Laboratory		
THU. ..	Eng. IV. Part I. II.	Eng. VII.		Chemistry of Gases	Drawing	Drawing
FRI. ..	Elec. Ia	Eng. Lab.* Phys. Fit†	Eng. Lab.	Drawing		
SAT. ..	Exer. Class	Eng. VII.				

10. Honours Degrees

THIRD YEAR COURSE FOR CIVIL ENGINEERING

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Eng. Lab.	Eng. Lab.* Phys. Fit†	Eng. Lab.	Engineering Laboratory* Cement Laboratory†		
TUE. ..	Eng. IV.	Eng. VII.	Drawing	Drawing	Drawing	Drawing
WED. ..	Engineering Laboratory.			Engineering Laboratory		
THU. ..	Eng. IV.	Eng. VII.		Drawing	Drawing	Drawing
FRI. ..	Eng. Lab.	Eng. Lab.* Phys. Fit†	Eng. Lab.	Engineering Laboratory		
SAT. ..	Exer. Class.	Eng. IV.				

* First and Third Terms.

† Second Term.

11. Courses for Students not taking Degrees
FIRST YEAR COURSE (Civil, Electrical, Mechanical).

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Math. I.	Engineering	Laboratory	Eng. I.		
TUE.	Mechs.	Drawing	Eng. I. Exercise Class	Drawing	Drawing	Drawing
WED.	Math. I.	Engineering Lab.	Engineering Laboratory			
THU.	Mechs.	Tech. of Fuel	Mechs. and Maths.	Drawing	Drawing	Drawing
FRI.	Math. I.	Engineering	Laboratory	Eng. I.		
SAT.	Drawing.	Machine Drawing Lecture.				

12. Courses for Students not taking Degrees
SECOND YEAR COURSE (Civil).

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Math.II.	Eng. VI.	Exercise Class	Geol. Fr	Phys. Int.	Drawing
TUE.	Engineering Laboratory			Engrg. Laby.	Eng. III.	
WED.	Math.II.	Eng. VI.	Drawing	*Geol. Fr	Drawing	Drawing
THU.	{ Drawing Geology	{ Drawing Field	{ Drawing Work }			Eng. III.
FRI.	Math.II	Eng. VI.	Drawing	Geol. Fr.	Phys. Int.	Drawing
SAT.	Mach. Design.	Drawing	Eng. III.			

* This time may be altered to suit the convenience of students.

† Alternate weeks.

Students are advised to take the Practical Surveying Class at Easter, and the special course of Geology for Civil Engineers on Mondays at 5 p.m. during the second and third terms.

13. Courses for Students not taking Degrees

THIRD YEAR COURSE (Civil).

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Elec. Ia	Engineering Lab.		Engineering Laboratory (1, 3) Cement Laboratory (2)		
TUE. ..	Eng. IV.	Eng. VII.	Drawing	*Drawing †Elec. Eng. Lab.		
WED. ..	Elec. Ia	Engineering Lab.		Engineering Laboratory		
THU. ..	Eng. IV.	Eng. VII.		Drawing	Drawing	Drawing
FRI. ..	Elec. Ia	Engineering Lab.			Drawing	
SAT. ..	Exer. Class	Eng. IV.				

14. Courses for Students not taking Degrees

SECOND YEAR COURSE (Mechanical)

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Math. II.	Eng. VI.	Exercise Class	Drawing	Phys. Int.	Drawing
TUE. ..	Engineering Laboratory			Engineering Laboratory		
WED. ..	Math. II.	Eng. VI.	Drawing	Drawing	Drawing	Drawing
THU. ..	Engineering Laboratory			Physics	Laboratory	
FRI. ..	Math. II.	Eng. VI.	Drawing	Drawing	Phys. Int.	Drawing
SAT. ..	Mach. Design.	Drawing	Physics Lab.			

* First Term.

† Two Terms.

15. Courses for Students not taking Degrees**THIRD YEAR COURSE (Mechanical)**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Elec. Ia	(1-3) Eng. Lab. *Phys. Fi	Eng. Lab.	Engineering Laboratory (1, 3) Cement Laboratory (2)		
TUE. ..	Eng. IV.	Eng. VII.	Drawing	Drawing (1) Elec. Eng. Lab. (2, 3)		
WED. ..	Elec. Ia	Engineering Lab.		Engineering Laboratory		
THU. ..	Eng. IV.	Eng. VII.	Drawing	Chemistry of Gases	Drawing	Drawing
FRI. ..	Elec. Ia	(1-3) Eng. Lab. *Phys. Fi	Eng. Lab.	Engineering Laboratory		
SAT. ..	Exer. Class	Eng. VII.				

* Second Term only.

FIRST, SECOND, AND THIRD YEAR COURSES (Electrical)

See Time Tables on pages 339 and 340.

16. Two-Year Course**FIRST YEAR COURSE (Mechanical)**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Math. II.	Eng. VI.	Eng. VI Exercise Class	Eng. Laboratory		Eng. I.
TUE. ..	Mechs.	Drawing	Eng. I. Exercise Class	Drawing	Drawing	Drawing
WED. ..	Math. II.	Eng. VI.	Engineering	Laboratory		
THU. ..	Mechs.	Tech. of Fuel	Mechs. & Exercise Maths.	Drawing	Drawing	Drawing
FRI. ..	Math. II.	Eng. VI.	Engineering Laboratory			Eng. I.
SAT. ..	Mach. Design	Drawing				

17. Two-Year Course

SECOND YEAR COURSE (Mechanical)

	9-30 to 10-30.	10-30 to 11-30.	11-30 to 12-30.	2 to 3.	3 to 4.	4 to 5.
MON.	Elec. Ia	*Eng. VI.	Drawing	Drawing	Phys Int.	Drawing
TUE.	Eng. IV. Parts I. II	Eng. VII.	Drawing	(1) Engineering Lab. (2, 3) Elect Eng.		Laboratory Laby.
WED.	Elec. Ia	*Eng. VI.	Drawing	Drawing	Drawing	Drawing
THU.	Eng. IV. Parts I. II	Eng. VII.	Eng. Lab.	Engineering Lab.		Laboratory
FRI.	Elec. Ia	*Eng. VI.	Drawing	Drawing	Phys. Int.	Drawing
SAT.	Mach. Design	Eng. VII.	Physics Lab.			

* Portion of course to suit individual students.

SYLLABUS OF COURSES

I. First Year Course

Mondays and Fridays, at 4 p.m.

Exercise class at 11.30 on Tuesdays, or at 10.30 on Fridays.

Part I

Strength of Materials: Stress, strain, Young's modulus of elasticity, properties of materials when tested in tension, compression, and shear. Testing Machines.

Strength of bolts, chains, ropes.

Riveted joints: Various systems of riveting, calculations of the pitch and arrangement of rivets for maximum strength; efficiency of joints, lozenge riveting.

Beams: The strength of beams of various sections, rolled joists and girders.

Simple cases of bending moments.

Graphical constructions: Cranes, sheer legs, tripods, suspension chains, simple roof trusses and girders.

Part II

Steam boilers: Descriptions of various types, smoke prevention, mechanical stokers, heating surface, simple heat accounts.

Steam and the steam engine: Brief history of the steam engine, properties of saturated and superheated steam, expansive working, cylinder condensation, valve and piston leakage, jackets, compound engines, indicator diagrams, dynamometers.

Gas and petroleum engines: Description of various types.

Transmission of power: Elementary treatment of shafts, belts, gearing.

Hydraulics: Pressure due to head, simple water motors, pumps, measurement of water, flow in pipes.

Books Recommended.

GOODMAN'S *Mechanics Applied to Engineering.* (Longmans, 9s. net).

RIPPER'S *Steam Engine.* (Longmans, 2s. 6d.)

HILLER'S *Notes on Land Boilers.* (1/- National Boiler Insurance Co., Manchester.)

GROVER'S *Gas and Petroleum Engines.* (Technical Publishing Co., 4s. 6d.)

II. General Engineering

This course is intended to give students who are going into branches of industry other than that of Engineering an intelligent idea of engines and machinery, &c., without entering into minute details.

Course A

Mr. MYERS

(For Students of Leather Industries, Tinctorial Chemistry and Dyeing, Chemical Engineering, Textile Industries.)

Mondays, Wednesdays, and Fridays at 9.30 a.m.

Materials: Strength and properties of cast iron, wrought iron, steel, copper, gun metal, timber.

Fuels: Solid, liquid, gaseous, heating power, air required, &c.

Boilers : Cornish, Lancashire, Vertical. Setting of Cornish and Lancashire Boilers.

Multitubular. Locomotive, portable.

Water Tube. Stirling, Babcock & Wilcox, &c.

Fittings. Safety valves, steam gauges, clack box, water gauges, fusible plugs, stop valves, drain cocks, &c.

Economisers and Superheaters.

Determination of efficiency with special reference to the importance of covering with non-conductors, keeping boilers and flues clean and preventing leakage of air through brickwork, &c.

Mechanical Stokers, forced draught, and smoke prevention.

Injectors, Ejectors, Pulsometers.

Joints for pipes, cylinder covers, stills, &c., to withstand various agents.

Steam Engines : Mill, Corliss, Locomotive, High Speed, Steam Turbines, &c.

Details: Slide and expansion valves, cylinders, pistons and rods, glands, connecting rods, cranks and crank shafts, governors, fly wheels, condensers and air pumps, superheated steam.

Gas and Oil Engines, principle of action, construction, &c.

Indicators, indicator diagrams, calculations, defects, &c.

I.H.P. B.H.P. E.H.P., and efficiency of engines.

Consumption of fuel and water per H.P. hour.

Hydraulics, general principles, friction of water in pipes.

Pumps, single and double acting, high and low pressure, centrifugals.

Accumulators, presses, hoists.

Prime Movers, other than heat engines : Water wheels, Motors, Turbines.

Transmission of power : Shafting, lubrication, pedestals, hangers, brackets, couplings, friction clutches, belts, ropes, toothed wheels, dynamos, electric motors, &c.

Various kinds of machines : Transference of liquids by means of compressed air or vacuum, hydro-extractors, elevators, grinding machines, edge rolls, ball mills, disintegrators, sifting machinery, stirring and agitating devices, drying plant, fans, water coolers, gas producers, filtration of waste water, &c.

*Air compressors.**Refrigeration* and ice-making machinery.

Choice of materials in the construction of vessels for various purposes: Cast-iron, wrought-iron, copper, silver, aluminium, &c.

Course B

Mr. DUNCAN

(For Agricultural Students)

Mondays, Wednesdays, and Thursdays, at 2 p.m., during the First and Second Terms only.

1. *Mechanics*: Centre of gravity; stability of structures. The lever; toothed wheels; pulleys and ropes; wrapping connectors; winches; differential pulleys. Laws of motion. Strength of materials, tensile, compressive, torsional, and transverse; elastic limit; ultimate strength. Work; horse power; animal and human power. Friction of surfaces and axles; lubrication.

2. *Air*: Properties of air; elasticity, specific heat. Barometer. Moisture. Movement. Winds. Windmills.

3. *Water*: Composition. Weight. Height of column to balance atmosphere. Flow of water. Friction of water in pipes and channels. Usual speed of flow. Power derived from falls of water. Water wheels; turbines; water-pressure engines; pumps. Potable water. Sources of supply. Means of purification. Storage.

4. *Heat*: Nature of heat; thermometer; absolute zero; specific heat; latent heat; the unit of heat. Total heat of water; as ice, water, and steam. Conduction, convection, and radiation of heat. Mechanical equivalent of heat. Principle of combustion. Quantity of heat generated by combustion. Modes of transforming heat of combustion into power, as in the steam engine, and gas and oil engine.

5. *Steam-engine*: Construction of an ordinary portable-engine boiler, of a Cornish boiler, and its setting. Fittings of a boiler. Construction of the stationary and portable steam-engine. Single cylinder. Double cylinder. Compound. Slide-valve. Expansion valve. Cylinder. Piston-rod. Glands. Connecting-rod. Crank and crank shaft. Fly-wheel. Bearings. Pet cocks. Lubrication. Steam and fuel consumed per horse-power.

6. *Gas and Petroleum Engines*: Principle of action. Construction of valve-gear. Sources of loss. Fuel and water required per horse-power.

7. *Electrical Generators, Motors, and Conductors*: Principles of action—shunt; losses in electrical machinery. Efficiency. Detection of faults. Regulation of shunt and series motors. Use of fuses and cut-outs. Horse power of motors, and calculation of Watts to be delivered at terminals. Ohm's law. Losses in conductors, and calculation of sizes to convey given currents with definite losses. Insulation of conductors.

Books Recommended.

Elementary Applied Mechanics, by MORLEY & INCHLEY.
(Longmans, 3/-).

Natural Sources of Power, by BALL. (Constable, 6/.)

Heat Engines, by RIPPER. (Longmans, 2/6).

Course C

MR. THOMSON

(For Mining Students)

Mondays—First and Third Terms, at 4 p.m.

Composition and resolution of forces, parallel forces, funicular polygon. Moments of forces, levers, pulleys, screws, gearing. Work, laws of friction, efficiency of machines.

Stress and strain, the strength and properties of iron, steel, gun metal, timber, ropes, chains.

Heat. Nature and effects of heat on solids, liquids, and gases. Temperature and quantity of heat, specific heat, relation of heat and work. Generation of steam, sensible or liquid heat, latent heat, total heat of steam. Elementary principles of the steam engine, economy in working. Measurement of the indicated and brake horse power. Fuels. Boilers, conditions necessary for economical working explosions.

Laboratory Class

Mondays, throughout the Session, 5.30 to 7 p.m.

Instruction will be given in the Engineering Laboratory in: The triangle and parallelogram of forces. Experimental determination of the forces acting on simple structures.

Levers. Efficiency of machines. Testing bars, pit props, chains, wire ropes. Indicating a steam engine and pump. Boiler and fan testing.

III. Second Year Civil Engineering

MR. GILCHRIST

Tuesdays and Thursdays, at 4 p.m., and Saturdays, at 11.30 a.m.

Part I

General arrangement of a survey.

Chain Surveying: Chains, tapes, and measuring rods. Chaining on flat and sloping ground, over hills, obstacles in chain lines, errors in chaining, offsets, tie lines, booking observations, plotting results, calculation of areas from field-book notes and from plans by planimeter. Various problems in chaining.

Needle Surveys: Prismatic compass and circumferenter, tests and adjustments, declination, magnetic and true north, traversing, latitude and departure. Measurement of areas by chain and compass.

Plane Table: Various methods of using. Sources of error, tests and adjustments.

Angular Instruments: Sextants, uses, optical principle, tests and adjustments. Optical square. Theodolite, tests and adjustments, measurement of horizontal and vertical angles, taking bearings, triangulation, levelling, and measurements of heights.

Levelling: Levels, Dumpy, Wye, Abney. Levelling staffs, targets, correction for curvature of the earth and refraction. Methods of levelling and keeping the field book. Aneroids and their use. Contouring.

Part II

Geodetic Astronomy, finding of the true meridian, latitude and longitude.

Optical Instruments for the Measurement of Distances: Telemeters, tacheometers, range finders; uses, optical principles, tests and adjustments.

Hydrographic Surveying: Location of points on the surface of water, sounding lines of equal depth, measurement of streams, current meters, &c.

Geodetic Surveying: Setting-out of base lines with great accuracy. Triangulation, instruments employed.

Part III

Railways and other lines of communication: General principles of location and design, setting out of straight lines and curves on the surface and in tunnels, superelevation of outer rail on railways, transition curves, calculations of points and crossings, half widths on flat and sloping ground; calculation of volumes of earthwork. Design and construction of cuttings and embankments.

Books Recommended

Surveying and Levelling, by JAS. PARK. (Griffin, 6/-).

Topographical Surveying, by CLOSE. (Wyman, 3/6).

MIDDLETON & CHADWICK'S Surveying. (Spon, 2 vols., 8/6 each).

NOTE: Students are recommended to read chapters 1 to 5 of Ball's Elementary Astronomy (Longmans), or the early chapters of Lockyer's Elementary Lessons in Astronomy (Macmillan), as a preparation for the geodetic astronomy.

IV. Third Year Civil Engineering

MR. GILCHRIST

Tuesdays and Thursdays, at 9.30 a.m., and Saturdays, at 10.30 a.m.

Part I

Girder Bridges: Types of Bridges and arrangement of floor members. Effect of travelling loads for bending moments and shearing forces and their maximum values. Equivalent distributed loads for railway bridges.

Detailed consideration of theory of design of plate girders, box girders, &c. The complete design of a plate girder road bridge will be worked out in detail. Regulations of British and Foreign Governments in regard to design of railway bridges.

Part II

Framed Structures for Bridges: Different types of framed girders, maximum stresses in flange and web members. Design of joints.

Roofs: Types for different spans, methods of support, maximum stresses.

Part III

Limes and Cements: Manufacture and tests. British standard specification. Concrete, methods of preparation, water tightness, reinforced concrete, strength of beams and columns of reinforced concrete.

Theory of Masonry structures: Conditions of stability and strength, masonry arches, piers and masonry dams. Theory of earth pressure, retaining walls.

Part IV.

(To be held on Saturday mornings at 10-30 a.m.)

WATER SUPPLY, SANITARY ENGINEERING AND HARBOUR WORK.

Water supply: Quality and purity of water, sources of supply, quantities available and quantities required. Supplies by gravitation from streams and by wells. Design of works connected with supply and distribution.

Sanitary Engineering: Sanitation of buildings, sewerage of towns, sewage disposal and purification.

Harbour Work: Tides and waves. General principles, types and planning of breakwaters, harbours, docks.

Books Recommended.

WARREN's Engineering Construction in Iron, Steel, and Timber (Longmans, 16s.)

Retaining Walls in Theory and Practise, by COLEMAN. (Spon, 5/-).
L. V. HARCOURT's Civil Engineering (Longmans).

V. Practical Surveying

MR. GILCHRIST

Instruction is given in Surveying and field work during the Easter vacation from March 25th to April 10th. The class is held at Barden in Wharfedale, where accommodation is provided at farmhouses.

Fee: Including board and lodging... £6 6 0

Fee: Including half-time board and lodging 3 3 0

Students who have paid the Composition Fee of £31 will be charged a reduced fee of £4 4s, or for half-time, £2 2s.

Students will be held responsible to the full amount for any damage done to instruments.

VI. Second Year Mechanical Engineering

Mondays, Wednesdays, and Fridays, at 10.30 a.m., with an exercise class one hour a week.

Graphical constructions: Bending moment diagrams, shear diagrams, deflection of beams, setting out valve gear diagrams.

Strength of Materials: The deflection of beams of various sections, built-in beams, combined bending and direct stresses, hooks, struts, effects of end holding, eccentrically loaded columns, the torsional strength and stiffness of shafts, combined bending and torsion, crank shafts, close coiled helical springs, effect of repeated loading on structures.

Air: Properties, specific heats, properties of adiabatics and isothermals.

Steam and the Steam Engine: Wetness of steam, laws of thermodynamics, entropy-temperature diagrams, the heat efficiency of steam engines, steam engine trials.

Steam Boilers: Boiler trials, complete heat accounts.

Gas and Petroleum Engines: Calculation of temperatures produced by the burning of gases and vapours, cooling effect of cylinder walls, effects of compression on the efficiency, analysis of diagrams, complete heat accounts.

Transmission of power: Laws of friction of dry and lubricated surfaces, effect of temperature, intensity of pressure and speed, methods of lubricating, friction of screws, worms, pivots, rolling friction, ball and roller bearings.

Hydraulics: Weirs, orifices, Bernouilli's law, Venturi meter, flow in pipes and channels, pumps.

Books Recommended.

- GOODMAN'S *Mechanics Applied to Engineering* (Longmans, 9s. net.)
RIPPER'S *Steam Engine Theory and Practice* (Longmans, 9s.)
EWING'S *Steam Engine* (Cambridge University Press, 15s.)
ROBINSON'S *Gas and Petroleum Engines* (Spon, 21s. net.)
GARRATT'S *Principles of Mechanism* (Arnold's Science Series, 3s. 6d.)
HOBBS' *Thermo-dynamic Principles of Engine Design* (Griffin, 4s. 6d. net).

VII. Third Year Mechanical Engineering

Course A

(For Civil and Mechanical Engineers)

Tuesdays and Thursdays, at 10.30 a.m., with an exercise class on Saturdays, at 9.30 a.m.

Hydraulics: Centre of pressure of immersed bodies, rational treatment of co-efficients of contraction, velocity and discharge for orifices, &c. Time required for the emptying and filling of tanks, docks, &c. Continuous and sinuous flow through pipes of constant and variable cross section. Friction in pipes and open channels, virtual slope, losses of head due to obstructions. Pressure of jets on various surfaces, application to water motors, hydraulic efficiency of motors. Design of blades for turbines and water wheels. Pumps, reciprocating, inertia effects, slip, centrifugal and other rotary pumps.

Compressed air: Problems in compressing, transmitting and utilizing. Friction of air in long mains. Compressed air pumps for lifting water, refrigeration by means of compressed air.

Strength of Materials: Poisson's ratio, problems in the mathematical theory of elasticity, flat plates, thick cylinders, open coiled helical springs, higher branches of testing, whirling of shafts, vibration.

Kinematics of machines: Analysis of the motions, velocities and accelerations in various mechanisms.

Course B

(For Electrical and Mechanical Engineers)

Saturdays, at 10.30 a.m., with an exercise class on Saturdays at 9.30 a.m.

Dynamics of the Steam Engine: Cushioning for inertia pressures, balancing for reciprocating and rotating masses, twisting moment diagrams, locomotive balancing, balancing simple and complex engines, flywheels, fluctuation of energy and speed, stresses in rims of flywheels, governors, height, power, sensitiveness, hunting, flywheel governors, inertia effects.

Transmission of power by belts and ropes, coil friction, creeping of belts, centrifugal stresses, efficiency of parallel and tapered shafts.

Steam Turbines: Flow of steam through orifices. Design of blades and other details.

Books Recommended.

- GOODMAN'S *Mechanics Applied to Engineering* (Longmans, 9s. net.)
UNWIN'S *Transmission of Power* (Longmans, 10s.)
COTTERILL'S *Applied Mechanics* (Macmillan, 12s. 6d.)
ROBINSON'S *Gas and Petroleum Engines* (Spon, 21s. net.)
RIPPER'S *Steam Engine Theory and Practice* (Longmans, 9s.)
EWING'S *Cantor Lectures on the Mechanical Production of Cold*, 1s.
DURLEY'S *Kinematics of Machines* (J. Wiley & Sons, and Chapman & Hall, 12s. 6d.).
GIBSON'S *Hydraulics and its Applications* (Constable, 16s. net.)
MORLEY'S *Strength of Materials* (Longmans.)

VIII. Engineering Drawing

(Mechanical.)

Mr. MYERS and Mr. THOMSON

The Drawing Department is open every day during working hours. A Draughtsman is always in attendance.

The work consists of tracing, copying and enlarging or diminishing machine drawings, making working drawings from freehand sketches and measurements of the machinery in the engineering laboratory; designing machinery and gearing engine, details, working out valve motion diagrams

(Civil.)

Mr. GILCHRIST

Graphical determination of stresses in roofs, bridges, and other structures; plotting surveys from field book notes. Detailed design of structure.

Instruction is also given in copying drawings and tracings by sun printing.

VIIIa. Machine Design

Saturdays, at 9.30 a.m.

The design of pipe flanges, valves, valve boxes, stuffing boxes, couplings, knuckle and cotttered joints, bearings, hangers, teeth of wheels. Engine details, cylinder connecting rod, bed plate, &c.

The working out of the above designs will be done in the Drawing Department.

Books Recommended.

UNWIN'S Elements of Machine Design, 2 Vols. (Longmans, 10s. 6d.)

LOW & BEVIS, Manual of Machine Drawing and Design (Longmans, 7s. 6d.)

SPOONER'S Machine Design, Construction and Drawing. (Longmans, 10s. 6d. net.)

VIIIb. Machine Drawing and Graphics

Saturdays, at 10.30 a.m.

Principles of projection.

Geometrical analysis of mathematical operations, Archimedean and logarithmic spirals, loci, link, parallel and straight line motions, cams.

Interpenetrations of prismoidal, pyramidal, spherical, and polyhedral bodies, development of surfaces, isometric projection.

IX. Engineering Laboratory

The work done in this department consists chiefly of making experiments and testing operations; it in no way whatever pretends to supersede the practical training that every Engineer must undergo in Engineering works. It should be clearly understood that no instruction is given in the use of either hand or machine tools; such work can only be properly done in Engineering works.

The experimental work consists of systematic instruction in the strength and properties of the chief materials used in Engineering construction. The work, as far as possible, is done on a large and practical scale to illustrate and verify the instruction given in the lectures. The equipment of the department consists of:

A 100-ton Buckton testing machine, which will deal with full-sized bridge ties, struts, columns, rolled joists, girders, floors, rails, chains, ropes, &c. Fitted with autographic recorder.

An "Olsen" 50,000 lbs. testing machine, for tension, compression and bending.

A Denison testing machine for lighter work in tension, torsion, and bending.

A Denison machine for testing the hardness of metals.

A microscope and appliances for studying the structure of metals.

A Wöhler testing machine for studying the effects of repeated loadings on materials, at both high and low temperatures.

Appliances for wire testing.

A 30-horse power compound steam engine and boiler, with natural and forced draught, fitted up expressly for experimental purposes; it can be worked under a great variety of conditions to demonstrate practically the conditions which tend to produce either economy or waste. The valves are so arranged that they can be wrongly set for giving instruction in valve setting, and the engine otherwise disarranged to illustrate the various defects to which engines are liable.

A 70-horse power compound Willans high-speed steam engine.

A McPhail and Simpson superheater, separately fired.

A "De Laval" Steam Turbine.

Apparatus for studying the flow of steam through nozzles.

Apparatus for analysing the furnace gases from boilers.

Calorimeters for measuring the heating power of solid and liquid fuels.

Apparatus for measuring the wetness of steam.

A 10-horse power steam engine, coupled to a 6-ft. Guibal fan, for experiments on fan efficiency.

A 6-ft. Capel fan driven by an electric motor.

A 3-ft. high pressure Capel fan.

A high pressure Schiele fan.

A 12-horse power Campbell oil engine.

A 15-horse power Otto cycle gas engine.

A Petrol engine.

A Linde ammonia refrigerating plant.

Transmission and absorption dynamometers.

A compound Ingersoll-Sergeant air compressor.

A Westinghouse air pump.

A machine for testing the friction of bearings on a 6-inch axle, under loads of 10 tons.

A Warren girder of 14-ft. span, fitted with apparatus for measuring the forces in the various members.

Apparatus for studying the explosion of gaseous mixtures, governors, work stored in flywheels, &c.

Hydraulic appliances, including a centrifugal pump, capable of lifting 75,000 gallons of water per hour, measuring tanks up to 25,000 gallons capacity, Pelton wheel, water meter, weirs, orifices, nozzles, &c. Apparatus for determining the friction of water in pipes, and the pressure of jets on surfaces.

A Berry's hydraulic test pump, working up to a pressure of 5 tons per square inch.

A 6in. \times 4in. high pressure reciprocating pump, with separate measuring tank, tumbling bay, &c., and complete apparatus for studying the action of the valves, water hammer, &c.

A duplex Worthington pump.

A pulsometer steam pump and steam injectors.

A Gilkes' "Vortex" turbine, fitted with a Kent's Venturi water meter and tumbling bay.

(For Civil Engineering Students)

Testing the strength of brickwork, brick arches, stone, concrete, Portland cement, mortar, timber, beams, struts, ropes, chains, &c.

Measuring the stresses in the members of a Warren girder, and the links of a suspension bridge.

Measuring the flow of water in pipes, over weirs, through orifices, water meter testing. Experiments on a centrifugal pump.

Engine tests, pulsometer pump tests.

Tests and adjustments of measuring and surveying instruments.

Every student will be held responsible for the apparatus with which he is working, and will be required to make good any damage. A deposit of 10s. 6d. will be required, from which 1s. will be deducted for stationery, also fines (if any) for breach of regulations. If the machinery is required for private use by the student after ordinary working hours, a further charge will be made. The balance will be returned in the event of no damage being done to apparatus, but the student's liability is not limited to the above amount.

On application an illustrated pamphlet giving full particulars of the Laboratory will be sent.

Research Students

Research Students are admitted to the Laboratory on reduced terms. For particulars see page 131.

Mathematics I.—First Year Course for Engineers

MR. DUNCAN.

Mondays, Wednesdays and Fridays at 9.30 a.m.

Logarithms and the slide rule.

Conversion of units.

The mensuration of the chief curves and solids met with in practice. Elements of spherical geometry.

Algebra. The solution of quadratic, exponential and logarithmic equations. Variation, partial fractions. Progressions. The binomial theorem.

Trigonometry. The elements of trigonometry to the solution of triangles.

Graphics. Curve plotting. The equation to a curve. The determination of laws. The graphical solution of equations. The slope and area of a curve.

Books recommended:

- DUNCAN'S "Practical Curve Tracing." (Longmans, 5/-, net.)
 HALL & KNIGHT'S "Elementary Algebra." (Macmillan, 4/6.)
 LOCK'S "Trigonometry for Beginners." (Macmillan, 2/6.)
 SAXELBY'S "A Course in Practical Mathematics." (Longmans, 6/6.)
 LONGMANS' "School Mensuration." (Longmans 2/6, net.)

Mathematics II.—Second Year Course for Engineers

MR. WATSON

Mondays, Wednesdays and Fridays at 9.30 a.m.
 Graphical methods.
 Differential and Integral Calculus.

Mechanics.

MR. DUNCAN

Tuesdays and Thursdays at 9.30 a.m., and an exercise class on Thursdays at 11.30 a.m.

Statics.

Resolution and Composition of Forces.
 Moments; Couples.
 Centre of Gravity.
 Simple Machines; Velocity Ratio; Mechanical Advantage; Efficiency.

Dynamics.

Velocity and Acceleration; Acceleration due to Gravity.
 Angular Velocity and Acceleration.
 Addition and Subtraction of Vectors.
 Force; Newton's Laws.
 Mass; its Measurement; Momentum; Impulse.
 Work and Energy; The Conservation of Energy.
 Power.
 Circular Motion; Centrifugal Force.
 Moments of Inertia.

The C.G.S. and the British Non-Gravitational Systems of Units.

Specific gravity.

Text Book Recommended

MORLEY'S *Mechanics for Engineers* (Longmans, 4s. net).

Special Course of Electrical Engineering for Mechanical Engineering Students

Lectures Ia

Mondays, Wednesdays, Fridays at 9.30 a.m.

Electrical units; principal laws of resistance; electro-magnetism in relation to commercial applications; fundamental principles and commercial applications of electro-static and electro-magnetic induction; commercial instruments and methods of measuring current, resistance, pressure, power, and energy; electric incandescent lamps; electric arc lamps; secondary cells; construction, action, efficiency and regulation of (a) direct current generators and motors, (b) of alternating current generators and motors (single- and poly-phase); systems of electric distribution; rotary and static transformers, rectifiers, and boosters; important fundamental principles in single- and poly-phase alternating currents.

Laboratory Ia

Tuesdays from 2 to 5 p.m., second and third terms.

Measurement of resistance, current, and pressure by commercial methods; insulation, resistance, and localisation of faults; relation between E.M.F. speed and excitation in direct and alternating current generators; electrical and mechanical characteristic efficiency curves of direct and alternating current (single- and poly-phase) generators and motors, rotary converters, rectifiers, transformers, and boosters, from which the behaviour and regulation of such appliances will be practically determined; measurements showing the extreme importance commercially of a fundamental knowledge of electro-static and electro-magnetic induction with alternating currents.

ELECTRICAL ENGINEERING

Mr. PARR

Mr. FRENCH

The complete course of instruction in Electrical Engineering is specially designed to meet the requirements of, and to provide a systematic training for, students purposing to become electrical engineers, and to enable them to acquire a sound knowledge of the scientific basis of the profession. It comprises (a) Lectures, (b) Exercises, (c) Electrical Design and Drawing, (d) Practical Work in the Laboratories.

Each student will be generally practised as far as possible in the manipulation, uses, and working of electrical apparatus, appliances, and machinery which he will meet with on entering the commercial side of his profession. The fact, however, that *a sound knowledge and actual practice in certain branches of mechanical engineering are of paramount importance to an electrical engineer*, must on no account be lost sight of, especially for those purposing to become Central Station Engineers. It is desirable that, when possible, students should have some practical experience in Engineering Works before taking up the University course.¹ However practical a course of instruction at a University may be, it cannot provide the kind of practical experience obtainable in a works or central station. Such however can be easily and rapidly acquired by a student who has attended a University.

Choice of Courses

Students in this Department can enter for one of the following Courses of Study:

(a) Students who have passed the Matriculation examination are recommended to present themselves for the University B.Sc. degree.

(b) Those who have not passed the Matriculation examination are recommended to present themselves for the University Diploma, and also, if possible, the examinations of the Institution of Civil Engineers.

Entrance Examination

Students entering this department who have not matriculated must satisfy the Entrance requirements prescribed on page 303.

¹ See a pamphlet published by the University on "The Training of Professional Engineers." The Registrar will forward a copy on application.

Degree of B.Sc. in Electrical Engineering

The degree course covers three years and can only be entered upon after the matriculation examination (held every July and September) has been passed. Students are strongly recommended to take this course.

The following courses of study are suitable for students who wish to take a B.Sc. degree:—

MATRICULATION, before leaving school.

(1) English Language and Literature, and English History.

(2) Mathematics, including an additional paper in Trigonometry.

(3) Elementary Mechanics.

(4) Chemistry.

(5) Either French or German, or some other language approved by the Board.

INTERMEDIATE, at end of first year.

(1) Mathematics (two papers).

(2) Physics (with practical examination).

(3) Chemistry (with practical examination).

(4) An Essay.

INTERMEDIATE, at end of second year.

Applied Mechanics.

ORDINARY DEGREE

FINAL, at end of third year.

Defined by Lectures I, II, III and IV.

Electrical Engineering, principal subject.

Heat Engines and Dynamics of Machinery.

Electrical Generation and Transformation of Energy.

Electrical Distribution of Energy.

Electrical Design and Drawing, one day.

Electrical Laboratory, one day.

Subsidiary subjects, at end of second or third years:

Mathematics.

Physics, or Mechanical or Civil or Mining Engineering.

Translation from French or German.

Sample drawings done by the candidate, also his laboratory books must be handed in for the external Examiner to inspect.

The candidate must produce a certificate of having satisfactorily attended a prescribed course in Physics.

HONOURS DEGREE

INTERMEDIATE, at end of second year.

Applied Mechanics.

FINAL, at end of the second or third year.

Pure Mathematics.

Applied Mathematics.

Electrical Engineering, at end of third year.

Generation of Electrical Energy.

Transformation of Electrical Energy.

Distribution of Electrical Energy.

Design of Electrical appliances.

Mechanical Engineering.

Heat Engines.

Electrical Laboratory, two days.

Translation from French or German.

Sample drawings done by the candidate, also his laboratory books must be handed in for the external examiner to inspect.

Regular Non-Degree Courses

Students who are unable to enter for the preceding degree course may take up a regular DIPLOMA COURSE in ELECTRICAL ENGINEERING extending over THREE YEARS, but a modification of this course to TWO YEARS may in *special cases* be sanctioned for students who are able to produce satisfactory proof that they have a *sufficient knowledge of the whole of the first year's work* to commence at the beginning of the second year, and to follow the course of instruction therefrom, in which case they may have exemption from attendance on the first year course. Application must in such cases be made to the Registrar at the commencement of the student's course. It cannot be too strongly pointed out to intending students that an Electrical Engineering course of less than three years' duration is very unsatisfactory to the University and much more so to the student himself, as it is quite impossible to get in the amount of work which is necessary in order that the student may be sufficiently benefited thereby afterwards.

The Institution of Civil Engineers now requires that all candidates for membership shall take an Honours Engineering degree or shall pass an equivalent examination before being admitted.

All Engineering students of this University who have passed the Leeds Matriculation (including two Science subjects and an additional paper in Trigonometry) or other prescribed examination are eligible for election as Students of the Institution of Civil Engineers—the first step towards becoming a Member (M.Inst.C.E.). They are then entitled to attend the Meetings and Excursions of the Local Branch of the Institution of Civil Engineers and to receive four volumes of Proceedings per annum. Müller Scholarships and Prizes, value from £10 to £120, are awarded by the Institution for papers read by Students at either the Local Branches or at Head Quarters. Free Studentships for a period of two years are awarded to all students elected from this University, who have obtained a first class in the second year's examination, and have undertaken research work to the satisfaction of the Professor, the results of which must be forwarded to the Institution in the form of a Student's Paper.

Students who have not passed the Matriculation examination are strongly advised to take the Studentship examination of the Institution of Civil Engineers during their second year, and the Associate Membership examination during their third year.

Only those students of Electrical Engineering who have gone through the complete or modified course of instruction, and have satisfactorily passed the several examinations, including the final practical one, and who have also obtained a satisfactory percentage of the total marks *not only for their electrical exercises, design, and laboratory work, but also in Engineering, Mathematics, and Physics* throughout the above course will be awarded the Diploma and will be proposed for admission to the Institutions of Civil, Mechanical or Electrical Engineers.

The instruction during the first year of the complete course is the same for Civil, Mechanical, and Electrical Engineering students.

In the second year the student specialises more in his particular department; and in the third year he devotes most of his time to this department, attending three courses of lectures on advanced Electrical Engineering.

If a student fails more than once to satisfy the requirements of his class examinations in any subject, he will be

required to repeat the course in which he fails before proceeding to the higher course, and if he fails to pass in any of his examinations in Engineering I and Electrical Engineering I he will not be allowed to re-enter except on the special recommendation of the head of the department.

Special or Partial Courses

In the event of any person being unable to afford the time for either the complete or modified courses as above, he may be allowed to attend portions of the regular course if he furnishes proof that he possesses sufficient knowledge to follow the instruction. He must personally see the head of the department, and it will be to his advantage to select, if possible, his laboratory work in accordance with the Time Tables for Degree students.

A course of instruction extending throughout the Session will be given to Mining students in Electrical Engineering. The course will consist of lectures and in *testing and using* many of the Electrical appliances met with in Mining work, &c. Text books recommended: *Electricity as applied to Mining*, by Lupton, Parr & Perkin (Crosby Lockwood, 12s. net), Parr's *Electrical Engineering in Theory and Practice* (Macmillan & Co., 12s. net).

Classes are held for working electrical engineering problems, the electrical design of direct current dynamos and motors, alternating current generators, motors, transformers and high tension condensers. Students will be furnished with opportunities for constructing and repairing electrical apparatus in the Electrical Engineering Workshop.

Every Student will be held responsible for the apparatus with which he is working, and will be required to make good any damage. A deposit of 10s. 6d. will be required, from which fines (if any) for breach of regulations and cost of repairs to damaged apparatus will be deducted. The balance will be returned in the event of there being no fines and no damage done to University apparatus, but the student's liability is not limited to the above amount.

During the Session courses of lectures and laboratory instruction will be given on:—(I) Electro-technology; (II and III) Advanced electrical engineering; (IV) Electrical design.

TIME TABLES

18. Ordinary and Honours Degrees

FIRST OR INTERMEDIATE YEAR COURSE FOR CIVIL,
ELECTRICAL, AND MECHANICAL ENGINEERING.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Eng. Laboratory		Chem. Int.	Math. Int.	*Physics Int.	Eng. I.
TUE.	Drawing	Drawing	Math. F1	Chemical Laboratory		
WED.	Eng. Laboratory		Chem. Int.			
THU.	Drawing	Drawing	Math. F1	Physics Laboratory		
FRI.	Chem. Exercise Class	Eng. I. Exercise Class	Chem. Int.	Math. Int.	Physics Int.	Eng. I.
SAT.	Drawing	Machine Drawing Lecture	Physics Lab.			

19. Ordinary Degrees

SECOND YEAR COURSE FOR ELECTRICAL ENGINEERING,
with Mechanical Engineering as the subsidiary subject.

	9.30 to 10.30	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Drawing	Eng. VI.	Math F2	Elec. I.	Drawing	Drawing
TUE.	Engineering Laboratory			Engineering Laboratory		
WED.	Drawing	Eng. VI.	Math. F2	Drawing	Drawing	Drawing
THU.	Elec. Engineering	Lab.		Elec. Eng. Lab.		Elec. I.
FRI.	Drawing	Eng. VI.	Math. F2	Elec. I.	Drawing	Drawing
SAT.	Mach. Design.	Mech. Ex. Class				

It may be advisable for students who have not done well in Maths. F1 in their first year to repeat a part of the course during the third term of their second year.

20. Ordinary Degrees**THIRD YEAR COURSE FOR ELECTRICAL ENGINEERING**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Elec. Design	†Phys. Fr. †E. E. Ex. Class	Elec. Design and Draw.	Elec. De sign and	Drawing	
TUE.	Electrical ing Lab.	*Eng. VIIA	Elec. II	Electrical	Engineer ing Lab.	
WED.	Mechanical	Engineering Lab.		Electrical	Engineer ing Lab.	
THU.	Elec. De sign and Dra wing	*Eng. VIIA	Elec. III	Mechanical	Engineer ing Lab.	
FRI.	Elec. Eng. Lab.	†Phys. Fr. †E. E. Ex. Class	Elec. IV	Electrical	Engineer ing Lab.	
SAT.	Eng. Excs.	Eng. VIIB				

* Optional.

† Second Term only.

‡ First and Third Terms only.

21. Honours Degrees**SECOND YEAR COURSE FOR ELECTRICAL
ENGINEERING**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Math. F ₃	Eng. VI.	Math. F ₂	Elec. I.	Drawing	Drawing
TUE.	Mech.	Eng. La by.		Mech.	Eng. La by.	
WED.	Math. F ₃	Eng. VI.	Math. F ₂	Drawing	Drawing	Drawing
THU.	Elec.	Eng. La by.		Elec. Eng. La by.		Elec. I.
FRI.	Math. F ₃	Eng. VI.	Math. F ₂	Elec. I.	Drawing	Drawing
SAT.	Machine Design	Mech. Exer. Class				

22. Honours Degrees**THIRD YEAR COURSE FOR ELECTRICAL
ENGINEERING**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Elec. Design	†Phys. FI ‡E.E. Ex. Class	Elec. Design and Draw.	Elec. Design and		Drawing
TUE. ..	Elec. Eng. Lab.	*Eng. VIIA	Elec. II	Elec.	Eng.	Laby.
WED. ..	Mechanical	Engineering	Lab.	Electrical	Engineering	Lab.
THU. ..	Elec. Design and Drawing	*Eng. VIIA	Elec. III	Mech.	Eng.	Laby.
FRI. ..	Elec. Eng. Lab.	†Phys. FI ‡E.E. Ex. Class	Elec. IV.	Electrical	Engineering Lab.	
SAT. ..	Eng. Excs.	Eng. VIIB.				

* Optional.

† Second Term only.

‡ First and Third Terms only.

23. Courses for Students not taking Degrees**FIRST YEAR COURSE (Civil, Electrical, Mechanical)**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Math. I	Engineering		Laboratory		Eng. I
TUE. ..	Mechs.	Drawing	Eng. I Exercise Class	Drawing	Drawing	Drawing
WED. ..	Math. I	Engineering Lab.		Engineering Laboratory.		
THU. ..	Mechs.	Drawing	Mechs. and Maths.	Drawing	Drawing	Drawing
FRI. ..	Math. I	Engineering		Laboratory		Eng. I
SAT. ..	Drawing	Machine Drawing Lecture	Eng. I			

24. Courses for Students not taking Degrees**SECOND YEAR COURSE (Electrical)**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Math. II	Eng. VI	Drawing	Elec. I	Phys. Int.	Drawing
TUE. ..	Mech.	Eng. Lab.		Mech.	Eng. Lab.	
WED. ..	Math. II	Eng. VI	Drawing	Drawing	Drawing	Drawing
THU. ..	Elec.	Eng. Lab.		Elec. Eng. Lab.		Elec. I
FRI. ..	Math. II	Eng. VI	Drawing	Elec. I	Phys. Int.	Drawing
SAT. ..	Machine Design	Eng. Exer. Class				

25. Courses for Students not taking Degrees**THIRD YEAR COURSE (Electrical)**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Elec. Design	*Phys. FI †E.E. Ex. Class	Elec. Design and Draw.	Elec. De sign and		Drawing
TUE. ..	Elec. Eng.	‡Eng. VIIA Lab.	Elec. II	Elec.	Eng.	Laby.
WED. ..	Mechanical	Engineering Lab.		Elec. Engineering		Laboratory.
THU. ..	Elec. De sign and Draw	‡Eng. VIIA *Phys. FI †E.E. Ex. Class	Elec. III	Mech.	Eng.	Laby.
FRI. ..	Elec. Eng. Lab.		Elec. IV	Elec. Engineering		Laboratory.
SAT. ..	Eng. Excs.	Eng. VIIB				

* Second Term only.

† First and Third Terms only.

‡ Optional.

26. Special Two Years' Course

FIRST YEAR

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Math. II	Engineering Lab.	Elec. I.	Phys. Int.	Eng. I.	
TUE. ..	Mechs.	Drawing	Drawing	Drawing	Drawing	
WED. ..	Math. II	Engineering Lab.	Eng. Lab.	Eng. Lab.	Eng. Lab.	
THU. ..	Mechs.	Elec. Eng. Lab.	Elec. Eng. Lab.	Elec. I.		
FRI. ..	Math. II	Engineering Lab.	Elec. I.	Phys. Int.	Eng. I.	
SAT. ..	Exercise Class	Drawing	Drawing			

27. Special Two Years' Course

SECOND YEAR

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Elec. Design and Draw.	Eng VI.	Elec. Design and Draw.	Elec. De sign and	Drawing	
TUE. ..	Elec. Eng Labor	*Eng. VIIA inengineering atory	Elec. II	Elec. Eng.	Laby.	
WED. ..		Eng. VI.		Elec. Eng inengineering L	Laboratory	
THU. ..	Elec. De sign and Draw ing	*Eng. VIIA	Elec. III	Mech.Eng inengineering L	Laboratory	
FRI. ..	Elec. Eng. Lab.	Eng. VI.	Elec. IV.	Elec. Eng inengineering L	Laboratory	
SAT. ..		Eng. VIIIB				
		Mach ine Draw ing				

* Optional.

Research Students

Research Students are admitted to the Electrical Engineering laboratories on reduced terms. For particulars see page 131.

SYLLABUS OF COURSES

I. Second Year Lecture Course

Mondays and Fridays, from 2 to 3 p.m., and Thursdays from 4 to 5 p.m. throughout the Session.

Second year students attend a course of lectures on Electro-Technology. The subjects treated will embrace absolute and practical electrical units—their derivation; measurement of currents, potential differences, resistances, power, and energy; construction and action of ammeters, voltmeters, ohmmeters, resistances, condensers wattmeters, coulombmeters, ergmeters, electro-dynamometers, and other electrical measuring instruments; principles of electro-magnetism, induction, permeability, hysteresis; electro-magnetic induction; measurement and laws of combination of self and mutual inductions; principles of construction, characteristics, efficiency, coupling and conditions of automatic and self-regulation of direct and alternating current dynamos and motors for constant pressure and current; boosters; types of armatures and field magnets; governing motors to run at constant speed; relations between current and torque in series and shunt and compound motors; application to lifts and traction; speed reducing gear; load curves and their effect on all day efficiency; construction, capacity, life and management of secondary cells; comparison of all the well-known present-day types; use as regulators for small plants and as balancers for three-wire system; construction, life, candle-power, and efficiency of glow and arc lamps—open, enclosed, and inverted; distribution of light; absorption by globes; comparison of direct, rectified, and alternating current arcs; distribution of electricity by series, parallel, three-wire, and five-wire

systems ; regulating appliances ; transformers—their construction and uses ; direct current transformers ; rotary converters ; secondary cells as transformers ; substations ; comparison of efficiency with various systems of distribution, electric welding — Thomson and Bernardo's processes ; electric brazing ; electrolytic deposition of metals ; safety devices ; TELEGRAPHY—the most important instruments ; signalling through land lines and submarine cables ; simplex, duplex, and multiplex systems ; wireless telegraphy ; TELEPHONY—transmitters, receivers, metallic circuits, trunk lines ; multiple call systems ; Phonophore multiple cables ; testing and localising faults in telegraph and electric light mains ; wireless telephony.

Books recommended

PARR'S Electrical Engineering Measuring Instruments (Blackie & Sons, 9s. net).

PARR'S Electrical Engineering in Theory and Practice (Macmillan & Co., 12s. net.)

Second Year Laboratory

The work will include amongst other things :—

Commercial methods of testing direct and alternating current ammeters, voltmeters, wattmeters, electricity supply meters and other important measuring instruments ; measurement of capacity of high and low tension condensers and cables ; permeability ; hysteresis ; self and mutual induction ; insulation resistance of circuits, machines, and cables by Silvertown portable testing set and other methods ; resistance of liquids ; magnetic leakage, &c. ; measurement of efficiency and candle power of electric arc and glow lamps ; efficiency, internal resistance, and management of secondary batteries ; together with a jointing course in electric light cables of various sizes up to 37/16, lead covered cables, and 0.1 square inch concentric armoured street main ; the electrical and mechanical properties of which the student will afterwards test.

Each second year student will be required to provide himself with a copy of Parr's Practical Electrical Testing (Longmans, Green, and Co., 8s. 6d.).

1a. Lecture and Laboratory Course for Mechanical Engineers

This course is specially arranged and chosen so as to give Ordinary, Honours, and Non-Degree Mechanical Engineering students a clear knowledge of Electrical Engineering more particularly in its relation to their own work.

LECTURES.—Mondays, Wednesdays, and Fridays, 9-30 to 10-30 a.m.

LABORATORY.—¹Tuesdays, 2 to 5 p.m.

II. and III. Third Year Lecture Courses

Tuesdays and Thursdays, from 11.30 to 12.30 p.m., throughout the session.

Course II will deal with alternating current work, and Course III with continuous current work.

The subjects treated will embrace : Electric transmission and distribution of power by continuous and alternating currents, treated practically, and from an economic point of view ; electric traction systems with surface contact, trolley wire, self contained (battery), third rail and underground conduit ; auto-car traction ; rail bonding ; controllers, gearing ; relative cost of electric traction as compared with horse, steam, compressed air, and oil traction ; theory and measurement of current, voltage, and power in alternating single-phase and multiphase current circuits containing self and mutual induction, ohmic resistance and capacity, and the effects of these with such currents ; size of "feeders" and mains in distributing systems ; generation, transformation, and distribution of multiphase currents.

IV. Third Year Lecture Course

Lectures on Fridays at 11.30 a.m., and Designing and Drawing on Mondays 11.30 a.m. to 12.30 p.m. and 2 to 5 p.m., and Thursdays 9.30 a.m. to 11.30 p.m.

¹ 2nd and 3rd Terms only.

This Course on Electrical Design consists of lectures on the general principles underlying electrical design, and also the complete mechanical and electrical design of direct and alternating current dynamos and motors, high tension condensers, alternating and continuous transformers, and the complete design, with estimate, of the electric light installation in a house.

Students will themselves design and draw from new data the machines and appliances enumerated in the course.

Third Year Laboratory

The work is of a more advanced and technical character than that of the second year, and will comprise:—Relations between E.M.F. and speed in direct current dynamos and alternators; characteristics, output, H.P., and efficiency of continuous current dynamos, motors, alternators, transformers, and rectifiers, using laboratory and commercial methods; calibration of high tension instruments; E.M.F. and current curves of alternators and transformers; measurement of power developed in alternating single-phase and multiphase current circuits; practical methods of measuring magnetic leakage in dynamos; tests employing multiphase currents; efficiency tests on multiphase rotatory converters; combined efficiency tests on a motor generator set; on a tramway set; on an engine dynamo set; and on a motor fan set; tests employing high tension condensers with alternating currents; investigations of wave forms by the oscillograph. Arrangements are also provided for instructing students in throwing into phase two single-phase or polyphase alternating currents.

Each third year student will be required to provide himself with a copy of Parr's *Advanced Electrical Engineering Testing* (Chapman and Hall, 9s. net).

MINING

Assisted by the Drapers' Company of the City of London, and
by the West Yorkshire Coal Owners' Association, and the
West Riding County Council

PROFESSOR

MR. BOWEN

Courses of Study

[N.B.—The Courses set forth in this department are under revision and some alterations may be made before the beginning of the session].

There are four distinct courses of study arranged in this department to meet the requirements of different classes of students, viz :

1. A three years' course in General Mining, leading to the degree of B.Sc. in Mining.
2. A two years' course in Coal Mining, qualifying for the Diploma in Coal Mining.
3. A combined afternoon and evening course.
4. A course of Elementary Science applied to Mining for teachers in mining districts.

Students entering for courses 1 or 2 must produce certificates of having passed either the Matriculation examination, the Oxford or Cambridge Local examination in Mathematics, London University examination or other approved examination, or they will be required to pass the following special entrance examination in each subject. Students under 17 have to take a paper on English Composition in addition.

ENTRANCE EXAMINATION¹

(Time allowed, three hours.)

Arithmetic: The ordinary rules of Arithmetic including vulgar and decimal fractions, proportion, factors, H. C. F.

¹ The Examination will be held on Tuesday, October 3rd, 1911, the English subjects at 10 a.m. and the Mathematical subjects at 2 p.m., and on Tuesday, July 2nd, 1912 at 2 p.m. in the Mathematical subjects only. Students should send in their names beforehand. The July Examination may be taken at any place convenient to the candidate provided suitable invigilation can be secured. Students who have attended Evening classes at the University and have taken a satisfactory position in the Examination will be exempted from this Examination.

and L. C. M., practice, square root, conversion from English to Metric system, averages, percentages, interest.

Algebra: The ordinary rules of Algebra including fractions, brackets, simple equations with problems. H. C. F. and L. C. M.

Geometry: The first book of Euclid or its equivalent, including riders.

Trigonometry: Simple problems involving the trigonometrical ratios.

Every student is required to pass in each subject.

Students who can devote three years to attendance at the University are strongly recommended to take the B.Sc. degree. Students intending to read for a degree must pass the Matriculation examination conducted by the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield.

I. Ordinary B.Sc. Degree Course in General Mining¹ (Three Years)

This course of instruction is arranged for students who desire to qualify themselves as Mining Engineers, Surveyors, or Assayers, and also for those who intend, in the future, to take charge of mining and prospecting operations in the colonies or foreign countries. During the first year the student applies himself entirely to general science and Engineering, preparing for the Intermediate examination. In the second year he continues his work in general science and Engineering, adding Electrical Engineering and the introductory lectures on Coal Mining. In the third year

¹ Graduation as B.Sc. on the Mining course prescribed has been recognised by the Secretary of State for the Home Department as equivalent to two years' experience at a mine for the purposes of the Colliery Manager's Certificate.

First Year Time Table.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Eng. Laboratory		Chem. Int.	Math. Int.	Phys. Int.	Eng. I.
TUE. ..	Chemical Laboratory			Chemical	Laboratory	
WED. ..	Eng. Laboratory		Chem. Int.			
THU. ..	Drawing	Drawing	Drawing	Physics	Laboratory	
FRI. ..		Eng. Ex. Class	Chem. Int.	Math. Int.	Phys. Int.	Eng. I.
SAT. ..	Drawing	Mac. Draw Lecture.	Eng. I.			

Second Year Time Table.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Elec. Eng. Ia.	Eng. VI.				Drawing
TUE. ..	Engineering Lab. or Drawing		Math. F1.	Elec. 2nd	Engineering Lab. and 3rd Terms.	
WED. ..	Elec. Eng. Ia.	Eng. VI.	Drawing.	Mining	Lab. and	Drawing.
THU. ..	Engineering Lab.		Math. F1.	Engineering	Laboratory.	
FRI. ..	Elec. Eng. Ia.	Eng. VI.	Drawing.	Coal Mining.		Drawing.
SAT. ..	Machine Design.	Ex. Class				

Third Year Time Table.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Mining.		Math. F2	Geol. F1	Geol.	Laby.
TUE. ..	Mining			Laboratory	and Drawing.	
WED. ..	Mining.		Mining Lab.		Mining	Laby.
THU. ..	Mining			Laboratory	and Drawing.	
FRI. ..	Mining.	Geol. Lab.	Math. F2	Geol. F1	Geol.	Laby.
SAT. ..	Geological Field		Course.			

II. Honours B.Sc. Degree

Honours in Mining will be awarded to candidates, who, having taken the Ordinary B.Sc. degree in Mining and being recommended as suitable to proceed with an Honours course, shall have spent one year in research or in the preparation of a thesis on some Mining subject, to the satisfaction of the examiners. The candidates must have in addition taken Mathematics as a principal subject. Attendance at the University during this fourth year is optional.

III. Diploma Course in Coal Mining¹ (Two Years)

This course is arranged for those who intend to devote their attention to Coal Mining at home, and who, at the same time, desire to get a liberal training in the scientific principles underlying their profession.

Students entering this course apply themselves mainly during the first year to general science and engineering. In the second year the work in Electrical Engineering is continued; Geology is added, but students devote themselves mainly to the special mining work, taking the lectures on Mining and those on Metallurgy which deal with fuel, refractory materials, and the properties of metals and alloys. In the laboratory students receive instruction in the testing of fuel, safety lamps, fans, &c., and conduct experiments on coal washing. The remainder of their time is spent in making drawings of machinery used in mines, plan drawing, and in the course of field and underground work in Surveying.

Students are required to obtain four months' experience at a mine during the vacations, or to have had previous experience at mines before entering on the course.

Syllabus

<i>First Year</i>	
Mechanics	Chemical Laboratory, three hours
Chemistry Int. (two terms)	Engineering Laboratory, eight
Mathematics I.	Drawing, five hours [hours
Engineering I.	Mine Surveying Drawing, three
Coal Mining	hours

¹ Possession of the Diploma has been recognized by the Secretary of State for the Home Department as equivalent to two years' service in the mine for the purposes of the Colliery Manager's certificate.

Second Year

Mining
Surveying, &c. (two terms).
Geology F1
Geological Laboratory, three
hours

Electrical Engineering Course Ia
and Laboratory, three hours
Mining Laboratory and Surveying,
fifteen hours

First Year Time Table.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Maths. I.	Drawing	*Chem. Int.	Eng. Lab.		Eng. I.
TUE.	Mechanics	Drawing		Chemical	Laboratory	
WED.	Maths. I.	Drawing	*Chem. Int.	Engineering	Laboratory	
THU.	Mechanics	Drawing	Mechanics Ex. Class	Engineering	Laboratory.	
FRI.	Maths. I.		*Chem. Int.	Coal Mining		Eng. I.
SAT.	Mine Drawing	Surveying	Eng. I			

* First and Second Terms.

Second Year Time Table

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Elec. Eng. Ia.	Mining		Geol. F1	Mining Laboratory & Surveying Courses	
TUE.	Mining Laboratory and Surveying Courses			Electrical 2nd	Engineering Lab. and 3rd Terms	
WED.	Elec. Eng. Ia.	Mining			Mining Laboratory & Surveying Courses	
THU.	Mining Laboratory and Surveying Courses			Mining Surveying Courses	Laboratory and Surveying Courses	
FRI.	Elec. Eng. Ia.	Mining	Geol. Lab.	Geol. F1	Geology Laboratory	
SAT.	Mining Laboratory and Surveying Courses					

LECTURE COURSES

Coal Mining

(Second Year of Mining Three Years' Course.)

Wednesdays, at 2 p.m.

These lectures are intended to co-ordinate the information which students have acquired during the previous vacation, and to show them what to observe in the next summer's work preparatory to the Mining lectures of the third year.

With this object the general processes necessary for the extraction of coal from the ground will be passed in review, while to relieve the lectures of the third year those mining operations which find their best exemplification in coal mining will be discussed in detail.

These lectures are also attended by Diploma students in their first year.

Mining

Mondays, Wednesdays, and Fridays, at 9.30 a.m.

This course will consist of about 90 lectures, which will be delivered during the third year. The object of these lectures will be to explain to students the methods, operations, and appliances commonly employed in mining, with illustrations from actual practice in various districts and countries, and to indicate the principles which should influence the selection of methods and the introduction of such variations in them as local circumstances may demand.

Among the subjects discussed will be the following :

Description of the mode of occurrence of useful minerals and the views held regarding their formation. Economic value of different minerals, and illustrations of the mode of valuation of mineral deposits. Effects of faults and disturbances. Surface changes due to weathering and denudation. Prospecting methods and the outfit of a prospector in a new country. Deep boring as an adjunct to prospecting and development.

Methods of opening out mineral deposits. The tools and mechanical appliances used in breaking ground. Explosives requisite for various purposes, and their properties. So-called safety or permitted explosives. Arrangement of shot holes. The utilization of earth pressure in breaking ground.

Shaft-sinking in ordinary and difficult ground. Sinking by cylinder and shield in running ground, by compressed air, by the freezing and boring system. Shaft linings and supports for workings generally. The design of supports to resist heavy pressures. Coffering. Tubbing and dams. Methods of working mineral deposits occurring as beds, veins, or irregular masses. Hydraulic mining. Brine and petroleum pumping.

Haulage by men or animals, mechanical haulage, aerial ropeway. Winding arrangements for small or large outputs, requirements for deep shafts. Coal-winding, onsetting and banking arrangements.

Drainage of mines, surface drains to prevent influx of water. Adits. Pumping and bailing water.

Gases found in mines. Ventilation of workings by natural and artificial means. Laws governing the flow of air in mines. Theory and description of fans and the testing and comparison of fans. Lighting of mines. Distribution of power in mines. General surface arrangements at collieries and in mines. Principles of cleaning and concentration of ores and coal, and the arrangements adopted. Systems of labour.

Dressing of Minerals

During the second term a course of two lectures a week will be given at times to be arranged. The principal methods and machines adopted for the preparation of coal and ores for the market will be described.

Mine Surveying

During the third term a course of two lectures a week will be given at times to be arranged. These lectures will be supplementary to the course of Field and Underground work, and the subjects discussed will embrace those given under that head.

PRACTICAL WORK

Through the kindness of the Local Coal Owners and Colliery Managers arrangements have been made for instruction of the students at mines in the neighbourhood, not only in underground surveying and in the connection of the underground and surface surveys, but also in general Mining work. The equipment of the department has therefore been designed to serve three purposes :

- (a) To supplement the general training received by the student in the other departments of the University, and direct it to Mining applications.
- (b) To provide apparatus and instruments for the investigation of problems at the pits and for testing the consumption of power and general efficiency of haulage, winding, pumping, ventilating, and coal washing plants.
- (c) To establish conditions and appliances which are not to be met with in the neighbouring pits, as for example in the equipment for the study of ore dressing and in the provision of chambers and galleries for the study of safety lamps under all possible conditions.

An Observatory has been established by the University and contains an 18 in. equatorially mounted reflector, $4\frac{1}{2}$ in. transit instrument, astronomical clock, chronograph, and a series of meteorological instruments.

The surveying students receive the Astronomical portion of their training in the Observatory.

Laboratory Work

A course of instruction in testing fuel and refractory material and the assaying of ores and metallurgical products and in ore dressing, &c., will be given in the Mining Laboratory. Special attention will be directed to the methods suitable for prospectors. In connection with this course two lectures per week will be given during the First Term, at hours to be arranged.

Surveying (Office Work)

During the second term students in the regular course spend their time in plotting surveys, drawing mining machinery, and in general office work in studying the methods of recording field observations, the purposes to which these are applied, and the instruments with which they are made. The drawing work will be supplemented by lectures to prepare the student for the Field and Underground work of the third term.

Surveying (Field and Underground Work)

During the third term a course of instruction in Field work will be given, the students making and plotting their own surveys. This course will include chaining by ordinary chain and steel bands, precautions to be observed in chaining where great accuracy is required and on slopes. Measurements of length by wires. Traversing by dial and theodolite on the surface and underground. Tacheometry. Triangulation survey. Adjustment of errors in traverse and triangulation surveys. Levelling and contouring. Setting out work. Determination of meridian. Connection of the underground and surface surveys.

In the case of Occasional Students the Fees for Laboratory work and Surveying will be according to the time spent by the student in such work.

Elementary Science Applied to Mining

A course of Elementary Science applied to Mining will be given on Saturday mornings from 9-30 a.m. to 12 (noon), commencing Saturday, October 7th, 1911.

The course is intended for teachers in mining districts who are conducting evening classes in Practical Science preparatory to the local mining classes. The subjects discussed will include the properties of matter, particularly materials used in construction; heat, chemistry. Throughout the course two objects will be kept in view, viz., to show how to devise and arrange simple experiments, and to give the teachers attending a wider outlook than their students can possess.

COAL GAS AND FUEL INDUSTRIES

WITH

METALLURGY

Professor BONE

Mr. GRAY

The courses of study in this Department have been drawn up to meet the requirements of students who are preparing for responsible positions either as Gas Engineers or in Fuel and Metallurgical industries.

The courses in Gas Engineering and the Technology of Fuel will chiefly deal with the manufacture and distribution of coal gas and gas lighting problems, by-product coking processes, and the production and application of gaseous fuels for heating and power purposes.

The metallurgical courses, besides dealing with general processes for the concentration and extraction of ores, will be chiefly directed to problems underlying blast furnace and open hearth steel practice, and to the microstructure, physical properties, and heat treatment of steel and other industrial alloys.

The Chair filled by the head of the department has been endowed by special subscription raised by the Institution of Gas Engineers as a memorial to the late Sir George Livesey; the laboratories were built and equipped out of funds provided by the West Yorkshire Coal-owners, supplemented by a special donation of £1,000 by the late Mr. John Bray; the work of the Department is carried out under the auspices of two Advisory Committees, the Livesey (Coal Gas and Fuel Industries) Committee and the Mining Committee.

Degree Course

Students who can devote three years to attendance at the University are strongly recommended to take the B.Sc. degree course, either in Fuel and Metallurgy, or in Gas Engineering. Before commencing the degree course,

however, students must pass the Matriculation examination, conducted by the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds and Sheffield.

During the first year of the degree course the student will attend classes in Mathematics, Physics, Chemistry, and Applied Mechanics, the first three being the subjects for the Intermediate examination, which is taken at the end of the first year. After passing this examination, the student will, during his second year, continue the study of Physics and Chemistry, and will also take a course in Engineering and Mechanical Drawing, as well as a special course of lectures in the chemistry of Gases supplemented by work in the Fuel and Metallurgical laboratories. During the third year the student will mainly devote his attention to his special subject (*i.e.*, Fuel and Metallurgy or Gas Engineering), but will also spend 6 hours per week in the Mechanical Drawing office (Engineering Department). The three years course will thus include systematic training in Mathematics, Physics, Chemistry, General Engineering and Mechanical Drawing in addition to the study of the special branch of Applied Science (Fuel and Metallurgy or Gas Engineering). At the end of the course, the student will qualify for the B.Sc. degree by passing the prescribed Final examination in either Fuel and Metallurgy or Gas Engineering, as *principal* subject plus Chemistry and Engineering as *subsidiary* subjects.

I. Ordinary B.Sc. Degree Course in (i) Fuel and Metallurgy and (ii) Gas Engineering

All students will take the same Intermediate course in their first year after matriculation, as follows:—

	Hours per week		
Mathematics, Intermediate	2
Physics, Intermediate	2
Chemistry, Intermediate	3
Engineering—First Year	3
Physical Laboratory	4
Chemical Laboratory	12
Engineering Drawing	4

First Year Time Table

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Eng. Drawing		Chem.	Math.	Phys.	Engrg.
TUE.	Chemical Laboratory			Chemical Laboratory		
WED.	Chemical Lab.		Chem.	—	—	—
THU.	Chemical Laboratory			Physical Laboratory		
FRI.	Physical Lab.		Chem.	Math.	Phys.	Engrg.
SAT.	Eng. Drawing		Engrg.	—	—	—

The courses during the second and third years will be somewhat differentiated, according to the respective needs of metallurgists and gas engineers, as follows:—

Second Year Course

All students must take the following:—

	Hours per week
Chemistry F2	3
Engineering VI	3
Chemistry of Gases...	1
Technology of Fuel, General	1
Physical Laboratory	2
Chemical Laboratory	6
Fuel and Metallurgical Laboratory	6
Engineering Drawing and Laboratory	9

Metallurgical students will also attend in addition to the above:—

	Hours per week.
Metallurgy IX (General and Non-Ferrous)	1 (1st and 2nd terms).
Metallurgy XA (Blast Furnace Practice)...	1 (2nd and 3rd , ,).
Metallurgy XI (Alloys. Introductory)	1 (3rd term).

Second Year Time Table*

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	—	Engrg. VI	Chemical or Fuel Laboratory			
TUES.	Chem. F2	Engineering Lab.	Engineering Laboratory			
WED.	—	Engrg. VI	Metall'gy (Gen.)	Chemical or Fuel Laboratory		
THU.	Chem. F2	Tech. of Fuel (Gen)	Eng. Drawing	Chem. of Gases	Eng. Drawing	
FRI.	—	Engrg. VI	Chemical or Fuel Laboratory			
SAT.	Chem. F2	Physical Lab.	—	—	—	—

* The times for Metallurgy X (Blast Furnace Practice) in the second and third terms and for Metallurgy XI (Alloys) in the third term will be fixed later, and are not included in this Table.

Third Year Course

All students must attend:—

	Hours per week.
Technology of Fuel, Special Lectures	1
Mechanical Drawing ...	6
Fuel and Metallurgical Laboratory ...	22 to 24

Metallurgical students will also attend:—

Metallurgy X (Steel), Lectures (1st and 2nd terms)	1
Metallurgy XI (Alloys) ,, (3rd term)	2

Special Lecture Courses to be taken during the second or third years.

In addition to the above lectures, students must also attend, during either the second or third year, the special lectures given in the department by outside lecturers in the following subjects:—*

METALLURGICAL STUDENTS	GAS ENGINEERING STUDENTS
Bye-Product Coking Processes	Bye-Product Coking Processes
Refractory Materials	Manufacture of Coal Gas
	Distribution and Uses of Coal Gas
	Refractory Materials
	Gas Lighting and Heating

* This list is subject to variation, either by substitution or addition, according to the arrangements for special lecture courses which may be in vogue during any particular session or sessions.

II. Honours B.Sc. Course

Honours in Fuel and Metallurgy or Gas Engineering will be awarded to candidates who, having obtained the Ordinary degree, with either Fuel and Metallurgy or Gas Engineering as a principal subject, and being recommended as suitable to proceed with an Honours course, shall have spent one year in research or advanced study, or in the preparation of a thesis on some industrial process, to the satisfaction of the examiners, attendance at the University during this fourth year not being compulsory.

Diplomas and Degree Courses for Post-Graduate Students

(a) A Diploma in either (i) Gas Engineering or (ii) Fuel and Metallurgy will be awarded to graduates of this or some approved University who, having graduated in Science with Chemistry or Engineering as a principal subject, shall have attended for at least one year an approved selection of lectures (including special lectures) together with not less than 24 hours per week laboratory work, in either (i) Fuel and Metallurgy, or (ii) Gas Engineering from those prescribed for the second and third years of the Ordinary degree course, and have passed an examination thereon. Students taking this special Diploma course must put in a full attendance at the University for at least one year.

(b) The degree of B.Sc. with Honours may, in Gas Engineering or Fuel and Metallurgy, be conferred upon students who, having obtained the diploma under the provisions of the preceding section, shall have spent an additional year in research in the department, to the satisfaction of the examiners.

Two Years Courses for Non-Graduates

These Courses are intended for students who, while not proposing to proceed to a degree, desire to take systematic instruction in either (i) Gas Engineering or (ii) Fuel and Metallurgy.

Students entering for these Courses must produce certificates of having passed either the Matriculation examination, the Oxford or Cambridge Local examination in Mathematics,

London University Matriculation, or other approved examination, or they will be required to pass the special entrance examination prescribed for Mining students (see page 348).

The First Year's Course will be the same for all students and will include Mathematics, Physics, Chemistry, and General Engineering, up to Intermediate standard, with Laboratory work in the three last named subjects. The Time Table will be identical with that prescribed for the first year of the Ordinary degree course.

The Second Year's Course may be differentiated according to individual requirements, and will include Chemistry (Lecture and Laboratory), Fuel and Metallurgy *or* Gas Engineering, with practical work, and in certain cases, Mechanical Drawing. All students must, however, take Chemistry F2 lectures; the lecture courses to be taken in the Fuel and Metallurgical Department (including Gas Engineering) will be decided in each case by the Professor, after consideration of the student's requirements and attainments.

Students who have passed satisfactorily through the Two Years' Course *may* be permitted to enter for the Diploma Examination.

In *special* cases, when a student has served an apprenticeship as a gas engineer and has acquired a knowledge of Mathematics, Physics, and Chemistry substantially equivalent to the standard of the 1st year's Diploma Course, he may be allowed to take a *one* year's course in the subjects comprised in the 2nd year's Diploma Course, but such a one year's course will not entitle the student to enter for the Diploma Examination. Applications for such a course must be made to the head of the department, and each case will be decided on its merits.

SYLLABUS OF LECTURE COURSES

I. The Physical and Chemical Properties of Gases

Professor BONE

Thursdays at 2.0 p.m. throughout the session.

(a) Kinetic theory; fundamental gas laws; Van der Waal's equation; compressibility and liquification of gases;

the critical state; specific heats of gases; diffusion and transpiration; viscosity of gases; modern theories as to the nature and conditions of chemical changes in gaseous systems; factors governing reaction velocity; equilibrium in reversible systems; influence of moisture and surface in gas reactions; surface combustion.

(b) The mechanism of combustion, &c.: slow combustion; ignition points of gaseous mixtures; flames and explosions; the explosion wave; rates of explosion; the combustion of carbon, carbon monoxide, and cyanogen; the combustion of hydrogen and of hydrocarbons; the action of steam upon incandescent carbon; the reversible system $\text{CO} + \text{OH}_2 = \text{CO}_2 + \text{H}_2$; the thermal decomposition of hydrocarbons.

II. Technology of Fuel—General Course

Professor BONE and Mr. GRAY

Thursdays at 10.30 a.m. (first and second terms).

This Course is specially intended for Engineering Students and others who wish to acquire a general knowledge of fuel technology; it will also form part of the second year's course for students taking the B.Sc. Degree in either (i.) Gas Engineering or (ii.) Fuel and Metallurgy.

Fuels, their classification and distribution; mechanical theory of heat; heat transmission; specific and latent heats; variation in specific heats of gases with temperature; heat recuperation; general chemical and thermal aspects of combustion; Fuel Calorimetry; Pyrometry; Radiometry; Analysis of Combustion Products; Heat Balances.

General description of Fuels: Natural Gas; Petrol; Petroleum; Shale Oil; Peat; Coal; British Coal-fields and fuel resources; Analysis and Valuation of Coals for industrial purposes; Distillation and Gasification of Coal; Coalite; Coke; Coal Gas; Producer Gas; Water Gas.

Advantages of Gaseous Fuels: The firing of Boilers and Furnaces; Internal Combustion Engines.

III. Technology of Fuel—Special Course (Carbonisation of Coal. Gaseous Fuels.)

Professor BONE

Tuesdays at 11.30 (First and second terms).

1st Term.

Distillation and Carbonisation of Coal. Influence of Temperature upon character and yields of various products. General review of principles underlying carbonisation processes and of operations involved in the manufacture of coalite, coal-gas, and "by-product" coke. Coal Tar.

2nd Term.

Principles underlying the gasification of coal and coke ; action of air and of steam upon incandescent carbon at different temperatures.

The blast furnace as a gas producer. Cleaning and utilisation of blast furnace gas for power purposes. Gas Producer design and practise. Selection of fuels. Qualities of gas required for furnace work and for power purposes. Typical gas producers, including Suction Producers. The cooling and washing of gas for power purposes. Ammonia Recovery Systems. Efficiencies of gas producers.

The manufacture and uses of "blue" water-gas.

The following four Courses (IV. to VII. inclusive) will be given by specially appointed outside lecturers

IV. The Manufacture of Coal Gas

Dr. HAROLD G. COLMAN

A special Course of 20 Lectures (Wednesdays at 6 p.m. and Thursdays at 9 a.m.) during the *second* term (January to March), to be delivered in *alternate* sessions, namely 1911-12, 1913-14, etc.

V. The Distribution and Uses of Coal Gas

A special Course of 20 Lectures (Wednesdays at 6 p.m. and Thursdays at 9 a.m.) during the *second* term (January to March), to be delivered in *alternate* sessions, namely 1912-13, 1914-15, etc., by specially appointed lecturers.

Detailed Arrangements for 1911-12 will be announced during November.

VI. By-Product Coking Processes

Mr. ERNEST BURY, M.Sc.

A special Course of 8 Lectures on Saturdays, at 3 p.m. during the *second* term in *alternate* sessions, namely 1912-13, 1914-15, etc.

VII. Refractory Materials

Mr. C. D. McCOURT.

A special course of 8 Lectures on Saturdays, at 3 p.m. during the *second* term in *alternate* sessions, namely 1911-12, 1913-14.

VIII. Gas Lighting and Heating*

Professor BONE

Tuesdays at 11.30 during the third term.

The nature and structure of coal-gas and hydrocarbon flames; theories of luminosity; the bunsen burner; construction of "atmospheric" burners for various purposes; the incandescent mantle; acetylene as an illuminant; outlines of photometry and spectrometry.

IX. Metallurgy—General and Non-Ferrous

Mr. GRAY.

Wednesdays at 11-30 a.m., during first and second terms.

The course is intended both as a general introduction to the study of metallurgy and to cover the principal processes for the extraction of non-ferrous metals.

Metallic ores, their classification and valuation; refractory materials used in furnace construction; general furnace design; fuels and fluxes; typical metallurgical products, including slags.

Outline of typical metallurgical operations selected from the following:—Roasting of ores; blast furnace smelting for lead and copper mattes; reverberatory smelting for copper and lead.

* The title and scope of this course is subject to variation, according to departmental requirements.

Bessemerising of copper mattes; desilverisation of lead including cupellation processes; Mond process for nickel extraction; the electric furnace; electrolytic refining of copper; zinc and tin smelting, &c.

X. Metallurgy—Iron and Steel

Professor BONE

A. Blast Furnace Smelting of Iron Ores

Fifteen Lectures.—One hour per week during the 2nd and 3rd terms.

This course must be taken by all Fuel and Metallurgical Students during their second year.

Character and distribution of the principal ores of iron; the economic condition of the iron and steel industries; factors governing costs of production; preparation of ores for the blast furnace; blast furnace construction and practice; chemistry of the process; heat balance of the furnace; utilisation of blast furnace gases and slag; properties and uses of cast iron.

B. The Manufacture of Steel.

Twenty Lectures.—One hour per week during the 1st and 2nd terms.

This course will usually be taken by Fuel and Metallurgical students during their third year.

The course will include, principally, the refining and puddling of cast iron and the manufacture of steel by the Bessemer and open hearth processes; the rolling and forging of steel will also be dealt with incidentally, and some reference will be made to cementation and crucible steel processes.

XI. Metallurgy. Alloys

There will be special lectures and classes during the *third term* in each session, upon the constitution, heat treatment and microstructure of industrial alloys, as follows:—

- A. *Introductory* (6 lectures). Thursdays at 10.30 a.m.
Mr. GRAY. Intended for engineering and metallurgical

students, and dealing in an elementary way with the nature and methods of investigation of common industrial alloys.

B. Advanced. Professor BONE and Mr. GRAY. This will take the form of special lectures, demonstrations, &c., in which the constitution, microstructure and heat treatment of industrial alloys will be explained. Students will be expected to supplement the class instruction by a considerable amount of private study and laboratory practice.

Fuel and Metallurgical Colloquium

There will be a weekly colloquium held in the department on Tuesday afternoons at 4 p.m. (or at such other hour as may be arranged) for the discussion of questions relating to the chemistry of gases, fuel technology, and metallurgical practice and theory. All third year students and members of the research staff will be required to attend and take part in the proceedings.

Fuel and Metallurgical Laboratory

The Laboratories will be open during the session from 9.30 a.m. to 1 p.m. and from 2 to 5 p.m. except on Saturday afternoons.

The research students of the department will also have the use of a machine for producing liquid air, erected in the Chemical Department of the University.

A fully equipped workshop, with a mechanic in charge, is provided. The laboratory equipment will provide for instruction and research in the following subjects :

- (a) Gas analysis, photometry and spectrometry, gas calorimetry, gaseous combustion and explosions, the chemistry of gas production, testing of gas coals, and experiments with gases under high pressures including the compression and liquefaction of gases.
- (b) The analysis and testing of coals.
- (c) The analysis of ores, slags, mattes, alloys, and other metallurgical products.

- (d) Microstructure, heat treatment and mechanical testing of steels and other industrial alloys, including the rolling and annealing of the same.
- (e) Pyrometry.

Special courses for outside students in any of the above subjects can be provided by arrangement with the Professor, and every facility will be afforded to properly qualified persons who may wish to undertake research work in connection with industrial processes.

Students will also be encouraged to make themselves acquainted with the researches which are being carried out in the department, the results of which will, at convenient intervals, be explained.

Each student will be furnished with a separate working table, water and gas, and will be required to provide himself with a regulation set of apparatus, and also, if required, a few of the more costly tests, and any expensive materials which he may need for research purposes. Apparatus of a special or expensive character may be obtained on loan, subject to such conditions as may be prescribed by the Professor.

Students will be charged a fee of £1 per session for the hire of microscopes and special apparatus, and will in addition, be held liable for any damage arising from careless or unauthorised use of the same.

TEXTILE INDUSTRIES

Endowed by the Clothworkers' Company of the
City of London

Professor BEAUMONT

Mr. HOLLIS	Mr. YEWDALE	Mr. LAW
Mr. HOLLOWAY	Miss BENTON	Mr. WILKINSON
	Mr. FARLEY	

The Department comprises the following branches :

- (a) Woollen Yarn Manufacture.
- (b) Worsted Yarn Manufacture.
- (c) Designing, Weaving, and Textile Manufacturing.
- (d) Finishing of Textile Fabrics.

Each branch possesses a complete plant of machinery designed and constructed for the demonstration of the technicalities of the various processes.

All the experiments made on the scouring, blending, carding, combing, spinning, weaving, dyeing, and finishing machines are primarily conducted for showing the nature and results of certain methods of work. The student records the experiments made during the session, and receives actual specimens of materials, yarns, and fabrics.

The scheme of teaching, as it relates to mechanical operations, is devised to give as varied an experience in spinning and textile manufacturing as possible, and also to supplement practically, in an efficient way, the lecture courses of study.

The Spinning Buildings are equipped with machinery for treating fine, medium, and coarse wools from the raw or greasy state to the spun yarn, whether on the worsted or woollen system, and for the construction of single, folded and fancy twist threads.

In the Weaving Sheds there are 116 looms, including the principal types of power looms, with the necessary accessories, such as winding, warping and beaming (hand and power), card stamping and lacing machines, healding, pegging, and other frames. This extensive series of looms affords unique facilities for experiments in the design, structure, weaving, and colouring of all classes of fabrics.

The Finishing Shed contains machinery for scouring, milling (by stocks, machine, and combined milling machine and stocks), crabbing and boiling, raising, cutting (on three builds of machines), and pressing (electric system).

In the Textile Museum there is a valuable collection of woven and other specimens, which students have the privilege of examining during the session.

The testing and examination of fibres, materials in the several stages of manufacture, yarns and fabrics, are so important in teaching and actual manufacturing that a conditioning laboratory has been equipped with apparatus for this purpose.

Courses of Study

The following are the principal courses of study :

Textile Designing and Cloth Finishing

Woollen and Worsted Yarn Manufacture

Textile Manufacture, including Woollen and Worsted Yarn Manufacture, Textile Designing and Weaving and Cloth Finishing.

Lecture Courses and Experimental Work

I. Woollen Yarn Manufacture

FIRST YEAR : A course of twenty lectures on Wednesdays from 11.30 a.m. to 12.30 p.m., during the first and second terms.

SUBJECTS.—*Materials*: Varieties of animal, vegetable, waste and re-manufactured fibres manipulated and spun on the woollen system; their character, uses, and relative values.

Processes: Opening, sorting, dusting, steeping, scouring, drying, carbonizing and burring wool; sorting, seaming, carbonizing, blending and pulling rags; garnetting hard waste, mixing, blending and oiling.

Machinery: Details of machines for dusting, steeping, scouring, drying, carbonizing and burring wool, dusting, carbonizing and pulling rags; garnetting hard waste; teasing, blending and oiling.

Calculations relating to cost of materials, blending, speed, and output of machines.

SECOND YEAR : A course of about twenty lectures on Tuesdays, from 4 to 5 p.m., during the first and second terms.

SUBJECTS.—*Processes*: Scribbling, carding, condensing and spinning.

Machinery: Details of automatic and intermediate feeders, scribblers, carding engines, condensers, self-actor mules and spinning frames. Recent modifications and alterations, and a comparison of the different types of machines.

Details of card clothing and the requirements and variations to suit different classes of material. Details of manipulation, factors governing the clothing, grinding, and setting of the parts in carding machines. The draft, twist, and shape of bobbins or cops in spinning, and the speed and production of the different machines.

Calculations of weight and value of spun materials, and the speed and output of the machines.

II. Worsted Yarn Manufacture

FIRST YEAR : A course of twenty lectures, on Fridays, from 4 to 5 p.m., during the first and second terms.

SUBJECTS.—Characteristic features of a typical worsted thread, variations due to the use of materials different or mixed in quality and length, features due to special methods of treatment in manufacture.

Processes : Preparing long and medium staple wools for combing (gilling), preparing medium and short staple wools for combing (carding), backwashing, combing, and finishing.

Machinery : Details of preparing gill boxes ; sets of preparing gill boxes ; carding engines ; backwashing machines ; combs built on the Noble, Lister, and Holden principles ; methods of setting, adapting and manipulating the machines.

Calculations for speed, drafts and output.

Students taking this course are required to attend the first year course of lectures on Woollen Yarn Manufacture, in which raw materials and the operations up to drying are considered.

SECOND YEAR : A course of twenty lectures on Thursdays, from 4 to 5 p.m., during the first and second terms.

SUBJECTS.—*Materials :* Tops from different fibres ; features controlling their quality and value, testing, costing, &c.

Processes : Re-combing, mixing, drawing, (open, cone, French) ; spinning (cap, ring, flyer, mule) ; doubling, twisting, and yarn finishing.

Machinery: Details of the separate machines, and also sets of machinery for drawing on the open, cone and French principles; of spinning frames on the mule, flyer, ring and cap systems; of the various types of doubling and twisting frames, and yarn finishing machinery; of the methods of setting, adapting, and manipulating the machines.

Calculations for speeds, drafts and output.

Testing and comparing the material at different stages in the manufacture and also the finished yarn.

III. Experimental Work

Woollen Section.—Experiments in scouring, mixing, carding, spinning and twisting.

Worsted.—Experiments in carding, gilling, combing, drawing, spinning, and doubling.

The building, setting, construction, and manipulation of the different machines.

Senior students will also have practical demonstrations on the output and adaptability of the machines for the production of different kinds of yarn, and will be instructed in the use of apparatus for conditioning and testing materials and yarns.

IV. Designing and Weaving

FIRST YEAR: Lectures, pattern analysis, designing and calculations on Tuesdays and Thursdays, from 9.30 to 11.30 a.m. throughout the session. The first year lectures on Textile Colouring should be taken concurrently with this course.

Designs and Fabrics.—Structure of woven fabrics; sources of woven effects; elementary weaves; principles of textile designing; sateens and their uses; drafting compound designs; methods of setting cloths; stripe, check, and diagonal patterns; imitation compound cloths, warp, and weft types; various styles of rib and backed textures.

Hand Looms.—Construction and motions of the loom; treadle loom; method of mounting; arrangement of cording or tie-up plans; history, construction and uses of the witch or dobbie machine: double and single action dobbies.

Power Looms.—Shedding, picking, shuttling, and other motions ; construction of the tappet loom ; its advantages and disadvantages : relative merits of slow and quick running looms.

Yarns.—The structure, utility, and application of woollen, worsted, and fancy yarns ; methods of testing for elasticity, twine and quality ; effect of variation and direction of twine in the yarn on twilled and other weaves.

Calculations.—On costing of yarns and fabrics, the speed of power looms, &c.

Pattern Dissection.—The analysis of all kinds of single and backed fabrics.

Text Books.

BEAUMONT'S Worsted and Woollen Cloth Manufacture.

BEAUMONT'S Colour in Woven Design.

BEAUMONT'S Finishing of Woven Fabrics.

BRADBURY'S Textile Calculations.

FOX'S Mechanism of Weaving.

SECOND YEAR : Lectures, designing, pattern analysis, and calculations on Mondays, from 9.30 to 11.30 a.m., and Fridays, from 10.30 a.m. to 12.30 p.m., throughout the session. The second year lectures on Textile Colouring, and the lectures on Cloth Finishing, should be taken concurrently with this course.

Designs and Fabrics.—Structure, application, and principles of woven design in relation to all builds of compound fabrics ; special points in the designing and manufacturing of backed and double-make trouserings, coatings, suitings, mantles, dress fabrics ; designing of vestings ; principles of figured designing for rug, vesting, dress, and mantle textures.

Power Looms. Hutchinson and Hollingworth's, Hatterley's, Hodgson's, Hall's, Livesey's, Platt's, and other important builds of power looms ; analysis of the motions of these looms ; mechanism for shedding, picking, shuttle-boxes, let-off of the warp ; take-up of the cloth ; stop motions, &c. ; types of looms adapted for weaving fancy woollens, worsteds, flannels, dress stuffs, suitings.

Jacquard or Harness Loom.—Single and double-action machines, also single and double cylinder machines ; open

shed jacquards ; methods of mounting or tying-up the harness ; card stamping and lacing machines.

Calculations.—Calculations on the setting and costing of cloths ; cost of folded yarns ; output of weaving machinery ; speeds of looms.

Pattern Analysis.—Dissection of backed, double and compound fabrics.

THIRD YEAR : The class meets on Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays, from 9.30 a.m. to 12.30 p.m. and from 2 to 5 p.m., throughout the session.

It is intended for students who desire to study any particular branch of textile manufacture, such as trouserings, coatings, dress goods, mantle cloths, &c.

Each member of the class has the privilege of making experiments in the Weaving Sheds, under the direction of the Professor. He is provided with materials and other requisites for experimental work.

V. Experimental Weaving

FIRST YEAR : The Experimental Weaving forming part of this course of study in Designing and Weaving, relates to Pattern composition, by arranging coloured yarns in simple and complex weaves in single and compound cloths, in the following classes of fabrics :—Trouserings, suitings, fine coatings, mantle cloths, dress goods, &c.

A loom is allotted to each student, on which he works out experiments in single and backed fabrics.

As far as possible, attention is given in the loom work to the special branches of weaving in which the student is chiefly interested. The ranges of patterns woven are periodically booked by the students when they receive, for each specimen, plan of weave, patterns of warp and weft, set, counts of yarns, picks per inch, and all other particulars in relation to the production of the cloth.

SECOND YEAR : The following are some of the types of fabrics in which experiments are made during the session :—Fancy woollen and worsted coatings, trouserings, and suitings ; union fabrics for coatings, suitings, and mantlings ; dress goods, shirtings, figured vestings, figured dress stuffs,

figured mantles in various materials ; velvets, plain and figured ; plushes and imitation sealskins ; lenos, figured gauzes ; shawls, rugs, &c.

Sample patterns of the various styles woven by the class during the session with all the necessary particulars of manufacture are given to the students according to the time they devote to Practical Weaving.

THIRD YEAR : New types of harness looms have been recently provided for the Original Pattern Work of third year students, but in addition, facilities for the production of styles, and the working out of experiments of an investigatory character, on various builds of power looms are given. The work is not confined to Pattern Origination, but also relates to experiments of a research nature in Cloth Manufacturing and Finishing.

VI. Textile Colouring

FIRST YEAR : A course of twenty lectures accompanied by experiments, on the principles of Textile Colouring, will be given to first year Textile Students during the first and second terms, on Tuesdays and Thursdays, from 11.30 a.m. to 12.30 p.m.

SUBJECTS.—Theories of Colouring ; Qualities of Colours ; Function of Colours in Woven Design ; Harmony and Contrast ; Various Styles of Patterns produced by colours, such as Mixtures, Stripes, Checks, &c.

SECOND YEAR : A course of twenty lectures on Specific Styles of Woven Colourings will be given to second year Textile Students during the first and second terms, on Mondays, from 11.30 a.m. to 12.30 p.m.

SUBJECTS.—Colour in relation to Combination and Drafted Designs ; Backed and Double-make cloths ; Rib patterns ; Spotted effects ; Figured patterns coloured in the warp, in the weft, and in both warp and weft.

VII. Finishing of Woven Fabrics

A course of twenty lectures on the Styles of Finish, Construction of Finishing Machinery and Processes of Finishing, will be given on Friday mornings, from 9.30 to 10.30 a.m.

The Finishing Room of the department is equipped with modern machinery for dressing or finishing such fabrics as are produced on the University looms, whether woollen, worsted, silk, cotton, or union goods. It is open for work on Tuesdays and Thursdays, from 2 to 4 p.m.

This course, which is intended for students attending the Second and Third Year Classes only, includes practical instruction in the following processes: Scouring, tentering, milling, washing off, raising—both on the gig or the Moser machine, and by hand—cutting or cropping, pressing and steaming.

VIII. Art Applied to Textile Design

MR. FARLEY

The courses of study relate to the analysis, composition and colour qualities of decorative design applicable to the various styles of woven fabrics; and comprise first, second, and third year classes in both lectures and practice.

Textile students for the Diploma in Designing and Weaving and also students in the Designing of carpets, tapestries, mantle cloths and other figured fabrics are required to take the courses in Applied Art.

First Year Course

Lectures on Wednesdays, from 10.30 to 11.30 a.m.

Practical Work in the Art Studio on Wednesdays, from 9.30 to 10.30 a.m., 11.30 a.m. to 12.30 p.m., and from 2 to 4 p.m. or 3 to 5 p.m.

Text Book for First and Second Year Courses

Ornamental Design for Woven Fabrics, by C. Stephenson and F. Suddards (Methuen & Co., 7s. 6d.).

Second Year Course

Lectures on Thursdays, from 11.30 a.m. to 12.30 p.m.

Practical work in the Art Studio on Thursdays, from 9.30 to 11.30 a.m., and from 2 to 4 p.m.

Third Year Course

Wednesdays or Thursdays, from 9.30 a.m. to 12.30 p.m., and from 2 to 4 p.m.

Arrangements may be made by which students who wish to devote themselves more closely to the artistic side of Textile Design may attend the Art Department for two or more days per week.

Diplomas in Textile Industries**Three Schemes of Study**

Time Tables are appended of the following combined schemes of study :—

- (A) Textile Designing and Cloth Finishing
- (B) Woollen and Worsted Yarn Manufacture
- (C) Cloth Manufacture.

Diplomas are awarded in the above courses, when the following subjects are also taken :—

- (A) Engineering, French or German, Applied Art, and Mechanical Drawing.
- (B) Engineering, French or German, and Mechanical Drawing.
- (C) Engineering, French or German, and Mechanical Drawing.

A descriptive essay relative to the technical work of the candidates will be set as part of the Diploma examination and will be examined by the Examiners in English in co-operation with the Examiners in the technical department concerned. Foreign students may be excused from presenting themselves for this essay on producing evidence of having received a satisfactory general education. All other students will be required to satisfy the Examiners in this essay. For other conditions see page 280.

N.B.—For Diploma Course in Textile Chemistry, see page 386.

Course of Study—Diploma A

First Year Time Table

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Engrg. Lect.	Mech. Draw.	Mech. Draw.	German	Mech. Draw.	Mech. Draw.
TUE.	Tex. Lect.	Tex. Lect.	*Tex. Col. Lect.	Experimental Weaving		
WED.	Engrg. Lect.	Applied Art	*Woollen Spinning Lect.	Applied Art	Applied Art	Applied Art
THU.	Designing or Pattern Analysis		*Colour Practice	Experimental Weaving		
FRI.	Engrg. Lect.	Experimental Weaving		German	Experimental Weaving	*Worsted Spinning Lect.

*First and Second Terms only.

Course of Study—Diploma A

Second Year Time Table

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Tex. Lect.	Tex. Lect.	*Col. Lect.	Power & Loom	Harness Practice	French or German
TUE.	Designing & Loom Practice			Cloth Finishing		*Wool Spinning Lect.
WED.	Experimental Weaving			Experimental Weaving		French
THU.	Applied Art			Applied Art		*Worsted Spinning Lect.
FRI.	*Cloth Finishing Lect.	Pattern or Designing	Analysis	Power & Loom	Harness Practice	French or German

*First and Second Terms only.

THIRD YEAR: Specialized and original studies in Designing, Weaving, and Cloth Finishing, supplemented by Lectures on Textile Inventions, Industrial Developments, Output of Machinery, Textile Economics, &c.

Course of Study—Diploma B**First Year Time Table**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Engrg. Lect.	Mech. Draw.	Mech. Draw.	German	Mech. Draw.	Mech. Draw.
TUE.	Tex. Lect.	Tex. Lect.	*Tex. Col. Lect.	Experimental Weaving		
WED.	Engrg. Lect.	Woollen Spinning	Woollen Spinning Lect.	Woollen Spinning		
THU.	Designing or Pattern Analysis		*Colour Practice	Experimental Weaving		
FRI.	Engrg. Lect.	Worsted	Spinning	German	Worsted Spinning	*Worsted Spinning Lect.

*First and Second Terms only.

Course of Study—Diploma B**Second Year Time Table**

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.		Worsted Spinning		Power Loom Practice		French or German
TUE.		Woollen Spinning		Woollen Spinning		*Woollen Spinning Lect. French
WED.		Woollen Spinning		Woollen Spinning		
THU.		Worsted Spinning		Worsted Spinning		*Worsted Spinning Lect. French or German
FRI.		Worsted Spinning		Worsted Spinning		

*First and Second Terms only.

THIRD YEAR : Specialized and original studies in Spinning, supplemented by occasional Lectures on Inventions, Industrial Developments, Output of Machinery, &c.

Course of Study—Diploma C

First Year Time Table

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Engrg. Lect.	Mech. Draw.	Mech. Draw.	German	Mech. Draw.	Mech. Draw.
TUE.	Tex. Lect.	Tex. Lect.	*Tex. Col. Lect.	Experimental Weaving		
WED.	Engrg. Lect.	Woollen Spinning	Woollen Spinning Lect.	Woollen Spinning		
THU.	Designing or Pattern Analysis		*Colour Practice	Experimental Weaving		
FRI.	Engrg. Lect.	Worsted Spinning		German	Worsted Spinning	*Worsted Spinning Lect.

*First and Second Terms only.

Course of Study—Diploma C

Second Year Time Table

	9.30 to 10.30	10.30 to 11.30	11.30 to 12.30	2 to 3.	3 to 4.	4 to 5.
MON.	Tex. Lect.	Tex. Lect.	*Tex. Col. Lect.	Power & Loom	Harness Practice	French or German
TUE.	Woollen Spinning			Cloth Finishing		*Woollen Spinning Lect. French
WED.	Experimental			Weaving		
THU.	Worsted Spinning			Worsted	Spinning	*Worsted Spinning Lect. French or German
FRI.	Cloth Finishing Lect.	Designing or Pattern Analysis		Power & Loom	Harness Practice	

*First and Second Terms only.

THIRD YEAR : Specialized and original studies in Spinning, Designing, and Weaving, and Cloth Finishing, supplemented by occasional Lectures on Inventions, Industrial Developments, Textile Economics, &c.

TINCTORIAL CHEMISTRY AND DYEING

Professor GREEN

Mr. PERKIN

Mr. FRANK

Mr. WOODHEAD

The instruction given in the various courses is arranged to meet the requirements both of students intending to become practical dyers or masters of dyeworks, and of those wishing to acquire a more thorough acquaintance with the chemistry of the colouring matters and their manufacture, with the object of becoming dyers' chemists, chemists in colour works, travelling chemists for dye manufacturers, calico-printers' chemists, experts in analysis of dyewares, &c. For the latter class, *i.e.*, colour chemists, an intimate acquaintance with the structural organic chemistry of the artificial dyestuffs is essential, and a very thorough knowledge of pure chemistry is required before specialising in this direction. For the first class, *i.e.*, dyers, such an advanced knowledge, though useful, is not essential, and in any case cannot be acquired in a three years' course. It is, however, equally necessary for the dyer that he should acquire at the outset a sound fundamental knowledge of the chemical and physical sciences underlying the art with which he is ultimately to deal, whilst the study of the colouring matters may be confined to a general acquaintance with their chemical relationships and a knowledge of their properties and dyeing behaviour.

To meet the requirements of these two classes of students, two courses have been arranged, a *three years' course* for practical dyers and a *four years' course* for colour chemists.

The *three years' course* qualifies for the diploma in dyeing of the University. The first year will be spent by the student in the Chemical department, and he will during the same year attend lectures on Physics and German. The second year will be divided between pure chemistry, elementary engineering and practical work in dyeing; whilst the last year will be devoted entirely to dyeing, technical analysis of dyewares, study of the chemical properties of dyestuffs, examination of textile fibres, and calico printing.

In the *four years' course* more time will be devoted to organic chemistry and to the chemistry of the colouring

matters, their examination and analysis. In the fourth year some research work on colouring matters or dyeing processes may also be undertaken. Attendance on this course by students who have previously passed the Matriculation examination qualifies for the Honours or Ordinary degree of B.Sc.

A third course has been arranged for those who wish to specialise as textile chemists or to acquire a special knowledge of chemistry as applied to the textile arts in conjunction with a technical knowledge of the various branches of textile manufacture.

Students holding a degree of any University (English or foreign) or otherwise bringing forward satisfactory evidence of a sufficient previous training in pure chemistry and general science will be admitted at once to the lectures or laboratory work in the department.

Students of the Textile Department who wish to combine with their textile work a short course in dyeing will not be required to study pure chemistry.

The lectures on the chemistry of the artificial and natural colouring-matters will be open to senior students in the department of pure chemistry without joining the regular four years' course.

Attention is also drawn to the provisions of the Ordinances of the University by which periods of study and examinations passed at other Universities may be accepted by the Senate as exempting undergraduates from a certain amount of attendance and from certain examinations in this University.

Graduates or persons who have passed the Final examinations for degrees of other approved Universities may, under certain conditions, enter the University and after not less than two years of attendance on advanced study or research, become candidates for the degree of M.Sc. without taking the B.Sc. degree.

SYLLABUS OF COURSES

I. Three Years' Course qualifying for a Diploma in Dyeing

This course is recommended to students who wish to obtain a good scientific and practical education in the art of Dyeing.

In awarding the Diploma the senate will take into account the results obtained in all the term examinations throughout the entire course in addition to any final examination which may be imposed. Students not reaching a satisfactory standard in all the subjects taken will be disqualified. For other conditions see page 280.

Students already holding a University degree or otherwise bringing forward satisfactory evidence of previous scientific training, may upon application, be admitted to the Diploma upon a shortened period of study.

First Year

	<i>Per week.</i>
Lectures on Chemistry (General Course) ...	4 hrs.
Chemical Laboratory	22 „
Lectures on Physics (Intermediate Course) ...	3 „
German (optional) ... ..	...

The work in the Chemical laboratory will consist of inorganic preparations and qualitative analysis.

Second Year

	<i>Per week.</i>
Lectures on Inorganic Chemistry (F ₁) ...	3 hrs.
Lectures on Organic Chemistry (F ₃) ...	3 „
Chemical Laboratory	14 „
Experimental Dyehouse	15 „
German (optional) ... ..	...

The work in the chemical laboratory will consist of quantitative analysis and simple organic preparations. In the experimental dyehouse the work will comprise the study of the dyeing properties of the various classes of colouring matters in relation to different fibres, methods of application, colour-matching and mixing, tests for fastness, comparison of dyes for strength, &c.

Third Year

	<i>Per week.</i>
Experimental Dyehouse }	30 hrs.
Practical Dyehouse }	
Calico Printing }	
Lectures on Chemical Technology of Textile }	2 „
Fibres (1st Term)	
Lectures on Dyeing (2nd Term)	3 „
Lectures on General Engineering (II A.) ...	

The work in the experimental dyehouse will include examination of the chemical properties of dye-stuffs, the detection of various colours on the fibre, preparation of mordants, examination of textile fibres, and the technical analysis of dyewares. The work in the practical dyehouse will consist in dyeing wool and cotton on a larger scale in model machines, thus giving a general knowledge of dyeing machinery and of the practical conditions of dyehouse work. In calico printing a practical study will be made of the principles of the more important styles.

II. Four Years' Course for Colour-Chemists qualifying for B.Sc. Degree

Suitable for those desiring to become chemists in colour works, dyers' chemists, print works chemists, travelling chemists for dye manufacturers, experts in analysis of dyewares, &c.

If taken after Matriculation this course qualifies for an Ordinary or Honours B.Sc. degree. Unmatriculated students are eligible for the Diploma under the conditions mentioned above.

First Year (Intermediate Course)

	<i>Per week.</i>
Lectures on Chemistry (General Course)	4 hrs.
Chemical Laboratory	18 „
Lectures on Physics (Intermediate Course)	6 „
Mathematics (Intermediate Course)	2 „
German (optional) ... ..	...

The work in the chemical laboratory will consist of inorganic preparations and qualitative analysis.

Second Year

	<i>Per week.</i>
Lectures on Inorganic and Organic Chemistry (F1 and F3)	6 hrs.
Chemical Laboratory	26 „
Experimental Dyehouse	3 „
German (optional) ... ..	...

The work in the chemical laboratory will consist of quantitative analysis, organic analysis, and organic preparations.

Third Year

	<i>Per week.</i>
Experimental Dyehouse)	
Clothworkers' Laboratory)	27 hrs.
Lectures on Organic Chemistry (H1)	3 "
Lectures on Chemical Technology of Textile Fibres (1st Term)	2 "
Lectures on Dyeing (2nd Term)	
Lectures on General Engineering (II A)	3 "
German (optional)	

The work in the experimental dyehouse will include dyeing trials with various classes of colouring matters, methods of application upon different fibres, testing colours for fastness, comparison of dyes for strength and shade, identification of dyestuffs on the fibre and in bulk, examination of textile fibres, and technical analysis of dyewares.

Fourth Year

	<i>Per week.</i>
Clothworkers' Laboratory	
Calico Printing and Practical Dyehouse	30 hrs.
Lectures on Artificial Colouring Matters (1st and 2nd Terms)	2 "
Lectures on Natural Colouring Matters (3rd Term))	

The work in the clothworkers' laboratory will comprise further preparations of coal-tar products and colouring matters, identification of colouring matters and mixtures, determination of the constitution of colouring matters, and valuation of intermediate coal-tar products such as benzene, aniline, toluidine, naphthol, &c. Research work may also be undertaken by the more advanced students.

III. Diploma Course for Textile Chemists**(Four Years)**

This course is intended to supply a thorough scientific training in the chemistry and art of dyeing and finishing in conjunction with a sound technical knowledge of the principles and practice of the various branches of textile manufacture. It should, therefore, fulfil the requirements of those who will, eventually, become head chemists, or

managers, in such manufacturing concerns in which are undertaken all the processes, mechanical and chemical, involved in the production of textile materials from the raw fibre to the finished fabric.

First Year		Per week.
Lectures on Chemistry (General Course)	4	hrs.
Lectures on Physics (Intermediate Course)	3	"
Chemical Laboratory	24	"
German (optional) ... ..	...	...

Second Year		
Lectures on Inorganic and Organic Chemistry (F1 and F3)... ..	6	hrs.
Chemical Laboratory	25	"
Experimental Dyehouse	3	"
German (optional) ... ..	...	...

Third Year		
Experimental Dyehouse and Technical Analysis	15	hrs.
Designing and Weaving Lectures	4	"
Woollen and Worsted Yarn Manufacture Lectures	2	"
Textile Colouring Lectures... ..	2	"
Experimental Spinning and Weaving	9	"
Lectures on General Engineering (IIa)	3	"

Fourth Year		
Chemical Technology of Textile Fibres, 1st term }	2	hrs.
Dyeing Lectures 2nd term }		
Experimental Dyehouse and Technical Analysis	15	"
Designing and Weaving Lectures	4	"
Woollen and Worsted Yarn Manufacture Lectures	2	"
Textile Colouring Lecture	1	"
Finishing Lecture	1	"
Experimental Spinning and Weaving	6	"
Practical Finishing	2	"
Lectures on Chemistry of Textile Manufacture and Materials (V)	2	"

In awarding the Diploma, the Senate will take into account the results obtained in all the term examinations throughout the entire course in addition to any final

examination which may be imposed. Students not reaching a satisfactory standard in all the subjects forming the course will be disqualified. Candidates holding a University degree in science or otherwise bringing forward satisfactory evidence of previous scientific training may, upon application, be admitted to the Diploma upon a shortened period of study. For other conditions see page 280.

LECTURES

I. The Chemical Technology of Textile Fibres

Tuesdays and Thursdays at 9.30 a.m. during the first term.

The lectures will deal with the chemical and physical properties of the various animal and vegetable fibres, viz., cotton, flax, hemp, ramie, jute, wool, hair, silk, and artificial silk; and with the processes and machinery employed in the isolation, purification, bleaching, and finishing of the different fibres and of the textile materials prepared from them.

II. The Chemistry and Technology of Dyeing

Tuesdays and Thursdays, at 9.30 a.m. during the second term.

The following are among the subjects to be treated in the lectures: Mordants; classification of colouring matters; methods of application in dyeing and printing of the various classes of colouring matters; theory of dyeing; testing of colours for fastness; machinery for dyeing; printing of cotton, wool and silk.

Books recommended for Courses I and II.

Knecht, Rawson, & Loewenthal, *Manual of Dyeing*. (2nd ed.)
Georgievics, *Chemical Technology of Textile Fibres*.

III. Chemistry of the Artificial Colouring Matters

Tuesdays and Thursdays at 4 p.m., during the first and second terms.

The lectures will comprise the following subjects:

Distillation of coal-tar and separation of benzene, toluene, naphthalene, anthracene, phenol, cresol, &c. Preparation of intermediate products of colour manufacture. Manufacture, properties, and constitution of the most important colouring matters belonging to the following groups:

Triphenylmethane, pyrone, azine, oxyazine, thiazine, acridine, quinoline, thiazol, nitro, azo, stilbene, anthracene, sulphide colours and indigo. General methods and plant employed in the preparation of colouring matters and their raw materials. Relation between constitution and colour.

Books recommended.

Georgievics, *Chemistry of Dye-stuffs*, translated by Salter (10/6).
Survey of the Organic Colouring Matters, by A. G. Green (21/-).
Thorpe & Cain, *The Synthetic Dyestuffs* (16/-).
Nietzki, *Organische Farbstoffe*.

IV. Chemistry of Natural Colouring Matters

Tuesdays and Thursdays at 4 p.m., during the third term.

The lectures will deal with the origin, chemistry and technology of the principal natural dyestuffs: Madder, logwood, brazilwood, cochineal, barwood, safflower, cudbear, orchil, weld, turmeric, quercitron bark, Persian berries, fustic, catechu, indigo.

Book recommended :

Chemie der Naturlichen Farbstoffe, by H. Rupe.

V. Chemistry of Textile Manufacture and Materials

Twice weekly during the second term (time to be arranged to suit the class).

This course forms a continuation of Lecture Course I. (Chemical Technology of Textile Fibres) which should therefore be taken first. It is specially intended for textile students and others who desire to acquire a fuller knowledge of the chemical and physical principles underlying many processes of textile manufacture, and of the methods of analysis of the various materials employed.

The chemical composition and manufacture of soaps. Various methods of saponification. Free fatty acids. Sulphated oils. Theory of the detergent action of soaps. Choice of soaps for wool scouring. The oils and fats employed in spinning and weaving. Their properties, composition, suitability for particular uses, and analysis. Recovered grease. The chemistry of the carbonising process. Materials employed in sizing and finishing and their analysis. Softening, filling, weighting and antiseptic agents. Water-proofing and fire-resisting materials. Methods of increasing

or diminishing the affinity of fibres for dyestuffs. Mercerisation of cotton. Chlorination of wool. Investigation of faults in textile fabrics.

LABORATORY WORK

A. Experimental Dyehouse

Open for work every weekday during the session from 9 a.m. to 5 p.m., Saturdays 9 a.m. to 1 p.m. The dyehouse is fitted up with modern dyebaths suitable for comparative dyeing trials, drying stoves, and other appliances.

The work in the experimental dyehouse will include the following subjects:—Systematic dyeing trials with the different groups of dyestuffs upon cotton, wool, and silk. Application of various mordants and assistants. Methods of dyeing union materials. Principles of colour mixing and matching. Scouring and bleaching of cotton and wool. Quantitative dyeing of colouring matters for strength and shade. Detection of colouring matters on the fibre. Testing colouring matters for fastness. Preparation of mordants. Analysis of water and removal of impurities. Technical analysis and valuation of dyewares, soap, oils, etc. Detection of different fibres and estimation in mixtures. Examination of newly introduced colouring matters, and determination of their value as dyestuffs. Investigations upon dyeing processes. The use of the colorimeter, tintometer, and spectroscope.

A special exposure chamber has been erected in a convenient position for the purpose of making tests of the fastness of colours to light.

B. Practical Dyehouses

The Practical dyehouses are equipped with the most modern machinery for carrying out experiments on a practical scale. The equipment includes many model machines, all of which are driven by electric motors.

In these dyehouses advanced students of dyeing receive training in the treatment of all classes of textile materials.

The experiments are not merely confined to the actual dyeing processes, but include bleaching, scouring, stoving, singeing, crabbing, finishing, &c.

C. Printing Room

The Printing laboratory is equipped with a model printing machine, steaming chamber, colour pans, &c.

A practical course in calico printing is held during the third term, the work comprising experiments in the different styles, discharges, resists, printing with diazo compounds, aniline black, indigo, &c.

D. Clothworkers' Chemical Laboratory

The Clothworkers' laboratory is a spacious building provided with every facility for the conduct of chemical work upon colouring matters. The work carried out comprises the following subjects:

(a) Analysis of colouring matters and their intermediate products; (b) preparation of coal tar derivatives and colouring matters; (c) researches upon artificial and natural colouring matters, directed to the determination of their constitution, discovery of new groups, the solution of technical problems, &c.

To cover cost of materials and loan of special or large apparatus a charge of £3 per session will be made to all research workers or students working full time in this laboratory, and of £2 per session to part-time students. All ordinary apparatus, however, must be provided by the student.

RESEARCH WORK

Special facilities are provided in the Clothworkers' research laboratory for the conduct of original research in the chemistry of colouring-matters, and upon dyeing processes. The laboratory is a spacious one and well equipped for carrying out scientific and technical investigations in these subjects. Post graduate and other advanced students are admitted to research work under the direction of the Professor, and will find an extra year thus spent greatly to their future advantage. Graduates of other Universities (British or foreign), and other qualified chemists, may also obtain admission as research workers for any period desired.

For conditions of admission to research work at special fee, see page 131.

A research scholarship of the value of £60, tenable in this laboratory, is awarded annually upon the results of the Final examination for the B.Sc. degree, preference being given to candidates who graduate with honours in colour chemistry and dyeing. The scholar will be required to devote his whole time to carrying out some special branch of research in colour chemistry.

Special Courses of Study

Experimental classes will also be held in the following specialised subjects if a sufficient number of students present themselves :

1. Paper staining.
2. Straw dyeing.
3. Lake and pigment manufacture.
4. Oils, fats and waxes.

Museum

The museum of natural and artificial dyestuffs and textile fibres is open to students daily.

Work during Vacation

The laboratories of the department will be open to qualified students for research and private study during a part of the long vacation, but students are strongly recommended to employ the time in gaining practical experience in works wherever such a course is possible. The Professor will be glad to give advice before the end of the term as to suitable courses of vacation study, and to consider applications from students desiring the use of the laboratory.

Positions on Leaving

Students who have taken the full courses as recommended above, and have done satisfactory work during the period may rely upon receiving all possible assistance in obtaining suitable positions when their term of study is completed. The Professor takes a personal interest in placing students, and keeps a record of firms having vacancies.

Examinations of the City and Guilds of London Technical Institute

The above courses prepare for the technological examinations of the City and Guilds of London Institute in Dyeing and also in Coal Tar Products. Students of the Department are recommended to present themselves for these examinations in the last year of their University course.

In connection with these examinations certificates, money prizes, and silver and bronze medals are awarded to the successful candidates. The examinations are held annually at the University in April. Entries for the next examination will be received by the Local Secretary, Mr. G. R. Brench, The University, Leeds, not later than Friday, March 1st, 1912.

TIME TABLES

These time tables are subject to variations according to the attainments of the student when he enters the University, and to his subsequent progress.

Diploma in Dyeing

FIRST YEAR TIME TABLE

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Chemical Lab.		Chem. Int.		Phys. Int.	
TUE. ..	Chemical Laboratory			Chemical Laboratory		
WED. ..	Chemical Lab.		Chem. Int.			
THU. ..	Chemical Laboratory			Chemical Laboratory		
FRI. ..	Chemical Lab.		Chem. Int.		Phys. Int.	
SAT. ..	Chemical Laboratory					

Diploma in Dyeing

SECOND YEAR TIME TABLE

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	12 to 1.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Chem. F1	Experimental Dyehouse (10.30-1)			Chemical Laboratory		
TUE. ..		Experimental Dyehouse (9.30-12)		Chem. F3	Experimental	Dyeh'se	
Wed. ..	Chem. F1	Experimental Dyehouse (10.30-1)			Chemical Laboratory		
THU. ..	Experimental Dyehouse (9.30-12)			Chem. F3	Experimental	Dyeh'se	
FRI. ..	Chem. F1	Chemical Lab.			Chemical Laboratory		
SAT. ..	Chemical Laboratory			Chem. F3			

Diploma in Dyeing
THIRD YEAR TIME TABLE

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Eng. IIA	Experimental and Practical etc.	Dyehouses (10.30-1)	Experimental and Dyehouses,	Practical etc.	
TUE. ..	Dyeing I and II	Experimental Dyehouse (10.30-1)		Experimental and Dyehouses,	Practical etc.	
WED. ..	Eng. IIA	Experimental and Practical etc.	Dyehouses (10.30-1)	Experimental and Dyehouses,	Practical etc.	
THU. ..	Dyeing I and II	Experimental Dyehouse (10.30-1)		Experimental and Dyehouses,	Practical etc.	
FRI. ..	Eng. IIA	Experimental and Practical etc.	Dyehouses (10.30-1)	Experimental and Dyehouses,	Practical etc.	
SAT. ..	Experi. and Prac. Dyehouses, etc.					

Ordinary and Honours Degree
FIRST YEAR TIME TABLE

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Chemical Lab.	Chem. Int.	Math. Int.	Phys. Int.		
TUE. ..	Chemical Laboratory		Chemical Laboratory			
WED. ..	Chemical Lab.	Chem. Int.	Chemical Laboratory			
THU. ..	Chemical Laboratory		Physical Laboratory			
FRI. ..	Chemical Lab.	Chem. Int.	Math. Int.	Phys. Int.		
SAT. ..	Chemical Laboratory					

Ordinary and Honours Degree
SECOND YEAR TIME TABLE

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	12 to 1.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Chem. F1	Chemical (10.30-1)	Lab.		Chemical Laboratory		
TUE. ..		Chemical (9.30-12)	Lab.	Chem. F3	Chemical Laboratory		
WED. ..	Chem. F1	Chemical (10.30-1)	Lab.				
THU. ..		Chemical (9.30-12)	Lab.	Chem. F3	Chemical Laboratory		
FRI. ..	Chem. F1	Chemical (10.30-1)	Lab.		Chemical Laboratory		
SAT. ..	Experimental	Dye house		Chem. F3			

Ordinary and Honours Degree
THIRD YEAR TIME TABLE

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Eng. IIA	Exper. Dyehouse. (10.30-12)	Org. Chem. H1	Experimental Dyehouse, etc.		
TUE. ..	Dyeing I and II	Experimental Dyehouse, etc. (10.30-1)		Experimental Dyehouse etc.		
WED. ..	Eng. IIA	Exper. Dyehouse. (10.30-12)	Org. Chem. H1	Experimental Dyehouse, etc.		
THU. ..	Dyeing I and II.	Experimental Dyehouse, etc. (10.30-1)		Experimental Dyehouse, etc.		
FRI. ..	Eng. IIA	Exper. Dyehouse. (10.30-12)	Org. Chem. H1	Experimental Dyehouse, etc.		
SAT. ..	Experimental	Dye house, etc.				

Ordinary and Honours Degree
FOURTH YEAR TIME TABLE

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Clothworkers' Chemical Lab. Practical Dyehouse, Calico Printing, etc. (9.30-1)			Clothworkers' Chemical Lab. Practical Dyehouse, Calico Printing, etc.		
TUE. ..		ditto.		ditto.		Tinct. Chem. III and IV
WED. ..		ditto.			ditto.	
THU. ..		ditto.		ditto.		Tinct. Chem. III and IV
FRI. ..		ditto.		ditto.		
SAT. ..		ditto.				

Diploma for Textile Chemists
FIRST YEAR TIME TABLE

	9.30 to 10.30	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. .	Chemical	Lab.	Chem. Int.	Chem. Lab.	Phys. Int.	Chem. Lab.
TUE. ..	Chemical Laboratory			Chemical Laboratory		
WED. ..	Chemical	Lab.	Chem. Int.	Chem. Lab.		
THU. ..	Chemical Laboratory			Chemical Laboratory		
FRI. ..	Chemical	Lab.	Chem. Int.		Phys. Int.	
SAT. .	Chemical Laboratory					

Diploma for Textile Chemists
SECOND YEAR TIME TABLE

	9.30 to 10.30	10.30 to 11.30.	11.30 to 12.30	12 to 1.	2 to 3.	3 to 4.	3 to 4.
MON. ..	Chem. F1	Chem. Lab.			Chemical Laboratory		
TUE. ..		Chemical Laboratory		Chem. F3	Chemical Laboratory		
WED. ..	Chem. F1	Chem. Lab.			Chemical Laboratory		
THU. ..		Chemical Laboratory		Chem. F3	Chemical Laboratory		
FRI. ..	Chem. F1	Chem. Lab.			Chemical Laboratory		
SAT. ..	Experimental Dyehouse			Chem. F3			

Diploma for Textile Chemists
THIRD YEAR TIME TABLE

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Eng. IIA	Experm. Dyehouse and Technical Analysis.		Experimental Dyehouse and Technical Analysis		
TUE. ..	Text. Lects.		Text. Col. Lect.	Experimental Weaving		
WED. ..	Eng. IIA	Experm. Dyehouse and Technical Analysis. (10.30-1)		Weaving Lects.	Woollen Spinning	
THU. ..	Text Lects.		Text. Col. Lect.	Experimental Weaving		
FRI. ..	Eng. IIA	Experm. Dyehouse and Technical Analysis. (10.30-1)		Weaving Lects.	Woollen Spinning	
SAT. ..	Experimental Dyehouse and Technical Analysis					

Diploma for Textile Chemists
FOURTH YEAR TIME TABLE

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Text. Design	Lect.	Text. Col. Lect.	Weaving Lectures		
TUE. ..	Dyeing I and II	Dyehouse Technical (10.30-1)	and Analysis	Practical Cloth Finishing	Woollen Spinning Lecture	
WED. ..	Text. Chem. V	Experimental	Dyehouse and	Technical	Analysis	
THU. ..	Dyeing I and II	Dyehouse Technical (10.30-1)	and Analysis	Dyehouse Technical	and Analysis	Worsted Spinning Lectures
FRI. ..	Cloth Finishing	Textile	Designing	Weaving Lectures		
SAT. ..	Text. Chem. V	Dyehouse Technical	and Analysis			

LEATHER INDUSTRIES

Assisted by the Skinners' Company of the City of London and
 by Members of the Leather Trades

Professor PROCTER

Dr. STIASNY

Mr. BRUMWELL Mr. SEYMOUR-JONES

The object of the course of study in this department is to familiarise students, both by information in lectures and by practical handling of the materials, with the details of the tanning process and the reasons why particular modes of treatment produce particular effects. This knowledge once gained, the student is in a position to judge of the causes of defects, and the changes which it is necessary to make to prevent or remedy them or to modify the leathers produced in such a way as may meet the requirements of the trade. Methods of chemical and microscopic analysis are also taught and practised for determining the purity and value of the various materials employed, and for checking their use in the different stages of the process. In the latter part of the course, students are encouraged to attempt the practical production of leathers in which they are interested, and to study the

smaller details of the processes. Particular attention is paid to leather dyeing and the manufacture of coloured leathers, and small quantities of almost all kinds of leather are produced of commercially saleable quality.

In addition to actual teaching, the department undertakes a large amount of research work in connection with leather manufacture with regard to the practical production of leather and the scientific principles on which it is based, and the methods of analysis employed in controlling the purity of materials and the conduct of tanning processes. On these points much useful information has been freely given to the trade.

COURSES OF INSTRUCTION.

The laboratories will be open during the session from 9.30 a.m. to 1 p.m. and from 2 to 5 p.m. except on Saturday afternoons. No student will be admitted to work until he has satisfied the Professor by examination or otherwise that he has an adequate knowledge of general chemistry to enable him to profit by special work.

Students work independently, and the course of work is so arranged as at the outset to familiarise them with the various agents employed in the manufacture of leather, and with their action on hide and skin, and on each other. Later on, methods of chemical examination and analysis of the various materials are studied, with their application to the control of manufacturing processes, and to tracing the causes of defects in leather. Instruction is given in the use of the microscope for this purpose, and for the study of the minute structure of the skin and of ferments.

Experiments in actual leather manufacture on a small scale are also carried on by the students, in such a way as to illustrate the subject matter of the lectures, and to show the effect of variations in the processes. This is, when possible, supplemented by visits to works where the manufacture is carried on.

Leather Dyeing, Staining and Finishing is taught by a systematic course of experimental Dyeing in the laboratory and workshops of the Leather Industries Department, beginning with small samples and proceeding to the colouring and finishing of whole skins.

All the more important kinds of leather are made and finished in the experimental tannery and workshops from the raw materials, with the assistance of the students; and opportunities are given to those who are sufficiently advanced to work upon branches of manufacture in which they are specially interested, or to undertake scientific research in connection with the trade.

There is also an Honours and M.Sc. course for graduates and advanced students, consisting principally of research work under the direction of the Professor and his assistants, with a special course of lectures on the Physics and Chemistry of the subject; and advanced students and others are admitted for independent research at reduced fees. See page 131.

All the ordinary chemicals (except silver nitrate and alcohol) and small quantities of skin and leather for experimental purposes will be furnished by the Department, but larger quantities required for special experiment or research may be charged to or provided by students at the discretion of the Professor. A certain amount of apparatus must be purchased by the student, who will also be held accountable for breakage of apparatus belonging to the University.

LECTURE COURSES

I. The General Principles of Leather Manufacture

Lectures on Mondays, Wednesdays, and Fridays at 10.30 a.m. throughout the session, comprising the following subjects:

The skin and its structure. Character and source of hides and of skins employed in tanning. Soaking and washing and the nature of putrefaction and antiseptics. The chemistry of lime and water in relation to tanning. The liming of hides and skins. Other methods of depilation. Unhairing, fleshing and rounding. Removal of lime before tanning. Bating, puering and drenching, and other means of depleting the skin.

The principal vegetable tanning materials. The elementary chemistry of tanning materials. The grinding and leaching of tanning materials and the manufacture of extracts. The uses of spent tans. The tanning effect of different materials.

The vegetable tanning process and the treatment of hides and skins in the liquors. Principles of rapid tannage. The use of acids and other "assistants" in the tanning process. Quinones and other organic tanning agents.

The tannage of upper leathers as compared to that of sole leather. The chemistry of currying and the oils and fats employed. Japanning.

Oil Tannages.—Chamois. Buff-leather. Formaldehyde tannages. Fat-leathers. Crown and Helvetia leathers.

General principles of mineral tannages. Aluminium leathers. Kid process. Chrome Leathers — Knapp's, Cavallin's, Heinzerling's and other early processes. Modern "one bath" or basic process. "Two bath" or reduction process.

Combination Tannages.—Vegetable in conjunction with aluminium, chrome and oil tanning. Stripping and retannage.

II. Physics and Chemistry of Leather Manufacture

(Honours and M.Sc. course)

Lectures on Tuesdays and Thursdays, at 9.30 a.m. (or at a time to be arranged) throughout the session.

Energy and its transformations. The gas-laws and their practical applications to heating, drying, evaporation and heat-engines. The properties of liquids and their relation to gases. Surface-tension and internal pressure, solution, diffusion and osmotic pressure, electrolytic dissociation, and its relations to electromotive forces, measurement of ionic concentration, chemical and ionic equilibria and the mass-law. The use of salts as regulators. The colloidal state, the Brownian movement, cataphoresis, and colloidal precipitation. Nature of jellies, their swelling and repression. Applications to leather manufacturing processes.

The detailed chemistry of oils and fats employed in Leather Manufacture. The classification and constitution of the more important dye-stuffs. The reactions, constitution and classification of the vegetable tannins, and their relation to colouring matters.

Classification of the proteids; and detailed description of the proteids of the hide, their properties and behaviour with reagents and probable constitution; and the changes involved in the processes of leather manufacture.

The more detailed chemistry of the chrome process, and of other recent tanning methods.

III. Methods of Leather Manufacture

Lectures on Tuesdays and Thursdays at 10.30 a.m. throughout the session.

The manufacture and finishing of sole, belting and dressing leathers. Currying. Manufacture of moroccas and other fancy leathers; staining; dyeing, and finishing. Oil and fat tannages, including so-called "rawhide" leathers. Alum dressing, including glove and calf-kid. Chrome and formaldehyde tannages. Combination tannages.

These lectures will be in connexion with the practical work in tanning, currying and leather dyeing carried on in the Leather Industries laboratories and workshops, and will, as far as possible, furnish the working details necessary to practical manufacture.

IV. Analytical Chemistry of Leather Manufacture

Lectures on Saturdays at 10.30 a.m. throughout the session, including the analytical investigation of the following: waters; liming and deliming materials; lime liquors, tanning materials; extracts; tanyard liquors; gelatine; glue; soaps, oils, fats and waxes; mineral and vegetably tanned leathers; tannery effluents.

These lectures will explain the analytical methods in use in the Leather Industries Laboratories.

V. Technical Microscopy, Bacteriology and Micology

Lectures and practical work on Fridays from 2 to 5 p.m. during the first and second terms.

The use of the microscope in the examination of skin and leather, and in the detection of adulterants, in connexion with work carried on in the laboratories. The bacteriology and mycology of leather manufacture, including some introduction to general technical bacteriology.

Students are encouraged to provide their own microscopes, but will be allowed to use those of the Department at an additional charge of 5s. For bacteriological work a $\frac{1}{12}$ th inch oil immersion objective and substage condenser is required; but for the technical microscopy a simpler microscope will suffice.

VI. Practical Leather Manufacture*(for Elementary Students).*

Demonstrations on Mondays, Wednesdays and Fridays at 9.30 a.m. throughout the session.

Sole leather: The liming and beam house work of hides for sole leather ; mixed tannage with the common materials and extracts, the finishing processes for bends and offal.

Dressing leather: The liming, bating, drenching and other beam house work, and the tanyard work for belting and harness leathers, dressing hides for upper leathers, E.I. kips and calfskins.

Light leathers: The preparation of goatskins for morocco leathers, including liming, puering, drenching, and the tannage with sumach. The fellmongering of sheep skins, including painting, unwooling, liming, de-liming, pickling. The tannage of sheep skins for basils, skivers, &c. The manufacture of sumach calf and tawed leathers.

Chrome and mineral tannage: Tawing and white leathers. Chroming by one-bath and two-bath processes. Retannage with basic liquors. Semi-chrome and other combination tannages.

VII. Practical Leather Manufacture*(for Advanced Students).*

Demonstrations in Workshops, Wednesdays, 2—5 p.m. throughout the session.

Sole leather and dressing leather, including wet-work and tannage, and the methods of tannery control. Finishing of sole leather.

The currying and finishing of dressing leathers. Scouring, hand and machine shaving, splitting, hand and drum stuffing, staining, blacking, waxing, seasoning, glazing, graining, &c. Dressing of strap butts ; harness ; split hides ; waxed kip, calf and splits, satin leathers, lining leathers, memel, levant.

The dressing of moroccos and light leathers from crust skins. Blacking and dyeing ; mordanting. Use of natural and artificial dyestuffs. Dyeing to shade.

Graining, seasoning, glazing and finishing. Dressing of sumach goat, sheep, E.I. tanned sheep and goat, bookbinding calf, basils, skivers, chamois, &c.

Chrome and combination leathers: The manufacture of box and willow calf, including wet work, tanning, dyeing, fatliquoring, staking, glazing and finishing. Skins will be tanned by both one-bath processes (glucose liquor, basic alum liquor, &c.) and two-bath processes (Schultz bath, acid bath, &c.) The retannage in chrome of vegetable tannages, and their finishing for "semi-chrome" box and willow calf. The manufacture of glacé kid, including wetwork, tannage by two-bath process, and the finishing operations. Imitation glacé from sheep skins. Heavy chrome leathers.

Text Books (which must be purchased by the student).

PROCTER'S *Leather Industries Laboratory Book* (E. & F. N. Spon Ltd.)

PROCTER'S *Principles of Leather Manufacture* (E. & F. N. Spon Ltd.)

BENNETT'S *Manufacture of Leather* (A. Constable & Co. Ltd.)

SCHEMES OF STUDY

The following schemes are arranged so as to give students the fullest advantage of the instruction provided by the University, and must generally be adhered to. Time is allowed however, for taking up additional subjects, and special courses may be arranged for students who can satisfy the Vice-Chancellor and the Professor that they already have adequate knowledge of some of the subjects included. Some preliminary acquaintance with actual leather manufacture is very desirable before taking the University courses, and in no case is University training an adequate substitute for practical experience in actual manufacture, though it usefully supplements it, and greatly lessens the time which is necessary to its acquirement.

Students are not admitted to advanced courses unless they have sufficient elementary knowledge to follow them with advantage.

Shorter courses of study may be arranged for students who cannot afford the necessary time for a degree or diploma course. (See Scheme IV and V).

Degrees in Science of which particulars are given below, are conferred in connection with Leather Manufacture.

Before beginning courses for Degrees, the student must have passed the Matriculation examination of the Joint Board of the Northern Universities, or of the University of London. A Diploma in Leather Manufacture, for which matriculation is not required, is also given by the University.

A one-year course for Honours or M.Sc. can be arranged for students who have already graduated.

Scheme I. Three Years' Course for Ordinary B.Sc.

First Year (Intermediate)

Preparation for Intermediate examination in Physics and two of the following: Mathematics, Chemistry, Zoology, Botany.

An additional subject, selected from the list of Intermediate subjects given on page 244, must also be presented at some Intermediate examination during the course.

Students will also be required to write a short descriptive essay relative to their scientific or technical work.

It is also desirable that German and French should be studied, as passages for translation from scientific or technical works will be set in the Final examination, and a sufficient knowledge to read one of these languages is compulsory.

Second and Third Years

Preparation for Final examination in Chemistry, and Chemistry of Leather Manufacture. Approved courses on Physics and Engineering must also be attended.

First Year.	Per week.
General Course of Chemistry (Chem. Int.)	... 3 hrs.
Chemical Laboratory	... 12 "
Physics Intermediate	... 3 "
Physics Laboratory	... 3 "
Mathematics Int.	... 3 "
German or French Intermediate	... 3 "
Leather VI. (Practical Leather Manufacture)	... 3 "

TIME TABLE.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	L. VI		Chem. Int.	Math. Int.	Physics Int.	
TUE. ..	Chemical	Laboratory		Physics Laboratory		
WED. ..	L. VI		Chem. Int.			
THU. ..		Chem. Laboratory		Chemical Laboratory		
FRI. ..	L. VI		Chem. Int.	Math. Int.	Physics Int.	
SAT. ..	Chemical	Laboratory				

Second Year ¹

Per week.

Chemistry F ₂ (Inorganic) ...	...	...	...	3 hrs.
Chemistry F ₃ (Organic) ...	...	...	...	3 "
Chemical Lab. (Inorganic and Organic) ...	...	...	...	12 "
Engineering II.A	...	...	...	3 "
Principles of Leather Manufacture (L. I)	...	...	...	3 "
Analytical Chemistry of Leather Manufacture (L. IV)	...	...	...	1 "
Leather Laboratory	...	...	...	9 "

TIME TABLE.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Eng. IIa	Leather I	Chem. Lab.	Chemical Laboratory		
TUE. ..	Chem. F ₂	Chem. Lab.	Chem. F ₃ (12-1)	Leather Laboratory		
WED. ..	Eng. IIa	Leather I	Chem. Lab.	Chemical Laboratory		
THU. ..	Chem. F ₂	Chem. Lab.	Chem. F ₃ (12-1)	Leather Laboratory		
FRI. ..	Eng. IIa	Leather I		Leather Laboratory		
SAT. ..	Chem. F ₂	Leather IV	Chem. F ₃ (12-1)			

¹ Candidates applying for exemption from the Intermediate course must also apply for the substitution of Leather VI for Eng. IIa in the second year course.

Third Year

Per week.

Chemistry (Inorganic) (F ₁)	...	...	...	3 hrs.
Methods of Leather Manufacture (L. III)	...			2 "
Microscopy and Bacteriology of Leather Manufacture (L. V) (1st and 2nd terms)	...	...		3 "
Practical Leather Manufacture (L. VII)	...			3 "
Leather Laboratory	...	...	...	18 "

TIME TABLE.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Chem. F ₁	Leather L	laboratory	Leather	Laboratory	
TUE. ..	Leather Lab.	Leather III	Leather Lab.	Leather	Laboratory	
WED. ..	Chem. F ₁	Leather L	Laboratory	Leather	VII	
THU. ..	Leather Lab.	Leather III		Leather	Laboratory	
FRI. ..	Chem. F ₁	Leather L	Laboratory	V & Micro.	Laboratory	
SAT. ..	Leather	Laboratory				

Scheme II. Four Years' Course for B.Sc. with Honours

First Year

The intermediate course for the ordinary degree.

Second Year ¹

The second year course for the ordinary degree, except that Chemistry F₁ is taken instead of Engineering IIA.

Third Year

The third year course for the ordinary degree, except that Chemistry H₃ is taken instead of Chemistry F₁.

¹ Candidates applying for exemption for the Intermediate course must also apply for the substitution of Leather VI for Chemistry F₁ in the second year course.

Fourth Year¹

Engineering IIA., Leather II and Research in the Chemistry of Leather Manufacture.

Scheme III. Course for Diploma in Leather Manufacture

This course, extending over three years, is suitable for those who intend to become technical managers in leather works, and is recommended to sons of tanners and others who require a practical knowledge of the science and technology of the industry, but are unable to take a degree course. Though not actually prescribed in the course, the study of a modern language, especially of German, is extremely important, and time is allowed for taking it as an extra subject.

In the Diploma examination there will be included, for translation into English, passages of French and German relating to the principal subject of a candidate's diploma course, and credit will be given for correct rendering of such passages.

A descriptive essay relative to the technical work of the candidates will be set as part of the Diploma examination and will be examined by the Examiners in English in co-operation with the Examiners in the technical department concerned. Foreign students may be excused from presenting themselves on producing evidence of having received a satisfactory general education. All other students will be required to satisfy the Examiners in this essay.

First Year

	Per week.
General Course of Lectures (Chem. Int.)...	3 hrs.
Chemical Laboratory	18 "
Mechanical Drawing	3 "
Leather Industries Workshops (VI) ...	3 "

¹ Candidates may take Chemistry H1 in either the third or fourth years of their course, but this is not compulsory.

TIME TABLE.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ...	Leather VI		Chem. Int.	Chemical Laboratory		
TUE. ...	Chemical Laboratory			Chemical Laboratory		
WED. ...	Leather VI		Chem. Int.	Chemical Laboratory		
THU. ...	Chemical Laboratory			Engineering Drawing		
FRI. ...	Leather VI		Chem. Int.	Chemical Laboratory		
SAT. ...						

Second Year

Per week

Chemistry (Organic) (F3) ...	3 hrs.
Principles of Leather Manufacture (L. I) ...	3 "
Analytical Chemistry of Leather Manufacture (L. IV) ...	1 "
Chemical Laboratory (Organic) ...	6 "
Leather Industries Laboratories and Workshops ...	15 "

TIME TABLE.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	12 to 1.	2 to 3.	3 to 4.	4 to 5.
MON.		Leather I			Leather Laboratory		
TUE. ...	Chemical Laboratory (9-12)			Chem. F3	Leather Laboratory		
WED.		Leather I			Leather Laboratory		
THU. ...	Chemical Laboratory (9-12)			Chem. F3	Leather Laboratory		
FRI. ...		Leather I			Leather Laboratory		
SAT. ...		Leather IV		Chem. F3			

Third Year

Methods of Leather Manufacture (L. III) ...	Per week. 2 hrs.
Technical Microscopy and Bacteriology (L. V) ...	3 „
Engineering (IIA)	3 „
Leather Industries Laboratories and Workshops (including Leather VII)	20 „

TIME TABLE.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	Eng. IIA	Leather	Lab.	Leather	Laboratory	
TUE. ..	Leather Lab.	Leather III		Leather	Laboratory	
WED. ..	Eng. IIA	Leather	Lab.	Leather	VII	
THU. ..	Leather Lab.	Leather III		Leather	Laboratory	
FRI. ..	Eng. IIA	Leather	Lab.	L. V &	Micro. La	boratory
SAT. ..	Leather Laboratory					

NOTE.—These Time Tables are subject to slight variations according to the attainments of the student when he enters the University, and to his subsequent progress.

In awarding this Diploma, in addition to any special examinations which may be imposed, the University will take into account the result of all terminal examinations during the course, and students failing in any of these may be disqualified, or required to repeat that part of the course. Students must obtain a Diploma Record which must be signed by Professors and Lecturers at the end of each session, and on which any exemptions or allowed changes of course must be recorded.

Students who give evidence of adequate previous scientific or practical training, may, upon application, be exempted from a portion of the course, and admitted to the Diploma upon a shortened period of study.

Schemes IV and V are given as illustrations of what may be done by students who can only devote a single

year to the subject, but may be modified to suit individual knowledge and requirements. No diploma or certificate will be given, beyond one of satisfactory attendance.

Scheme IV. An Elementary One-Year Course¹

For Students possessing some knowledge of Chemistry and of practical leather manufacture.

Classes		Per week.
General Course of Chemistry (Chem. Int.)	...	3 hrs.
Principles of Leather Manufacture (L. I.)	...	3 "
Methods of Leather Manufacture (L. III.)	...	2 "
Analytical Chemistry of Leather Manufacture (L. IV.)	... ..	1 "
Practical Leather Manufacture (L. VI. & VII.)	...	6 "
Leather Laboratory	... ..	9 ² "
Chemical Laboratory	... ..	6 "

TIME TABLE.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	L. VI	L. I	Chem. Int.	Chemical Laboratory		
TUE. ..	Lr. Lab.	L. III	Lr. Lab.	Chemical Laboratory		
WED. ..	L. VI	L. I	Chem. Int.	Leather VII		
THU. ..	Lr. Lab.	L. III	Lr. Lab.	Leather Laboratory		
FRI. ..	L. VI	L. I	Chem. Int.	Leather Laboratory		
SAT. ..	Lr. Lab.	L. IV.	Lr. Lab.			

¹ Courses IV and V, involving neither degree nor diploma, may be modified in special cases.

² Including dyeing class, control methods, some microscopy and small experiments in leather manufacture.

Scheme V. An Advanced One-Year Course

For post graduate students or those possessing considerable knowledge of Chemistry.

Classes	Per week.
Principles of Leather Manufacture (L. I.) 1st and 2nd terms	3 hrs.
Chemistry and Physics of Leather Manufacture (L. II.)... ..	2 "
Methods of Leather Manufacture (L.III.) ...	2 "
Analytical Chemistry of Leather Manufacture (L. IV.)	1 "
Technical Microscopy and Bacteriology, 1st and 2nd terms	3 "
Practical Leather Manufacture (L.VII.) ...	3 "
Leather Laboratory	15 "

TIME TABLE.

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON. ..	L. VI	L. I *	Leather Lab.	Leather	Laboratory	
TUE. ..	L. II	L. III	"	Leather	Laboratory	
WED. ..	L. VI	L. I *	"	Leather	VII	
THU. ..	L. II	L. III	"	Leather	Laboratory	
FRI. ..	L. VI	L. I *	"	V. and	Micro. Laboratory	
SAT. ..	Leather Lab.	L. IV	"			

**Degrees of Master of Science (M.Sc.) and
Doctor of Science (D.Sc.)**

These will be awarded to students who have obtained the B.Sc. degree in Leather Manufacture on the conditions stated for Science graduates.

Work During Vacation

The laboratories of the department will be open by arrangement to qualified students for research and private study during a part of the long vacation, but students are strongly recommended to employ the time in gaining practical experience in works wherever such a course is possible. The Professor will be glad to give advice before the end of term as to suitable courses of vacation study, and to consider applications from students desiring the use of the laboratories.

AGRICULTURE

Professor SETON

Mr. HAYDON	Mr. ARCHIBALD	Dr. CROWTHER	
Mr. STEWART	Mr. HECTOR	Mr. POTTS	Mr. PARTON
Mr. RUSTON	Mr. BOWES	Mr. T. REDINGTON	
Mr. GAUT	Mr. GALT	Mr. F. REDINGTON	
Miss MCKERROW	Miss LEADLAY	Mr. ANSTEY	

The Winter Course in the Department of Agriculture will begin on Monday, October 16, 1911, when the Vice-Chancellor will admit students from 9.30 a.m. to 12.30 p.m., and also from 2 to 4 p.m. All students are expected to register their names on this day.

Lectures will begin on Tuesday, October 17.

The Winter Course extends over two terms: the first term begins October 16, and ends December 23, 1911; the second term begins January 8, 1912, and ends March 16, 1912.

The Summer Course extends over the third term, which commences April 17, and ends June 29, 1912. Lectures will begin on April 17 at 9.30 a.m.

Fee for the Winter Course £10, for the Summer Course £5.

The courses of study in Agriculture at the University are:

1. A general course designed without reference to the requirements of any examining body.
2. A course for the National Diploma.
3. A course for the B.Sc. Degree.

I. and II.—General and National Diploma Courses

Winter Course

Students may obtain a full course during winter, and are free to devote the spring and summer months to practical farm work.

The instruction has been arranged to meet the requirements of young men who intend to become farmers, land agents, valuers, or teachers of agricultural science.

The complete course extends over three winters, but students may take a one or two winters' course. The complete course prepares students for the examination for the National Diploma in Agriculture, awarded jointly by the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland. Students are also prepared for the examination of the Surveyors' Institution.

The University of Leeds is among the places of professional education which have been approved by the Surveyors' Institution. The effect of this recognition is that students of the University who have taken the two years' course in Agriculture are admitted to the examinations of the Institution in Sub-Division 1, "chiefly Land Agency," without the usual period of pupilage in a land agent's or surveyor's office. Students preparing for the above examination are advised to attend in their last year the short course of lectures on Agricultural Law which has been specially arranged. The fee for the course is 10s. 6d.

A course of lectures on Agricultural Economics, which all Agricultural Students are recommended to attend in their second or third year, has also been specially arranged. The fee for the course is 10s. 6d.

The Agricultural Chemical Laboratory will be open on special terms to those who wish to devote their whole time to agricultural chemical analysis.

Practical instruction in Agriculture is provided for at the Educational Farm at Garforth. In addition to the lectures at the University, students must attend regular classes at the

Farm, where class-rooms and laboratories have been erected, in which classes will be conducted according as it is found necessary.

All students taking a full course will be required to follow closely the farm work, including field operations, methods of feeding stock, and progress of experiments.

Students will be required to pay their railway fares to and from Garforth. The cost of a contract ticket between Garforth and Leeds during the Winter Course (five months) is £2 11s. 6d., and for students under 18 years of age £1 6s.

A Tutor has been provided to supervise the studies of first year students. Tutorial classes will be formed to suit their requirements.

Summer Course

A special course has been arranged for students who can devote the summer as well as the winter months to study. This will extend from April 17 to June 29, 1912.

The subjects will comprise Agricultural Chemical Analysis, Forestry, Horticulture, Poultry Keeping, Farm Bacteriology, Surveying and Levelling, Mathematics, and Practical Agriculture.

Students reading for the National Diploma are recommended to take the Summer course in their first year.

TIME TABLES

First Year Winter Course

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 5.
MON.	Tutorial.	Natural	History.	Chemical Laboratory.
TUE.	Agri.	Physics & Chemistry.	..	Farm Class at Garforth.
WED.	Agri.	Physics & Chemistry.	Nat. Hist.	Chemical Laboratory
THU.	Agri.	Physics & Chemistry.	Tutorial.	..
FRI.	Natural	History.	Tutorial.	Farm Class at Garforth.

Second Year Winter Course.—A

[FOR STUDENTS READING FOR THE NATIONAL DIPLOMA.]

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Chem.	Surveying.	Geology.	Agri.	Botany.	Surveying
TUE.	Chem.	Chemical	Laboratory.	Geological	Laboratory.	..
WED.	Mens.	Chem.	Geology.	Agri.	Botany	..
THU.	Chem.	..	*Ag. Zool.	Chemical	Laboratory.	..
FRI.	*Ag. Zoology.	..	Geology.	Agri. Bot.	*Ag. Zool.	..
SAT.	Chemical	Laboratory.	..	..	..	..

* First Term only.

Second Year Winter Course.—B

[FOR STUDENTS TAKING THE GENERAL COURSE.]

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Vety. Sc.	Agri.	B'k-keeping	Agri.	Botany.	..
TUE.	Vety. Sc.	Agri.	Math.	Farm	Class at Garforth.	..
WED.	Vety. Sc.	Agri.	Agri. Chem.	Agri.	Botany.	..
THU.	Vety. Sc.	Agri.	Agri. Chem.	Chemical	Laboratory.	..
FRI.	B'k-keeping	Agri.	Agri. Chem.	Farm	Class at Garforth.	..
SAT.	Chemical	Laboratory.	..	..	..	..

Third Year Winter Course

[FOR STUDENTS READING FOR THE NATIONAL DIPLOMA.]

	9.30 to 10.30.	10.30 to 11.30.	11.30. to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Vety. Sc.	Agri.	B'k-keeping	Engineering	..	..
TUE.	Vety. Sc.	Agri.	..	Farm	Class at Garforth.	..
WED.	Vety. Sc.	Agri.	Agri. Chem.	Engineering	..	..
THU.	Vety. Sc.	Agri.	Agri. Chem.	Engineering	Chem. Lab.	..
FRI.	B'k-keeping	Agri.	Agri. Chem.	Farm	Class at Garforth.	..
SAT.	Chemical	Laboratory.	..	..	..	..

Summer Course

	9.30 to 10.30.	10.30 to 11.30.	11.30 to 12.30.	2 to 3.	3 to 4.	4 to 5.
MON.	Poultry.	Forest	Botany.	Chem.	Chemical Laboratory	
TUE.	Dairying.	Horti.	Surveying.	Surveying	field or drawing office	
WED.	Poultry.	Forest	Botany.	"	"	"
THU.	Dairying.	Math.	Surveying.	"	"	"
FRI.	Dairying.	Math.	Surveying.	Chem.	Chemical Laboratory	
SAT.	Farm	or Excursions.		"	"	"

III.—Degree Course

Students who intend to present themselves for the B.Sc. degree, taking Agriculture as one of their subjects for the Final examination, will not enter the Agricultural department until they have passed the Matriculation and Intermediate examinations and begin the work for the Final examination. The subjects of examination and attendance conditions for the Intermediate and Final examinations are the same as for all students of Science. The attendance conditions will be found under the Regulations for the B.Sc. degree.

For the B.Sc. degree, Students must pass three examinations, viz. :—

MATRICULATION,
INTERMEDIATE,
FINAL.

In no case can a degree be obtained except after three years of attendance at the University.

SUBJECTS OF EXAMINATION FOR THE DEGREE

Matriculation Examination

1. English Language and Literature.
2. English History.
3. Mathematics.

4. *Three* of the following, *one* of which must be a language :

- (i) Greek.
- (ii) Latin.
- (iii) French.
- (iv) German.
- (v) Some other Language approved by the Joint Matriculation Board.
- (vi) *Either* Mechanics *or* Physics.
- (vii) Chemistry.
- (viii) Geography (Physical, Political and Commercial)
- (ix) Natural History (Plants and Animals).

Of these, Agricultural Students are recommended to take German or French, Mechanics and Chemistry.

Full particulars of this examination may be obtained from the Secretary, Joint Matriculation Board, 24, Dover Street, Manchester.

Intermediate Examination

Candidates who intend to present themselves for the Intermediate examination must take :

Physics, and two of the following: Chemistry, Zoology, Botany, Geology.

In addition, *one* of the following to be presented at either the Intermediate or Final examination, the standard being that of the Intermediate examination in either case :

- Greek.
- Latin.
- French.
- German.
- English Literature.
- Ancient or Modern History.
- Logic.
- Economics.
- Economic Geography.
- Mathematics.
- Chemistry.
- Zoology.
- Botany.
- Geology.
- Applied Mechanics.
- General Engineering.

Candidates are also required to satisfy the Examiners in a descriptive essay relative to their scientific or technical work.

Final Examination

For the Final examination, the subjects are :

1. Agriculture, including special courses in *two* of the following :

- Agricultural Chemistry.
- Agricultural Botany.
- Agricultural Zoology.
- Agricultural Geology.
- Agricultural Entomology.
- Agricultural Economics.
- Veterinary Science.
- Bacteriology.
- Surveying.

2. *Either* one of the following as a principal subject :

- Mathematics.
- Physics.
- Chemistry.
- Zoology.
- Botany.
- Physiology.
- Geology.

or two subsidiary subjects from the following :

- Mathematics P. (Pure).
- Mathematics PA. (Pure and Applied).
- Physics.
- Chemistry.
- Zoology.
- Botany.
- Physiology.
- Geology.
- Human Anatomy.
- Bacteriology.
- Education (including the teaching of Elementary Science).

Mathematics P. and PA. cannot be taken together as subsidiary subjects.

During the two years' study for the Final examination, students will be required to spend at least six months on the Manor Farm, Garforth, where each student must conduct an experiment on some Agricultural subject and present a report on the same.

SYLLABUSES

First Year

Agriculture (I)

Lectures on Tuesdays, Wednesdays, and Thursdays, at 9.30 a.m., by Professor R. S. Seton.

SUBJECTS.—Agriculture and its relation to the sciences.

Soils.—Their nature, functions, origin and wasting. Texture and general characteristics. Soil temperature. Soil water and its conservation. Relations between the soil and the plant. Chemical composition of soils ; potential and available plant food.

Characteristics, classification and distribution of soils. Chief type of Yorkshire soils.

Tillage operations. Ploughing ; specific results of ploughing ; times and methods of ploughing. Autumn and Spring cultivation. Surface tillage. Preparation of seed-bed for different crops on various classes of soil.

Steam cultivation.

Farm drainage. Irrigation. Sewage farms. Warping, claying, marling, chalking, liming, paring and burning. Clay-burning.

Manures.—Characteristics of the various nitrogenous, phosphatic, and potassic manures in common use. Conditions affecting their successful application. Their specific effects on the various farm crops. Farm-yard manure ; its production, variation, preservation and application. Liquid manure. Composts. Green manuring.

Rotations.—The rotation of crops. Arrangements of cropping according to the system of farming adopted.

Seeds, Grasses, and Pastures.—Common grasses and clovers, their suitability for different soils and local conditions. Laying down land to permanent pasture. Grass

seed mixtures. Treatment of new grass land. Management of old-established grass. Deterioration of grass land ; its causes and remedies. Hay-making. Silage and the system of ensilage.

Chemistry and Physics (2)

Tuesdays, Wednesdays, and Thursdays, at 10.30 a.m., by Mr. A. G. Ruston.

SUBJECTS.—Physics and Chemistry so far as is sufficient to enable students to understand thoroughly the application of these sciences to Agricultural practice.

Natural History

Botany.—During first term only, Mondays, 10.30 a.m. to 12.30 p.m., Wednesdays at 11.30 a.m., and Fridays, 9.30 to 11.30 a.m., by Prof. Priestley and Mr. N. Walker.

SUBJECTS.—Elementary structure of plants ; drawing ; the use of the microscope ; simple experiments on the growth of plants and allied matters ; the elements of Agricultural Botany.

Zoology.—During second term only, Mondays, 10.30 a.m. to 12.30 p.m., Wednesdays at 11.30 a.m., and Fridays, 9.30 to 11.30 a.m., by Prof. Garstang and Mr. T. H. Taylor.

SUBJECTS.—Elementary facts of structure of the higher animals ; the use and mechanism of special organs ; drawing ; the use of the microscope.

Tutorial Classes

Mondays, 9.30 a.m., Thursdays and Fridays, at 11.30 a.m., by Mr. A. G. Ruston.

SUBJECTS.—Correspondence, Calculations, Elementary Mathematics preparatory to Book-keeping, Surveying, and Engineering.

Chemical Laboratory

Mondays and Wednesdays, from 2 to 5 p.m.

Selected experiments arranged to illustrate the Chemical and Physical principles underlying Agricultural operations. These will include the preparation and properties of the

elements of special interest to agriculturalists, and experiments leading up to a correct knowledge of the nature, properties, composition, and use of soils, manures, and feeding stuffs.

Practical Agriculture

Tuesday and Friday afternoons, at Garforth.

SUBJECTS.—Stock. Stock-feeding. Estimation of weights of crops and animals. Pastures and pasture plants. Practical examination of seeds, manures and feeding stuffs.

Seasonable operations will be closely followed ; different systems will, so far as practicable, be illustrated, and the reasons for the variations explained. Students will be required to follow closely stock-feeding and other experiments at Garforth. Occasional demonstrations will be given by specialists in certain departments of Practical Agriculture.

Second and Third Years

Agriculture (3)

Lectures daily, except Saturdays, at 10.30 a.m., by Mr. Haydon or Mr. Archibald.

SUBJECTS.—*Feeding Stuff.*—Animal nutrition. Process of digestion. Functions of the various constituents of food. Suitability, comparative nutritive value, and economical use of the commoner feeding stuffs for the different classes of farm stock. Preparation of food. General requirements of the different animals on the farm. Food rations.

Crops and Cropping.—Characteristics, habits, cultural requirements, and management of the various arable land crops. Variation in yield, composition, and quality according to local conditions and treatment. Factors to be considered in the selection of varieties.

Live Stock.—Origin, history, and description of the different breeds of horses, cattle, sheep, and pigs in the British Isles. Relation between districts and breeds. Comparative powers of adaptation. Essential points in size, conformation, and character. Standards of perfection. Principles involved in improvement and early maturity.

Fixation and preservation of desirable qualities. Advantages and dangers of pedigree breeding. Pure, cross-grade, and high-grade breeding. Laws of animal development.

Accommodation for farm stock.

Horses.—Working horses. Breeding mares. Gestation, foaling, weaning, and rearing. Breaking and preparation for sale.

Cattle.—Management of cows. Calving. Rearing of calves and young cattle. Treatment of fattening cattle.

Sheep.—Special features of sheep farming. Systems of flock management. Permanent and temporary flocks. The year's work on a sheep farm: lambing, weaning, rearing, fattening.

Pigs.—Selection of breeds. Breeding sows. Farrowing, weaning, rearing, fattening.

The buying and selling of stock. Agricultural statistics.

Labour and Implements.—Management of farm labour. Manual labour, horse labour, water, wind and steam power. Agricultural implements and machinery.

Farm buildings and fences.

Agricultural Economics.—Considerations involved in the valuation and taking of farms. Times of entry. Yearly and other tenancies. Leases and agreements. Acts of Parliament affecting landlord and tenant.

The tenant's capital and its distribution. Live and dead stock required. Valuation of tenant-right, and of live and dead stock.

Different systems of farming. Arrangement and cost of labour in connection with stock, cultivation, cropping, harvesting, &c.

Chemistry (4)

Mondays, Tuesdays, and Thursdays, at 9.30 a.m., and Wednesdays at 10.30 a.m., by Dr. Crowther.

SUBJECTS.—Chemical combination. The atomic and molecular theories. Atomic and molecular weights.

Quantitative chemical notation. Valency of the elements. General characteristics of the solid, liquid, and gaseous states of matter. Liquefaction of gases. Solution. Mass action. Transformation of chemical energy into other forms and *vice versâ*. Classification, distribution, and functions in nature and the arts of the chemical elements. The chemistry of the more common elements and of their most important compounds. Chemistry of carbon and of some typical carbon compounds important in Agriculture. Chemistry of Fermentation.

Agricultural Chemistry (5)

Wednesdays, Thursdays, and Fridays at 11.30 a.m., by Dr. Crowther.

The Plant.—Elementary constituents of the food of plants. Forms in which these constituents may be absorbed. The atmosphere and its relations to plant life. Assimilation of the various ingredients of plant food. Production of organic substances by the plant. Transport and storage of prepared material. The chief organic constituents of the plant. Respiration. Germination, growth, and maturation.

The Soil.—Its constituents, their origin and properties. Analysis—mechanical and chemical. Variation in mechanical texture and in chemical composition. The chief chemical processes at work in soils. Bacteria of the soil. Nitrification. Factors that determine the relative fertility or sterility of soils. Chemical and physical effects of the various tillage operations. Relations between soil and sub-soil. The sources of loss and gain to the soil.

Manures.—Their composition and commercial value. The manufacture of superphosphates. Mixing of manures. Fermentation of farmyard manure. Liquid manure. Sewage manures. Changes undergone by manures in the soil. Specific action of manurial and other dressings on the soil.

Crops.—Characteristic composition of the various farm crops. Adaptation of manures to crops. Influence of manures, soil, climate, and season on quality and quantity of crop. Crop residues. Influence of crop and crop residues on soil. Rotation of crops.

Animal Nutrition.—Constituents of the animal body. Nature of animal nutrition. Food constituents and their functions. Digestion and excretion. Functions of the blood. Sources of loss and gain to the blood. Secretion. Respiration. The composition of foods. Their digestibility and comparative nutritive value. Relation of food to animal requirements and to manure.

The Dairy.—The chemical composition and properties of milk and the chief products obtained from it. Conditions influencing the quality and yield of milk. Principles involved in cream-separation and in the making of butter and cheese. The influence of ferments on milk and milk products. The preservation of milk.

Agricultural Botany (Botany S₂)

Mondays and Wednesdays, from 2 to 4 p.m., Fridays at 2 p.m., during the first and second terms, by Mr. J. M. Hector.

SUBJECTS.—Elementary Anatomy and Physiology of flowering plants. The cultivated plants of arable land, and the more important weeds. Methods of recognition of grasses, clovers, and other plants of agricultural importance. Physiology of agricultural plants. Diseases of crops, with remedial measures.

This course will prepare for the examination in Agricultural Botany for the National Diploma in Agriculture.

Agricultural Zoology (Zoology S₂)

Thursdays at 11.30 a.m., and Fridays from 9.30 to 11.30 a.m. and 3 to 4 p.m., during the first term, by Mr. Taylor. (Lectures and laboratory work).

SUBJECTS.—Structure and classification of insects. Life history of certain types.

This course covers the syllabus of the examination in Agricultural Zoology for the National Diploma in Agriculture.

Book-keeping (6)

Mondays at 11.30 a.m., and Fridays at 9.30 a.m., by Mr. A. G. Ruston.

SUBJECTS.—Accounts, Day Book, Cash Book, Ledger, Balance Sheet, Profit and Loss Account, &c.

Mathematics (7)

Tuesdays, at 11.30 a.m., by Mr. A. G. Ruston.

This class will be largely tutorial. The subjects taken will be arranged to suit the requirements of the student. In addition to Mathematics as required for examination the course will include practice in all calculations that an agriculturist would be required to make in the course of a year.

Chemical Laboratory

Tuesdays, 10.30 a.m. to 12.30 p.m.; Thursdays, 2 to 4 p.m.; Saturdays, 9.30 a.m. to 12.30 p.m.

Chemical Analysis, with special reference to Agriculture.

Veterinary Science (8)

Mondays, Tuesdays, Wednesdays, and Thursdays at 9.30 a.m., by Mr. Bowes.

SUBJECTS.—Anatomy and Physiology of farm animals. Recognition of diseases affecting farm animals. Means of preventing disease, including ventilation, drainage, judicious feeding, grooming. Nature of heredity, contagion, infection.

Practical Agriculture

Classes at the Farm on the same lines as for first year students, with the addition of practical demonstrations by Mr. Bowes on conformation, handling, &c., and generally the application of veterinary hygiene to farm animals.

Agricultural Geology (Geology S1)

Lectures on Mondays, Wednesdays, and Fridays, during the first and second terms, at 11.30 a.m., by Professor Kendall. Practical work Tuesdays, from 2 to 4 p.m.

SUBJECTS.—Scope of the science. The composition and physical characters of the common rock-forming minerals. Classification of rocks according to (a) their mode of origin and (b) chemical composition.

Denudation, transport and accumulation. Forms of stratification. The subdivision of stratified rocks. Economic products of the chief formations. The nature and origin of the drift deposits. Their importance in relation to the soils of the North of England. The soils of the Warp lands and the Yorkshire Wolds,

The disintegration of rocks and the formation of soils. Geological maps, their interpretation and use. British rainfall, its measurement and variation. Storage of subterranean waters. Water supply from springs and deep and shallow wells. Application of geological knowledge to the selection of sites for roads, bridges, &c.

Agricultural Engineering

Mondays, Wednesdays, and Thursdays, at 2 p.m., by Professor Goodman and Mr. Duncan.

1. *Mechanics*.—Centre of gravity ; stability of structures. The lever ; toothed wheels ; pulleys and ropes ; wrapping connectors ; winches ; differential pulleys. Laws of motion. Strength of materials, tensile, compressive, torsional, and transverse ; elastic limit ; ultimate strength. Work ; horse-power ; animal and human power. Friction of surfaces and axles ; lubrication.

2. *Air*.—Properties of air ; elasticity ; specific heat. Barometer. Moisture. Movement. Winds. Windmills.

3. *Water*.—Composition. Weight. Height of column to balance atmosphere. Flow of water. Friction of water in pipes and channels. Usual speed of flow. Power derived from falls of water. Water-wheels ; turbines ; water-pressure engines ; pumps. Potable water. Sources of supply. Means of purification. Storage.

4. *Heat*.—Nature of heat ; thermometer ; absolute zero ; specific heat ; latent heat ; the unit of heat. Total heat of water ; as ice, water, and steam. Conduction, convection, and radiation of heat. Mechanical equivalent of heat. Principle of combustion. Quantity of heat generated by combustion. Modes of transforming heat of combustion into power, as in the steam engine, and gas and oil engine.

5. *Steam-engine*.—Construction of an ordinary portable engine boiler, of a Cornish boiler, and its setting. Fittings of a boiler. Construction of the stationary and portable steam-engine. Single cylinder. Double cylinder. Compound. Slide-valve. Expansion valve. Cylinder. Piston-rod. Glands. Connecting-rod. Crank and crank shaft. Fly-wheel. Bearings. Pet cocks. Lubrication. Steam and fuel consumed per horse-power.

6. *Gas and Petroleum Engines*.—Principle of action. Construction of valve gear. Sources of loss. Fuel and water required per horse-power.

7. *Electrical Generators, Motors, and Conductors*.—Principles of action—shunt; losses in electrical machinery. Efficiency. Detection of faults. Regulation of shunt and series motors. Use of fuses and cut-outs. Horse power of motors, and calculation of Watts to be delivered at terminals. Ohm's law. Losses in conductors, and calculation of sizes to convey given currents with definite losses. Insulation of conductors.

Books recommended:

MORLEY and INCHLEY'S "Elementary Applied Mechanics"
(Longmans, 3s.).

BALLS, "National Sources of Power" (Constable, 6s.).

RIPPER'S "Heat Engines" (Longmans, 2s. 6d.).

Surveying (9)

Mondays, at 10.30 a.m. and 4 p.m., by Mr. Archibald.

These lectures are intended for students who have attended the course of Surveying in the summer term, a syllabus of which is given on page 431. A general revision will be made of the work already done, illustrated by further examples of surveying and levelling; together with a more detailed study of the adjustments of the instruments, the ordnance maps and other matters, than is possible during the summer course.

Agricultural Economics

A short course will be given in the Economics and Statistics of Agriculture, chiefly in the United Kingdom. The course will deal with the principles of rent, the forms of land tenure, and the returns of acreage, stock, and output of Great Britain and Ireland.

One hour a week in the second term, at a time to be arranged.

Special fee for the course, 10s. 6d.

Agricultural Law

A course of lectures of one hour a week during one term will be given by Dr. Chapman at times to be arranged, on the Law of Landlord and Tenant.

This course is intended for students in the Agricultural department who propose to present themselves for the examinations of the Surveyors' Institution in Sub-Division I, "chiefly land agency."

Special fee for the course, 10s. 6d.

Summer Course Agriculture

A study of the practical operations and experiments at the Manor Farm, Garforth.

Practical Agricultural Chemistry

Mondays and Fridays at 2 p.m., by Dr. Crowther.
Qualitative and quantitative analysis.

Forest Botany (Botany S₃)

Mondays and Wednesdays, 10.30 to 12.30 a.m., by Mr. J. M. Hector, during the third term (lectures and laboratory work).

SUBJECTS.—(1) Forest Botany: Recognition of the principal British trees. Identification of the more important timbers. The growth of trees and timber. Diseases of trees.

(2) General Forestry: Trees in relation to soil and climate. The growth of trees in the open and in forests. Formation and regeneration of woods and plantations. Pure and mixed woods. General management of trees. Formation and care of nurseries.

Occasional excursions will be made during the term; students to pay their own railway fares or other expenses.

Horticulture (10)

Tuesdays at 10.30 a.m., by Mr. T. Redington.

SUBJECTS:—Preparation of the soil of the garden. The use and application of farm yard manure, artificial manures and lime. Seeds and their treatment. *Garden Crops*.—Their cultivation and management. *Fruit Culture*.—Propagation by seed, cuttings, layering, budding, grafting, &c. ; planting ; root and branch pruning. Produce—gathering, grading, storing, packing, marketing, preserving, bottling, &c. *The Flower Garden*.—Autumn, Spring, and Summer work ; special subjects of the flower garden.

Poultry Keeping (11)

Mondays and Wednesdays at 9.30 a.m., by Mr. Parton.

SUBJECTS.—Origin and antiquity of fowls. Breeds and their characteristics. The anatomy of the fowl. Accommodation and sanitation of the house. Embryology of the chicken. Natural incubation. Rearing chickens. Use of Incubators and of Brooders for artificial rearing. Foods—the principles and methods of feeding. Fattening—the different methods adopted. Breeds of ducks, geese, and turkeys. Marketing poultry produce—preserving eggs. Diseases of poultry. General management.

Dairying (12)

Tuesdays, Thursdays and Fridays at 9.30 a.m., by Mr. Haydon.

SUBJECTS:—Commercial aspects. Conditions which favour foreign importation. The factory system. Relative merits of milk-selling, butter-making and cheese-making under different conditions. Cost of production and realisation. Influence of breed, strain, feeding, and general management on the quantity and quality of milk. Testing quality. Pasteurisation and sterilisation. Separation of cream by gravitation and centrifugal force. Merits of different separators. Ripening and preparation of cream for churning. Butter-making.

Live and dead stock and buildings required on cheese-making farms. General management of the herd. Details of the manufacture of Cheddar, Stilton, Cheshire, and Wensleydale cheese. Utilisation of by-products.

Dairy Bacteriology.¹—Bacteria: Nature and functions. Food. Secretion and excretion. Respiration. Multiplication. Resting and active stages. Motile and non-motile forms. Relation between environment and activity. Bacteria and disease.

Origin, nature, function, and control of bacteria in milk, butter, and cheese. Useful and injurious species. Tainted milk, rancid butter, sour, soapy, and discoloured cheese. Pure cultures for butter and cheese-making—their preparation and use. Diseases spread by milk and its products.

Surveying (13)

Tuesdays and Thursdays at 11.30 a.m. and 2 to 5 p.m.; Wednesdays, 2 to 5 p.m.; Fridays, 11.30 a.m.; by Mr. Archibald.

Chain surveys. Principles involved. Chains. Arrangement of lines and method of proving the work. Sources of error and precautions to be adopted. Chaining past obstacles. The field book. Scales. Plotting the survey. Calculating areas from the field notes; by the computing scale; and by give and take lines. Surveys in which the lines are fixed by angles. Instruments required. The Theodolite. Box Sextant. Prismatic Compass. Graduated Cross Staff. The Vernier, its construction and use. Proving the accuracy of the angles taken.

The maps of the Ordnance Survey, their value to the land agent and farmer.

Levelling. The Level and Staff. Bench marks. Booking the readings and working out the reduced levels. Checking the level book. Proving the field work. Sections, their use for road making and similar purposes. Cross sections. Contours. Curvature and refraction.

During this course a survey, involving the use of all the instruments mentioned above, is made of the Manor Farm buildings, and levels are also taken; the plan and sections are plotted in the drawing office as the work in the field proceeds.

¹ Previous to attendance on this course students are recommended to take the practical Bacteriological Course in the Leather Industries Department. The course consists of instruction in the general methods of Bacteriology and the study of Fermentation. It will embrace the preparation of nutrient media, separation of micro-organisms, and the preparation of pure cultures. Students will be made familiar with the characteristics of typical forms of micro-organisms.

COUNTY LECTURES, DAIRYING INSTRUCTION, &c.

The County Councils of the three Ridings of Yorkshire make annual grants to the University to enable it to carry out a system of instruction on subjects connected with Agriculture, and, in the case of the East and West Ridings, to give practical instruction also in Dairy work at various centres.

The members of the staff engaged in this work are :—
Prof. R. S. Seton, Mr. R. W. Haydon, Mr. C. F. Archibald,
Mr. J. Potts, Mr. F. W. Parton, Mr. T. Redington,
Mr. A. Gaut, Mr. A. S. Galt, Miss A. D. McKerrow, and
Mr. W. Jones Anstey.

County Lectures

Each course consists of five or ten Lectures given in the evenings at intervals of one week. Each Lecture may be followed by a class at which questions may be asked of the Lecturer. Before the University enters into any arrangements with a locality for the delivery of such a course of Lectures, a Local Committee must be appointed with a secretary to correspond with the University. The Local Committee will be required to guarantee a certain average attendance, also the local expenses, consisting of hire of hall, advertising, &c. With these exceptions the Lectures will be given free.

The subjects treated in the several Courses embrace :
Results of Garforth experiments, soils and their properties, manures, farm crops, insect pests and diseases of crops, the management of grass land, live stock and feeding stuffs, dairying and poultry keeping, horticulture and fruit culture, small farming and gardening, management of allotments, the foot of the horse, and the principles of horse shoeing.

Dairying Instruction

The Dairy School at Garforth is open for practical instruction from April to October. Three courses each of six weeks' duration are usually given in Butter and Soft Cheese making.

The Fee for the course is £3. Board and Lodging are provided in the Hostel at Garforth for female students for the period of six weeks for the sum of £5.

Single Demonstrations on Butter-making are given at Centres in the East and West Ridings, during the winter months.

Field Experiments

The University undertakes the laying out and supervision of Field Experiments to illustrate the principles of Agricultural and Horticultural practice.

Reports on these experiments may be had on application to the Professor of Agriculture.

Instruction in Horticulture in Schools in the East and West Ridings

The University supervises the instruction in Horticulture given in Gardens connected with various Evening Schools in the East and West Ridings.

Instruction in Horticulture at Garforth

A course of Horticulture and Experimental Plant Physiology will be conducted on Saturdays at the Manor Farm, Garforth, commencing on September 16, 1911, and concluding about the end of the following May. The class is for qualified teachers intending to teach the subject of Horticulture. The mornings will be given to the discussion of the principal horticultural processes and their actual practice in the garden, and the afternoons to Botany.

Special fee for the course, £1 12s. 6d.

Instruction in Farriery

Instruction in Horse Shoeing has been provided for and takes the form of Practical Demonstrations in the making of shoes and the shoeing of horses in smithies easily accessible to apprentice smiths in different localities. The work is so arranged that the apprentices attend one afternoon or evening in each week during the period the Instructor is in attendance. The Classes are preceded by a public Lecture on the Foot of the Horse and the Principles of Horse Shoeing, and at the conclusion of the Lecture those smiths who intend to join the Practical Class are asked to give in their names.

GENERAL TIME TABLE

	9.30—10.30.	10.30—11.30.	11.30—12.30.
MONDAY.	Greek Int. Greek F1. Latin Int. German F. History F5. Math. I, II & F3. Chemistry { F1. H2 a. H3 b c. Botany F1. 9.30-11.30. Bot. S3 c. Geology S4 b c. Engineering II A. Elec. Engrg. I a. 9.30-11.30. Text IV. (2nd year). Agric. 4, 8, 11.	Greek H. English Int. and F1 French S1. German H. History H6. Final Law I. Physics F1. Zoology Int. 10.30-12.30 Zool. S1 b. 10.30-12.30. Bot. S1 a. Engineering VI. Leather I. Mining. Agric. 3, 9.	Greek S2. Latin F1 and H. French Int. 1. Final Law Mathematics F2. Chemistry Int. 12. Chem. H1 a b. Geology S1 a b. Text. VI (2nd yr.) a b. Agric. 6, 11.
TUESDAY.	Greek Int. Greek F2. French H. History F4. Education F2 A. Chem. F2 and H4. Botany Int. Engineering IV. Mechanics. 9.30-11.30. Text. IV. (1st year). Tinct. Chem. I a and II b. Leather II. Agric. 1, 4, 8, 12.	Greek H. Latin Int. (Comp). French S2 a b. History F1 and F6. Education F3 A. Geology Int. Engrg. VII A. Leather III. Agric. 2, 3, 10.	Latin F1 and F2 (Comp.). History Int., F2 and H1. Mathematics F1. 12. Chemistry F3. Elect. Eng. II & III. Text. VI (1st yr.) a b. Agric. 7, 13.
WEDNESDAY.	Greek F1. Latin Int. German F. History F5. Math. I, II and F3. Chemistry { F1. H2 a. H3 b c. Botany F1. 9.30-11.30. Bot. S3 c. Geology S4 b c. Engineering II A. Elec. Engrg. I a. 9.30-12.30. Textile VIII (3rd year). Agric. 1, 8, 11.	Greek H. English Int. and F1. German H. History H6. Physics F2. Engineering VI. Leather I. Leather V c. Text. VIII (1st year). Mining. Agric. 2, 3, 4.	Greek Int. Greek S2. Latin F1 and F2. French Int. i. Mathematics F2. Chemistry Int. 12. Chem. H1 a b. Zool. S1 b. Botany S1 a. Geology H3. Geology S1 a b. Text. I (1st year) a b. Agric. 5, 11.

a—1st Term. b—2nd Term. c—3rd Term.

DAY LECTURE COURSES

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2-3.	3-4.	4-5.
<p>English H1. French F1. German S1. Inter. Law 1. Math. Int. 2-4. Botany S2 <i>a b</i>. Geology F1. Engrg. II B <i>a b</i>. Elect. Eng. 1.</p>	<p>German Int. Inter. Law 3. Physics Int.</p>	<p>Latin F2. French Int. 2 and H. German S2. Education F1. Inter. Law 2. Engineering 1. Engrg. II <i>c a c</i>. Agric. 9.</p>
<p>English H1. French F1. Final Law 3. 2-5. Agric. 13.</p>	<p>French Int. 3, <i>a b</i>. French F2. German S4. Accountancy.</p>	<p>German S3 <i>a b</i>. Accountancy. Geology S3 <i>b c</i>. Engineering III. Text. I (2nd yr.) <i>a b</i>. Tinct. Chem. III <i>a b</i>. Tinct. Chem. IV <i>c</i>.</p>
<p>2-4. Bot. S2 <i>a b</i>. Engrg. II B <i>a b</i>. 2-4. Text. VIII (3rd year.) Coal Mining. 2-5. Agric. 13.</p>	<p>Law S1.</p>	<p>French Int. 2</p>

Classes not marked meet throughout the Session.

GENERAL TIME TABLE

	9.30—10.30.	10.30—11.30.	11.30—12.30.
THURSDAY.	<p>Greek Int. Greek F2. Latin Int. (Comp.) French H. Hist. F4. Education F2 B. Chemistry F2. Botany Int. Engineering IV. Mechanics. 9.30-11.30. Text. IV. (1st year). 9.30-12.30. Text VIII (3rd year). Tinc. Chem. 1a & II b Leather II. Agric. 1, 4, 8, 12.</p>	<p>Greek H. German Int. History F1 and F6. Education F3 A. Geology Int. Engrg. VII A. Leather III. Agric. 2, 3.</p>	<p>History Int. 1. Mathematics F1. 12. Chemistry F3. Zoology S2 a. Elect. Eng. II & III. Text. VI (1st yr.) a b. Text VIII (2nd year) Agric. 5, 13.</p>
FRIDAY.	<p>Greek F1. Greek F2. Latin Int. French S1. German F. Hist. F3. Math. I, II & F3. Chemistry { F1. H2 a. H3 b c. 9.30-11.30. Zool. S1 b and S2 a Botany F1. 9.30-11.30. Bot. S1 a Geology S4 b c. Engineering II A. Elec. Engrg. I a. Text. VII. Agric. 6, 12.</p>	<p>Latin F1. English Int. and F1. German H. History H5. Final Law I. Physics F1. Zoology Int. Engineering VI. 10.30-12.30. Text. IV (2nd year). Leather I. Mining. Agric. 3.</p>	<p>Greek S2. Latin F1 and H. French Int. 1. Final Law 2. Mathematics F2. Chemistry Int. 12. Chem. H1 a b. Geology H3. Geology S1 a b. Elec. Engrg. IV. Agric. 5, 13.</p>
SATURDAY.	<p>Greek S1. Latin H. Education F2 A. Chemistry F2. 9.30-12. Zool. S3. 9.30-12. Bot. S4. Engineering VIIa. 9.30-12. Mining</p>	<p>Greek H (Comp.). Latin H (Comp.). 10.15-12.15. French S3 and S4. 10.30-12.30. German S6 and S7. Geology Int. Engineering IV. Engineering VIIb. Leather IV.</p>	<p>Greek S2 (Comp.). 12. Chemistry F3. Engineering III.</p>

a—1st Term. b—2nd Term. c—3rd Term.

DAY LECTURE COURSES (*Continued*).

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2-3.	3-4.	4-5.
<p>German Int. Education F₃ B. Engineering IIb <i>a b</i>. 2-4. Text. VIII (3rd year). 2-5 Agric. 13.</p>	<p>German S₄. 3.15-4.45. Education F₁, F₂, F₃. (Criticism).</p>	<p>Inter. Law 2. Engineering III. Elect. Eng. I. Text. II (2nd yr.) <i>a b</i>. Tinct. Chem. III <i>a b</i>. Tinct. Chem. IV <i>c</i>.</p>
<p>English H₁. French F₁. German S₁. Final Law 3. Math. Int. Botany S₂ <i>a b</i>. Geology F₁. Elect. Eng. I. 2-5. Leather V <i>a b</i>.</p>	<p>Greek F₂ (Comp.) German Int. Law S₁. Physics Int. Zoology S₂ <i>a</i>.</p>	<p>Greek F₁. Latin F₂. French Int. 2. German S₂. Education F₁. Engineering I. Text. II (1st year) <i>a b</i>.</p>

Classes not marked meet throughout the Session.

TIME TABLE OF INTERMEDIATE ARTS COURSES

	9.30—10.30.	10.30—11.30.	11.30—12.30.	2—3.	3—4.	4—5.
MONDAY ..	Greek. Latin.	English Literature. Zoology.	French Int. 1. Chemistry.	Mathematics.	German. Physics.	French Int. 2.
TUESDAY ..	Greek. Botany.	Latin Comp. Geology.	Ancient History.	..	French Int. 3.*	..
WEDNESDAY ..	Latin.	English Literature.	Greek. French Int. 1. Chemistry.	..	..	French Int. 2.
THURSDAY ..	Greek. Latin Comp. Botany.	German. Geology.	Ancient History.	German.	..	..
FRIDAY ..	Latin.	English Literature. Zoology.	French Int. 1. Chemistry.	Mathematics.	German. Physics.	French Int. 2.
SATURDAY ..	..	Geology.	..	..	..	..

The times for other Classes to be arranged with Students.

* First and Second Terms.

TIME TABLE OF FINAL ARTS COURSES

MONDAY ..	Greek.* German. English Hist. †	English Literature.	Latin. * English Hist. †	French.	..	Latin. † Education. *
TUESDAY ..	Grk. † Rom. Hist. † Education. †	European Hist.* † Education. †	Latin Comp. * † Const. Hist. *	French.	French Literature (A).	..
WEDNESDAY ..	Greek.* German. English Hist. †	English Literature	Latin. * †	..	..	..
THURSDAY ..	Greek. † Roman History. † Education. †	European Hist.* Education. †	..	Education †	3.15—4.45. Education Criticism Lessons.	..
FRIDAY ..	Greek. * † German. Greek Hist. †	English Literature.	Latin. *	French.	Greek Comp. †	Greek. * Latin. † Education. *
SATURDAY ..	Education. †	..	..	..	..	..

* First Year. † Second Year. ‡ Third Year.
The times for other Classes to be arranged with Students.

Course for the First Examination in Medicine

Time Table

	9.30—10.30.	10.30—11.30.	11.30—12.30.	2—3.	3—4.	4—5.
MON.	Chem. Int. <i>a</i> (<i>ab</i>)	Zool. Int. <i>a</i>	Phys. Int. <i>a</i> (<i>ab</i>)	Chemical Laboratory, (<i>ab</i>)	2—5	
TUE.	Botany Int. <i>a</i>	Practical 10.30—	Botany 12.30	Practical Zoology,	2—5.	
WED.	Chem. Int. <i>a</i> (<i>ab</i>) Prac.Zool.(<i>c</i>)	Practical Zoology.	Phys. Int. <i>a</i> (<i>ab</i>) Zool.Int. <i>a</i> (<i>c</i>)	..	..	..
THU.	Botany Int. <i>a</i>	Practical 10.30—	Botany 12.30	Chemical Laboratory (<i>ab</i>)	2—5.	
FRI.	Chem. Int. <i>a</i> (<i>ab</i>)	Zool. Int. <i>a</i>	Phys. Int. <i>a</i> (<i>ab</i>)	Chemical Laboratory (<i>ab</i>)	2—4.	
SAT.	Physical	Laboratory,	9.30—12.30 (<i>ab</i>)	..	..	..

ab, 1st and 2nd terms.

NOTE.—The courses in Chemistry and Physics will be completed in the first two terms; the course in Biology lasts throughout the session. The times arranged for courses in Chemistry are subject to revision.

This course will meet the requirements of students preparing for the First examination in Medicine (M.B., Ch.B.), or Parts I and II of the First examination in Dental Surgery (B.Ch D.) of the University of Leeds. It includes lectures in Chemistry, Physics, Biology (Zoology and Botany), with the requisite attendance in the Chemical, Physical and Biological laboratories.

Composition fee for the course (including registration and library and Union fees) £27.

Students preparing for the Conjoint Board Examinations (L.R.C.P. and M.R.C.S.) will attend classes in Physics (lectures and laboratory as above), Chemistry (lectures and laboratory as above), and Biology (lectures and laboratory as above during first and second terms only). Composition fee for the course (including registration and library and Union fees), £23.

Students preparing for the Preliminary examination in Science for the Diploma in Dental Surgery, will attend classes in Physics and Chemistry, as above. Fee for six months only (including registration and library and Union fees), £15.

THE SCHOOL OF MEDICINE

Session 1911-1912

UNIVERSITY TERMS

The University session or academic year in the School of Medicine is divided into three terms. The first term begins Monday, October 2, 1911, and ends Wednesday, December 20, 1911; the second term begins Wednesday, January 10, 1912, and ends Wednesday, March 27, 1912; the third term begins Wednesday, April 24, 1912, and ends Saturday, June 29, 1912.

ADMISSION OF STUDENTS

The Academic Sub-Dean will enter students at the School of Medicine for courses of instruction from 12 (noon) to 1 p.m., on October 2 and 3, 1911; and on April 24 and 25, 1912. The Fees due must be paid at the same time to the Registrar, who will be present to receive them. The Composition Fee or the first instalment is payable at the commencement of the third term of the first year at the University.

The Sub-Dean is generally in his office in the School of Medicine from 12 (noon) to 1 p.m. daily, and can be seen at other times by appointment. Enquiries about medical studies should be made to him.

Applications to attend the instruction on Infectious Diseases at the Leeds City Hospitals, and to attend instruction in Vaccination, must be lodged with the Academic Sub-Dean in the first week of each term.

Enquiries relating to hospital attendance should be addressed to the Clinical Sub-Dean, between the hours of 12.30 p.m. and 1.30 p.m.

Every student is required on entering the School to sign the following declaration :

I, the undersigned, being a student in the School of Medicine of the University of Leeds, hereby undertake to comply with all rules and regulations of the University, and to conduct myself on all

occasions in an orderly manner. I fully understand that no allowance whatever will be made, and that I have no claim upon the Council of the University in respect of any fees paid by or due from me, in case such fees are forfeited by any irregularity or misconduct on my part.

Students pursuing the first year's course of study are admitted at College Road according to the arrangements published on page 123.

ENTRANCE EXAMINATIONS

1. For students preparing for the Degrees of M.B. Ch.B. in the University of Leeds.

All students who intend to present themselves as candidates for the degrees of M.B. and Ch.B., in the University of Leeds are required, before entering upon their degree course, to have passed the Matriculation examination (Faculty of Medicine) of the Universities of Manchester, Liverpool, Leeds, and Sheffield, or some examination recognised by the Joint Matriculation Board of those Universities as exempting from the Matriculation examination.

The Matriculation examination (Faculty of Medicine) is held at each University in July and September. Candidates presenting themselves for this examination are required to satisfy the Examiners in :

1. English Language and Literature
2. English History
3. Mathematics
4. Latin
5. *Two* of the following, *one* of which must be a language :
 - i. Greek
 - ii. French
 - iii. German
 - iv. Some other modern language approved by the Board
 - v. *Either* Mechanics *or* Physics
 - vi. Chemistry
 - vii. Geography (Physical, Political, and Commercial)
 - viii. Natural History (Plants and Animals)

Candidates who have passed the Matriculation examination in *six* subjects, but have not included *both* Latin *and* either Greek or a modern language, will be deemed to have passed the Matriculation examination (Faculty of Medicine), provided they satisfy the examiners in the subject omitted.

Candidates for entrance to the Faculty of Medicine who have already obtained the certificate of having satisfied the examiners in English subjects, Mathematics, Latin, and another language, will be deemed to have passed the Matriculation examination (Faculty of Medicine), provided they satisfy the examiners in one other subject in the Matriculation examination.

The conditions of exemption from the Matriculation examination will be found fully set forth in the Matriculation Syllabus which is issued free, and is obtainable from the Secretary, the Joint Matriculation Board, 2, Dover Street, Manchester.

The holder of a certificate who desires exemption must submit the certificate to the Secretary for verification of the subjects.

The fee charged for registering an external Certificate is £1.

The Joint Board will grant exemption from the Matriculation examination to graduates of any University of the United Kingdom, provided Latin has formed part of one of the degree examinations.

Provided that all the subjects required by the General Medical Council have been included, the Board is prepared to accept certificates of having passed the London Matriculation examination.

The Joint Board will exercise its discretionary power of granting exemption to applicants holding certificates of having passed examinations of a standard at least equal to those above mentioned.

2. For other Students

Students who intend to pursue the study of Medicine without becoming candidates for the degrees of M.B. and Ch.B. in the University of Leeds are admitted to the Leeds School of Medicine on presenting certificates of having passed one of the preliminary examinations recognised by the General Medical Council. The Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield issues such a certificate to candidates who have satisfied the examiners at the Matriculation examination (see above) in English subjects, Mathematics, Latin, and another language, although they may not have passed the examination. This certificate does not entitle the candidates to proceed to degrees in any of the Universities.

Candidates for the Medical degrees of the University of London must satisfy the Matriculation requirements of that University before beginning a course of study in the Leeds School of Medicine.

FEES

All fees are payable in advance to the Registrar. Cheques should be made payable to "The University of Leeds," and crossed "Beckett & Co."

1. and 2. Registration and Library, and Union Fees

As in the other Faculties. See pages 128 and 129.

3. Lecture and Laboratory Fees

The general regulations are the same as in the other Faculties (see page 129).

The fees for separate lectures will be found under Courses in Medicine.

The fees payable for laboratory and for practical work are at the uniform rate of £3 per half day of three hours a week each session.

4. Fees for Research Students

Persons desirous of pursuing original Research will be admitted on the conditions specified on page 131.

5. Composition Fees

The following are the composition fees for students preparing for University degrees in Medicine :

(a) For the complete course qualifying for the First examination of the University, or the Preliminary Scientific (M.B.) examination of the University of London, the fee is £27, inclusive of Registration and Library and Union fees.

(b) For students preparing for University degrees, who have already taken the course of instruction for the First examination of the University, or the Preliminary Scientific (M.B.) examination of the University of London, the fee is £115 2s. 6d. if paid in one sum on entrance, or £37 12s. on entrance, £37 12s. in the following April, £22 in the following January, and £22 at the end of a further twelve months. This entitles to attendance upon one course of the subjects in Sections I and II, and the practice of the Infirmary. Students usually begin their work in the School of Medicine in the third term of the first year, viz., in April. The privilege extends over *eight years* only from the date of the first instalment.

(c) For students preparing for University degrees, who have passed the Second examination, the fee is £90 16s. 6d., and entitles to attendance upon one course of the subjects in Section II and the practice of the Infirmary. The privilege extends over *six* years only.

SECTION I.

Descriptive Anatomy, Junior and Senior Sections.

Use of Dissecting Room with tutorial instruction for two sessions.

Physiology, general and advanced courses.
Practical Physiology and Histology.
Materia Medica.
Practical Pharmacy.

SECTION II.

Pharmacology and Therapeutics.
Pathology and Bacteriology.
Practical Pathology.
Medicine.

Do. a second course.

Surgery.
Practical Surgery.
Obstetrics.
Gynaecology.

Intern Maternity.
Forensic Medicine.
Practical Toxicology.
Mental Diseases.
Ophthalmology.
Public Health.
Applied Anatomy.
Infectious Diseases
Vaccination

Additional courses of lectures and practical or tutorial classes which may be rendered necessary by failure to pass any examination, or by the refusal of the Board of the Faculty of Medicine to certify satisfactory attendance on any course, will be charged for as the Board may direct.

6. Examination Fees

No fee will entitle to admittance to more than *one* examination.

For the First examination for the degrees of M.B. and Ch.B., £5; and for each subsequent examination, £2.

For the Second examination for the degrees of M.B. and Ch.B., £5; and for each subsequent examination, £2.

For the Final examination for the degrees of M.B. and Ch.B., £5; and for each subsequent examination, £2.

For the examination for the degree of Ch.M., £5; and for each subsequent examination, £2.

For the examination for the diploma in Public Health, £5 5s. for each part, and for each subsequent examination in the same part, £3 3s.

On application for the degree of M.D., £5.

7. Degree Fees

On conferment of the degree of Ch.M. or M.D., £5.

REGULATIONS FOR STUDENTS

1. All students are required to enrol their names at the Dean's office at the beginning of the first and third terms. Students who from any unavoidable cause are prevented from personally attending at that time must communicate with the Dean by letter.

2. Should a student change his residence during the session, he must inform the Dean of the change of his address without delay.

3. Regular, punctual, and orderly attendance at lectures, demonstrations, and class-examinations is required of every student, in order to obtain certificates of attendance.

In the case of persistent neglect of work, repeated failure at professional examinations, or unreasonable delay in presenting himself for such examinations, a student may be required to withdraw from the University.

4. In case of illness or other unavoidable cause of non-attendance at any lecture, demonstration, or class examination, a written explanation accompanied, when necessary, by a medical certificate, must be sent to the lecturer, with as little delay as possible, otherwise excuses for absence cannot be accepted. Hospital work is not counted as an excuse for non-attendance upon lectures excepting in the case of the week's casualty dressership and for actual attendance upon cases of midwifery, all of which must be duly certified. Consequently students must not take any resident hospital appointments which involve absence from lectures or classes in the School, unless they have previously informed, and obtained the permission of, the Dean.

5. Prizes will be granted only when the work and conduct of the student are satisfactory, and certificates or prizes may be refused on the ground of unsatisfactory conduct.

6. Smoking is allowed only in the Students' Common Room, the Refectory after 1 p.m., and under certain restrictions in the Dissecting Room.

7. Students will be required to make good, to the satisfaction of the Council, any loss, wilful damage or injury they may occasion to the property of the University.

8. Students in the School of Medicine are amenable to the discipline and general regulations of the University as well as to the rules made by the Board of the Faculty of Medicine. Violation of these regulations and rules renders a student liable to immediate dismissal, and to the forfeiture of all fees, certificates, and privileges as a student of the University.

Lockers

Lockers are provided for the safe keeping of coats, books, &c. The rent is 2s. 6d. per annum, commencing at the 1st or 3rd terms, with a deposit of 1s., which will be returned when the key is given up, if the locker is undamaged.

Residence

See particulars of Hall of Residence (page 142), and Registered Lodging and Boarding Houses (page 141).

Refectory

A well-appointed Refectory, which is open daily, excepting Saturdays, has been provided in the School of Medicine. It is under the combined management of the Board of the Faculty of Medicine and of the Students' Representative Council. Luncheon is served from 12 to 2 p.m. Tea, coffee, and light refreshments may be obtained until 5 p.m.

Dinners for each separate term may be compounded for by special arrangement.

LIBRARY

Honorary Librarian : Professor GRUNBAUM

Assistant Librarian : W. MERRIMAN

The Library contains a valuable collection of books, composed of the united libraries of the School of Medicine and of the Leeds and West Riding Medico-Chirurgical Society, and is being continually increased. The Library of the Old Infirmary, rich in medical classics, became the property of the School of Medicine in 1865.

The Library is supplied with most of the modern works of importance, and the chief English and foreign periodicals.

Rules

1. The Library is open to students daily, between the hours of 9 a.m. and 5 p.m., except on Saturdays, when it will be closed at 1 p.m. During these hours, books can be obtained for use in the Library on application to the Assistant Librarian.

2. Students wishing to borrow books for home use are allowed to do so under the following regulations :—

(a) Every student wishing to take books away from the Library shall deposit half-a-guinea as caution money; this sum, or the balance of it remaining, shall be refunded to the depositor on the return of his Library card.

(b) The student will, on payment of the deposit, receive a Library card with his name upon it. This card must always be

presented to the Assistant Librarian or his substitute whenever the student desires to borrow a book. The name of the book and date of issue will be entered upon the card, which will then be placed on the shelf in the place of the book borrowed. The card will be given back to the student when the book is returned.

(c) Books borrowed for home use must be returned to the Library within two weeks from the date of issue. One volume only can be borrowed at a time. A fine of 2d. a day is incurred for every day that it has been detained beyond the time allowed.

(d) No periodical for the current year may be removed from the Library.

(e) In case of loss of or damage to any book, the loss or damage must be made good by the borrower.

(f) Every book must be returned to the Library at the end of the winter and summer sessions respectively.

NOTE.—Practitioners residing in Leeds or its neighbourhood may be admitted to the use of the Library upon certain conditions, and upon the payment of a subscription.

MUSEUMS

The MUSEUM OF PATHOLOGY contains, in addition to preparations illustrating the ordinary pathological processes, many rare specimens, some of historical interest. It draws largely for its supply from the General Infirmary, as well as from other institutions in the City. A collection of microscope sections from specimens in the Museum is available for the use of students on application.

A complete type collection of MATERIA MEDICA specimens is also placed here for the convenience of students.

The ANATOMY MUSEUM AND BONE ROOM adjoins the Dissecting Room, and has been fitted up, under the direction of the Professor of Anatomy, with a valuable collection of specimens specially arranged for study, which are also used in illustration of the lectures on Anatomy. Amongst them are a complete set of bones marked with the muscular attachments, and mounted in revolving cases ; and several series of wax models, illustrating the development of the foetus.

DEGREES IN MEDICINE AND SURGERY

The Degrees in Medicine and Surgery shall be :

Bachelor of Medicine and Bachelor of Surgery Ordinance
(M.B. and Ch.B.)

Doctor of Medicine (M.D.)

Master of Surgery (Ch.M.).

Degrees of Bachelor of Medicine and Bachelor of Surgery

1. Candidates for the degrees of Bachelor of Medicine and of Surgery are required to present certificates showing that they will have attained the age of twenty-one years on the day of graduation, and that they have attended courses of instruction approved by the University extending over not less than five years, two of such years at least having been passed in the University, at least one year being subsequent to the date of passing the First examination.

During the first four years, a year of medical study must Regulations include attendance upon at least *two* of the prescribed courses of lectures or laboratory work, or one such course and hospital practice, in each term, if that year is to count as part of the degree course. In the fifth year clinical work will suffice. The attendance must be given at the University or at a college, medical school, or hospital recognised by the University.

2. Candidates for the degrees of Bachelor of Medicine Ordinance and of Surgery are required to satisfy the Examiners in the several subjects of the following examinations, entitled respectively :

The Matriculation examination,¹ or such other examination as may have been recognised by the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield in its stead; the First examination; the Second examination; the Final examination.

¹ For particulars of the Matriculation examination, see page 441.

Regulations Except as provided below, candidates must present themselves and pass in all the subjects of any part of an examination at the same examination. But candidates who have failed (a) in Chemistry or Physics at the First examination for the degrees of M.B. and Ch.B., or (b) in Anatomy or Physiology at the Second examination for the degrees of M.B. and Ch.B., or (c) in any subject of Part I of the Final examination for the degrees of M.B. and Ch.B., or (d) in any subjects of Part II and III of the Final examination for the degrees of M.B. and Ch.B. may be exempted from re-examination in such part of the examination as the combined Examination Committee may determine. Provided that this exemption shall not be allowed except at the examination next following that at which such candidates have failed when presenting all the subjects.

First Examination

Ordinance 3. The First examination shall consist of two parts :

PART I. Physics
Chemistry.

PART II. Biology.

4. Candidates, before presenting themselves for the First examination, are required to furnish certificates of having attended courses of instruction in accordance with the Regulations of the University, and to have passed the Matriculation examination.

5. Candidates who have passed the Intermediate examination for the degree of Bachelor of Science in Chemistry, Physics, Zoology, and Botany, will, on payment of the required additional fee, be regarded as having passed the First examination for the degrees of Bachelor of Medicine and Bachelor of Surgery.

6. The names of candidates who have satisfied the Examiners in either part of the First examination shall be published in alphabetical order.

Regulations Candidates for the First examination are required to furnish certificates of having attended approved courses of instruction at the University or at an institution recognised for this purpose by the University; or of having

attended, at some other institution, courses of instruction which shall be accepted by the University as equivalent.

The courses of instruction shall be as follows :

1. Chemistry, Inorganic and Organic: lectures and laboratory work : at least six months.
2. Biology (Zoology and Botany): lectures and laboratory work : at least one year.
3. Physics: lectures and laboratory work : at least six months.

The examination will include laboratory work in the three subjects. Candidates may pass in each part separately.

N.B.—In 1912 this examination will be held as follows: Part I will begin on Thursday, March 21st, Part II on Monday, June 10th, and Parts I and II on Monday, September 9th. The latest dates of entry and payment of fees will be as follows: For the March examination, THURSDAY, FEBRUARY 1st.
„ June „ FRIDAY, MARCH 1st.
„ September „ SATURDAY, AUGUST 31st.

Second Examination

7. The Second examination shall consist of two parts: Ordinance

PART I. Anatomy
Physiology.

PART II. Pharmacy.

8. Candidates, before presenting themselves for the Second examination, are required to furnish certificates of having attended courses of instruction in accordance with the Regulations of the University, and to have passed the First examination.

9. The names of candidates who have satisfied the Examiners in either part of the Second examination shall be published in alphabetical order.

Candidates for the Second examination are required to have passed the First examination, and to have attended complete courses of instruction, approved by the University, in Anatomy and in Physiology during four terms; in *Materia Medica* and in Pharmacy for one term. The certificates must shew (1) that dissection has been practised during Regulations

five terms at least ; (2) that laboratory instruction, approved by the University, has been received in Physiology ; (3) that practical instruction, approved by the University, has been received in *Materia Medica* and Pharmacy.

Subjects of examination

PART I.

Anatomy. Candidates may, at the discretion of the Examiners, be required to perform actual dissection.

Physiology includes laboratory work in Physiological Chemistry, Histology, and Experimental work.

PART II.

Practical Pharmacy. Candidates will be required to recognise drugs, and to compound medicines.

Candidates may pass in each part separately.

Candidates who fail to satisfy the Examiners in Part I or Part II must before being readmitted to examination produce evidence of having pursued such further study as may have been required by the Examiners.

N.B.—This examination is held twice in each session. In 1911-12 it will be held on Thursday, December 14th, and Saturday, June 22nd. The latest dates of entry and payment of fees will be SATURDAY, NOVEMBER 25th and SATURDAY, JUNE 8th, respectively.

Final Examination

Ordinance 10. The Final examination shall consist of three parts :

PART I. Pathology and Bacteriology

This may be taken at the end of the 10th term.

PART II. Forensic Medicine

Public Health.

PART III. Medicine

Surgery

Obstetrics and Gynæcology

Pharmacology and Therapeutics

Parts II. and III. may be taken at the end of the 15th term, either separately or together.

11. Candidates, before presenting themselves for any part of the Final examination, are required to have passed the Second examination, and to furnish certificates of having attended courses of instruction, in accordance with the Regulations of the University.

12. The names of candidates who have satisfied the Examiners in the first part of the Final examination shall be published in alphabetical order.

13. The names of candidates who have satisfied the Examiners in all the subjects of the Final examination, and are recommended for degrees, shall be published as follows :

1. Those awarded First Class Honours
2. Those awarded Second Class Honours
3. Those who have satisfied the Examiners.

The names shall be in alphabetical order in each case.

Certificates of attendance

Candidates, before presenting themselves for any part of the Final examination, are required to have passed the Second examination, and to have completed the tenth term of medical study. Candidates, before presenting themselves for the second or third part of the Final examination, are required to have passed the first part of the Final examination and to have completed the fifth year of medical study. Candidates must furnish certificates of having attended courses of instruction, approved by the University, in the University, or in a medical school recognised for this purpose by the University, in the subjects in which they offer themselves for examination. Regulations

Candidates are required to furnish certificates as follows :

A. Of having attended courses of instruction, approved by the University, in the University or in a medical school or hospital recognised for this purpose by the University, in the following subjects :

1. Pharmacology and Therapeutics, one term.

2. Pathology and Bacteriology, three terms.
The certificate in Pathology and Bacteriology must in all cases testify that the candidate has attended a course of laboratory instruction in these subjects, approved by the University.
3. Forensic Medicine, one term.
The certificate in Forensic Medicine must in all cases testify that the candidate has attended a course of practical instruction in Toxicology, approved by the University.
4. Public Health, one term.
5. Obstetrics and Gynæcology, two terms.
The certificate in Obstetrics and Gynæcology must in all cases testify that the candidate has attended a course of practical instruction approved by the University, in the use of obstetrical and gynæcological instruments.
6. Surgery, three terms ; Practical Surgery, two terms ; Ophthalmology, one term.
7. Medicine, four terms.
The certificate in Medicine must in all cases testify that the candidate has attended, during one term in each case, courses of instruction approved by the University in (a) Mental Diseases ; (b) Infectious Diseases.

B. In respect of Hospital work.

1. In Medicine and Surgery, of having attended the medical and surgical practice of a hospital or hospitals, approved by the University, during at least two and one-half years, of which years two at least must be subsequent to the date of passing the Second examination, except when exemption has been granted by the Senate, after report from the Board of the Faculty of Medicine. Clinical Medicine, two years of clinical lectures. Clinical Surgery, two years of clinical lectures.
2. In Pathology and Morbid Anatomy, of having attended during at least twelve months demonstrations in the post-mortem room of a hospital, including practical instruction.
3. In Obstetrics, (a) of having attended during not less than one month the indoor practice of a lying-in hospital or the lying-in wards of a general hospital approved by the University, and (b) of having personally conducted not less

than twenty cases of labour, subsequently to having acted as surgical dresser and clinical clerk.

The certificate must in all cases (*a*) testify that such attendance has been given under the direct supervision of a medical officer of the hospital, and (*b*) regarding the personal conduct of cases of labour, be signed by a member of the staff of a hospital or a maternity charity.

4. In Gynæcology, of having, during at least three months, received in either a general or a special hospital, approved by the University, such clinical instruction in the diseases peculiar to women as shall be approved by the University.
5. Of having received clinical instruction in diseases of the eye, ear, throat, and skin.
6. Of having received instruction in the administration of anæsthetics.
7. Of having acquired proficiency in vaccination.
8. Of having acted as a surgical dresser for six months, as a clinical clerk for six months, and as a clerk for three months in the post-mortem room of a hospital recognised by the University.

N.B.—This examination is held twice in each session. In 1911-12 it will be held on Wednesday, December 13th, and Saturday, June 22nd. The latest dates of entry and of payments of fees will be SATURDAY, NOVEMBER 25th and SATURDAY, JUNE 8th, respectively.

Detailed subjects of examination

PHARMACOLOGY AND THERAPEUTICS.

PATHOLOGY AND BACTERIOLOGY.

Candidates will be examined practically on Bacteriology, Pathological Anatomy, Histology, and Chemistry.

FORENSIC MEDICINE AND TOXICOLOGY AND PUBLIC HEALTH.

Candidates will be required to conduct a qualitative analysis of poisonous substances selected from the following list :

CLASS I. (In simple solution) Carbolic Acid, Alcohol, Chloroform, Chloral Hydrate, Strychnine, Brucine, Morphine, Meconic Acid.

CLASS II. (In combination with various organic substances) Mineral Acids, Oxalic Acid, Hydrocyanic Acid and the Cyanides, Caustic Alkalies, Phosphorus, Compounds of arsenic, antimony, mercury, lead, barium, zinc, copper, and silver.

They may also be required to determine the character of stains and stained fabrics, microscopically and chemically, and to recognise poisonous articles of the *materia medica*.

OBSTETRICS AND GYNÆCOLOGY: SYSTEMATIC, CLINICAL AND PRACTICAL.

Candidates will be required to show their practical acquaintance with obstetrical and gynæcological manipulations and instruments by the use of the phantom or otherwise, and will also be examined on museum preparations.

Candidates, in order to pass, must satisfy the Examiners in the clinical part of the examination.

SURGERY: SYSTEMATIC, CLINICAL, AND PRACTICAL.

Candidates will be examined on the use of surgical instruments and apparatus, and on museum preparations; they will also be required to perform operations on the dead body.

Candidates, in order to pass, must satisfy the Examiners in the clinical part of the examination.

MEDICINE: SYSTEMATIC AND CLINICAL, INCLUDING MENTAL DISEASES AND DISEASES OF CHILDREN.

Candidates, in order to pass, must satisfy the Examiners in the clinical part of the examination.

In determining the award of Honours account will be taken of the results of the Second examination.

In the paper on Medicine, passages of French and German relating to medicine will be included for translation into English. The marks obtained for such translation will be taken into account in determining the award of Honours, but not in determining the passing or rejection of any candidate.

Candidates who fail to satisfy the Examiners in any subject of the examination must, before being re-admitted to examination, produce evidence of having pursued such further study as may have been required by the examiners.

Degree of Doctor of Medicine

Ordinance 1. No candidate shall be admitted to the degree of Doctor of Medicine unless he has previously received the degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examination for those degrees.

2. Candidates for the degree of Doctor of Medicine are required to present a dissertation, and, if the dissertation be accepted, to pass an examination. The dissertation, of which the subject must previously have received the approval of the Board of the Faculty of Medicine, must embody the results of personal observations or original research, either in some department of medicine or of some science directly related to medicine, provided always that original work, published in scientific journals or in the Proceedings of learned societies, or separately, shall be admissible in lieu of or in addition to a dissertation specially written for the degree. Candidates will be required to write a short extempore essay on some topic connected with medicine, and to answer questions on the history of medicine. They will also be examined orally on the dissertation or other work submitted. Any candidate may be exempted from a part or the whole of the examination if the Board of the Faculty so decide. No candidate will be admitted to the degree unless his application, after report from the Board of the Faculty of Medicine, shall have been accepted by the Senate.

3. The names of candidates who have been approved for the degree of Doctor of Medicine shall be published in alphabetical order.

Candidates for the degree of Doctor of Medicine are required to furnish three copies (printed or type-written) of the dissertation or published work which they desire to submit, together with any drawings or specimens which may be necessary for their illustration. These copies shall be sent in to the Registrar and will be retained by the University. Regulation

Degree of Master of Surgery

1. No candidate shall be admitted to the degree of Master of Surgery unless he has previously received the degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examination for those degrees. Ordinance

2. Every candidate, before presenting himself for the examination for the degree of Master of Surgery, is required to have

graduated as Bachelor of Medicine and Bachelor of Surgery, and to furnish certificates of attendance in accordance with the Regulations of the University.

3. *Subjects of Examination :*

Surgical Anatomy
Surgery
Operative Surgery
Clinical Surgery
Ophthalmology
Pathology and Bacteriology.

4. The names of candidates who have satisfied the Examiners shall be published in alphabetical order.

Regulations

Candidates, before admission to the examination for the degree of Master of Surgery, are required to furnish certificates which shall be deemed satisfactory by the University that they, since taking the degree of Bachelor of Medicine and of Surgery, have held, for not less than six months, a Surgical appointment in a public hospital or other public institution affording full opportunity for the study of Practical Surgery.

Candidates proposing to present themselves for this examination are required to give notice, in writing, to the Registrar and pay the fee on or before June 1st.

Candidates for the degree of Master of Surgery are also required to furnish certificates :

1. Of having attended a special course of instruction on Operative Surgery, approved by the University, and of having personally practised the principal surgical operations on the dead body.
2. Of having attended a systematic course of instruction, including practical work, approved by the University, on Bacteriology.
3. Of having attended a course on Ophthalmology, and of having received instruction in Ophthalmic Surgery approved by the University.

Courses in Medicine

I. COURSES HELD IN THE UNIVERSITY BUILDINGS, COLLEGE ROAD

PHYSICS

Professor BRAGG and Demonstrators.

The course designed to meet the wants of candidates for the First examination of the University of Leeds or the First Examination for Medical Degrees of the University of London, will consist of experimental lectures on Monday, Wednesday and Friday at 11.30 a.m., during the first two terms.

Subjects: The elements of electricity, magnetism, sound, light, heat, and the properties of matter.

The Physical laboratory is open daily. A special course of Practical Physics for Medical students will be held on Saturday mornings, from 9.30 a.m. to 12.30 p.m., during the first two terms.

CHEMISTRY

Professor SMITHELLS, Professor COHEN
and Demonstrators.

I. Special Medical Course

This course extends over the first and second terms, on Monday, Wednesday and Friday, at 9.30 a.m., and an additional hour to be arranged later.

II. Practical Chemistry

During the first and second terms. On Monday, from 2 to 5 p.m.; Thursday from 2 to 5 p.m.; and Friday, from 2 to 4 p.m.

III. Organic Chemistry

During the session, at 12 (noon) on Tuesday, Thursday and Saturday.

IV. Practical Organic Chemistry

During the third term, 4 hours per week.

(Classes III and IV are suitable for the examination in Organic Chemistry for the London M.B.)

V. Sanitary Chemistry

For practitioners who are preparing for a diploma or degree in Public Health. During the third term, on Tuesday and Thursday from 2 to 5 p.m. The hours are subject to re-arrangement.

N.B.—For students who wish to take additional practical work of whatever kind, the Chemical Laboratory is open daily from October to June inclusive.

BIOLOGY

Professor GARSTANG, Professor PRIESTLEY
and Demonstrators

(1) Students preparing for the First examination of the University of Leeds, or the First examination for Medical Degrees of the University of London, take the full courses specified on pages 292 and 296.

Lectures on Zoology on Monday and Friday at 10.30 a.m.; and on Botany on Tuesday and Thursday at 9.30 a.m. Practical work in the Zoological laboratory on Tuesday afternoon throughout the session, and on Wednesday morning during the third term; in the Botanical laboratory on Tuesday and Thursday mornings, except during the second half of the second term.

Each student will be required to provide himself with a microscope (suitable also for his subsequent studies), a dissecting case, a biological drawing book, and some simple instruments for microscopic work.

(2) Students preparing for the examination of the Conjoint Board of the Royal Colleges of Physicians and Surgeons should take the above-mentioned course during the first two terms only. Fees and class regulations as for Biology for University students.

(3) Students preparing for the Fellowship examination of the College of Surgeons of England may take a three months' course of Zoology in the first term, including not less than four hours' practical work per week.

II. COURSES HELD IN THE SCHOOL OF MEDICINE

ANATOMY

Professor JAMIESON
and Demonstrators

I. Systematic and Descriptive Anatomy

Monday, Wednesday, Thursday, and Saturday at 9.15 a.m.

The general course of lectures begins in the summer and extends over three terms, the 3rd and the following 1st and 2nd. For students who cannot begin their anatomical studies till the winter, special arrangements are made to enable them to follow the lectures with profit.

The advanced course of instruction consists of meetings which are held in the 3rd and 1st terms following on the general course.

Systematic tutorial classes are held in connection with the above courses, and attendance on these is obligatory.

Medical students are required to attend both courses before being signed for one full course of anatomy.

II. Practical Anatomy

The dissecting room is open daily from 9 a.m. till 5 p.m., (Saturday until 12.30 p.m.) throughout the session, the work of the students being constantly supervised by the Demonstrators, who attend daily. Tutorial classes and examinations are held daily on recent dissections and on preparations from the anatomical museum; and special instruction is given to all students who are about to present themselves for examination, particularly to those preparing for the higher examinations, such as University degrees and the Primary F.R.C.S., Eng.

Only those students are admitted into the Dissecting-room who have entered for the Anatomy course, or who have paid the fee for the use of the room.

	<i>Fees</i>	£	s.	d.
Descriptive Anatomy:—				
General Course		7	7	0
Advanced Course		3	3	0
Use of Dissecting-room, with tutorial instruction, during attendance on the anatomical course, covering five terms		7	7	0
Use of Dissecting-room, with tutorial instruction, for every three months or portion of three months during the two years subsequent to the above period		2	2	0
Use of Dissecting-room, with tutorial instruction under all other circumstances, for three months, £3 3s. ; for six months		5	5	0

III. Applied Anatomy

The class meets on Monday and Thursday at noon, during the first and third terms, in the Anatomy Theatre. It is intended for senior students and for qualified practitioners. It deals with the application of anatomical facts to medicine and surgery, and is fully illustrated by dissections, diagrams, and the living model.

Fee, £2 2s.

PHYSIOLOGY AND HISTOLOGY

Professor BIRCH Mr. LLOYD

I. General Course

This course of lectures treats of Physiology generally, and is illustrated by experiments. Monday, Tuesday, Wednesday, Thursday, and Friday, at 11.45 a.m., during the first and second terms, and during the third term on Monday, Wednesday and Friday, at 9.30 a.m.

Fee, £8 8s.

II. Microscopical Demonstrations

are held at 11 a.m. every Saturday throughout the session, and are open to all students attending courses of Physiology.

III. Practical Physiology

A. Practical Histology.—During the third term, on Monday, Wednesday, and Friday, 10.30 a.m. to 12.45 p.m.

Students are required to provide themselves with the following: (1) A microscope of good construction, which must be submitted to the approval of the Professor before the commencement of the class as no one will be permitted to work with an inefficient instrument. The Professor will be glad to assist students in the choice of an instrument. (2) Some accessories (such as scissors, forceps, needles in handles, slides and cover glasses, etc.), a list of which can be had on application.

B. Chemical Physiology.—During the second term, on Monday, Wednesday, and Friday, for two hours in the afternoon.

C. Experimental Physiology.—During the first term, on Monday, Wednesday, and Friday, for two hours in the afternoon.

Fees for *A*, £6 6s.; for *B* and *C*, £4 4s.

IV. Practical Physiology for Dental Students

A three months' course for Dental Students preparing for the Diploma in Dental Surgery, which will include Histology, Dental Microscopy, and the elements of Chemical Physiology.

V. Physiological Demonstrations and Catechetical Classes

These classes are held regularly during the session at such times as are found convenient.

VI. Recapitulatory Class

Short laboratory courses for the repetition of laboratory work are formed in the second and third terms, and will meet twice a week, usually in the morning.

Fee, £2 2s.

The Physiological Laboratories

These laboratories are open daily for research. Special instruction is arranged for those preparing for Honours courses and Higher examinations (F.R.C.S. Eng., &c.)

PATHOLOGY AND BACTERIOLOGY

Professor GRÜNBAUM

Dr. COPLANS

Mr. ADAMSON

Dr. TELLING

Mr. COLLINSON

I. General Pathology

This course will be given in the second term on Monday, Tuesday and Friday at 12 (noon).

Fee, £4 4s.

II. Practical Pathology and Bacteriology

Tuesday, Wednesday, and Friday, from 12 (noon) to 1.30 p.m. during the third and first terms. In this class practical instruction with intercalated lectures is given in Morbid Histology, Bacteriology and Pathological Chemistry. Students will make and mount preparations for microscopical examination and will make bacteriological investigations required for diagnosis.

Each student must be provided with a good microscope, having an oil immersion lens and a condenser, and with the usual accessories, or he will not be permitted to attend the class.

Fee, £5 5s.

III. Tutorial Classes in Medical, Surgical and General Pathology

will be held by Dr. Telling, Mr. Collinson and Mr. Adamson as may be arranged from time to time.

IV. Clinical Pathology

A post-graduate practical class in this subject will be held during the months of October to December, on Wednesday at 4 p.m.

Fee, £3 3s.

V. Bacteriology for the Diploma in Public Health

This course will be held in the second term, on Tuesday and Thursday at 2 30 p.m. It will include practical instruction in the pathology of those diseases of animals which are communicable to man. Instruction is also given in agricultural and other technical Bacteriology.

Fee, £5 5s.

The Laboratories of Pathology and Bacteriology

are open daily for research work. The fees are on the same scale as in the other laboratories of the University.

In this department the various bacteriological and pathological investigations required by county and municipal authorities and by private practitioners are carried out.

**PRINCIPLES AND PRACTICE OF
MEDICINE**

Professor GRIFFITH

Dr. WATSON

Monday, Wednesday, and Friday, at 9 a.m., during the second and third terms and third term of following year.

The course is divided into the following sections :

Diseases of the nervous system.

Diseases of the organs of circulation.

Diseases of the organs of respiration.

Diseases of the digestive and blood-forming organs.

Diseases of the kidneys.

Infectious and contagious diseases, fevers, diphtheria, syphilis, hydrophobia, &c.

Parasites.

Diseases of the skin.

Diseases of special trades.

Diseases and Feeding of Infants.

Fee, £6 6s.

CLINICAL MEDICINE

Professor BARRS

A course of lectures chiefly Clinical is given in the first term at 9.15 a.m. on Wednesday. These lectures are based upon cases at the time in the wards, but may be given either at the Infirmary, or at the Medical School. Attendance upon them is required as part of the course of instruction in Medicine, and they do not take the place of the ordinary Clinical lectures given by the physicians at the Infirmary.

SURGERY

Professor KNAGGS

Mr. COUPLAND

Tuesday and Saturday, at 9 a.m., during the second and third terms.

The course comprises the following subjects :

The process of repair.

Inflammation ; suppuration ; ulceration.

The constitutionaleffects of injury ; shock, fever, delirium, &c.

Injuries and wounds, including special injuries of head, spine, throat, chest, and abdomen.

Special fractures and dislocations.

Surgical diseases ; gangrene ; erysipelas ; septicæmia ; pyæmia ; tetanus.

Tumours ; tubercle ; venereal diseases.

Surgical diseases of special parts :—skin, lymphatic system, vascular system, nervous system, bones, joints, &c.

Deformities. Plastic and orthopædic surgery.

Abdominal surgery, including hernia.

Diseases of the urinary and generative organs.

Fee, £6 6s.

CLINICAL SURGERY

Professor MOYNIHAN

A course of lectures chiefly Clinical is given in the first term at 9.15 a.m. on Tuesday. These lectures are based upon cases at the time in the wards, but may be given either at the Infirmary or at the Medical School. Attendance upon them is required as part of the course of instruction in Surgery, and they do not take the place of the ordinary Clinical lectures given by the surgeons at the Infirmary.

PRACTICAL SURGERY

Mr. THOMPSON

Tuesday and Thursday at 4 p.m., during the second and third terms.

In this are comprised :

1. A course of bandaging and application of splints and other appliances.

2. Demonstrations and descriptions of instruments and surgical appliances used in diagnosis or treatment.

3. The application of anatomical knowledge to the investigation of surgical diseases.

4. Methods of reducing dislocations, setting fractures and dressing wounds.

5. A course of operations performed on the dead body before the class, the members of which will be required to operate.

Fee, £4 4s.

OPERATIVE SURGERY

Mr. J. F. DOBSON

Classes will be formed for the performance of operations on the dead body, under the superintendence of the lecturer at times to be arranged. As all the important operations will be done by the students, every opportunity will be given for gaining practical experience in this branch of surgery.

Fee, £12 12s. divided in equal shares among a class of not more than four students.

OBSTETRICS

Professor HELLIER

Dr. OLDFIELD

Monday, Wednesday and Friday, at 9 a.m. during the third term (second term in 1912 and after).

Outline of the history of Obstetrics.

The female pelvis and organs of reproduction. Menstruation, Ovulation, Fertilization.

Pregnancy—normal and abnormal. Diseases of pregnancy. Abortion.

The foetus, membranes and placenta. Diseases of the same.

Labour — normal and abnormal. Mechanism and management.

The puerperal state and its pathology.

Pelvic deformity.

Obstetric instruments and obstetric operations.

The new-born child and its management.

Relation of child-bearing to diseases of the body generally.

The lectures will be illustrated by diagrams, models, lantern slides and museum specimens.

The various presentations will be demonstrated on the Phantom, and practical instruction given in the use of obstetrical instruments.

Tutorial classes are also held from time to time for students preparing for their final examinations.

The necessary facilities for clinical instruction in Obstetrics are given by the Maternity department of the Infirmary, the Hospital for Women and Children, and the Leeds Maternity Hospital.

Every student is required to take a month's clerkship in the extern. maternity department of the Infirmary and to attend not less than 20 labours.

This must be preceded by at least one month's attendance on intern maternity practice at the above-named Hospitals.

Fee, £5 5s. ; together with Gynæcology, £6 6s.

GYNÆCOLOGY

Dr. CROFT

Dr. OLDFIELD

Tuesday, Thursday and Saturday, at 9 a.m. in the third term.

The course comprises :—

The structure and functions of the female reproductive organs in relation to pathology and treatment.

A general account of the causation and prevention of gynæcological disease.

The methods and appliances employed in diagnosis.

The relation of gynæcological disease to the neuroses and other general diseases.

A systematic account of the various diseases peculiar to women ; their pathology, diagnosis, and treatment.

Fee, £3 3s. ; together with Obstetrics, £6 6s.

PHARMACOLOGY AND THERAPEUTICS.

Professor CAMPBELL

Monday, Wednesday and Friday, at 4 p.m. during the second term.

The course will include consideration of (*a*) the general principles of the treatment of disease ; (*b*) the physiological and therapeutical action of drugs and the mode of their administration ; (*c*) the use of remedial measures other than drugs, including heat, cold, massage, electricity, climatic and dietetic treatment.

Fee, £3 3s.

MATERIA MEDICA AND PHARMACY.

Professor CAMPBELL

Mr. J. H. GOUGH

Monday and Wednesday, 2.45 to 5 p.m., during the third term.

Subjects :

Materia Medica : Sources, preparation, physical characters, pharmacopœial combinations, tests, doses, and general uses of the principal drugs.

Practical Pharmacy : General pharmaceutical processes ; prescriptions ; weights and measures ; the compounding of a large series of typical prescriptions, including mixtures, pills, powders, emulsions, tinctures, lotions, inhalations, plasters, ointments, &c. The best methods of dispensing the principal drugs. Incompatibility.

The first hour is given to demonstrations and tutorial teaching in *Materia Medica*, the remaining time being devoted to *Practical Pharmacy*.

Fees: *Materia Medica*, £4 4s. ; *Practical Pharmacy*, £3 3s.

PUBLIC HEALTH

Professor CAMERON

Wednesday and Saturday, at 9 a.m., during the first term.

Comparison of rates of mortality in town and country. Epidemic and endemic diseases and their prevention. Isolation hospitals. Disinfection and disinfectants. Influence of occupation on health. Factory and workshop legislation.

Meaning to be attached to death rates. How they are affected by constitution of the population in regard to age and sex.

Registration of births. Certificates of causes of death, for burial, for cremation.

Notification of infectious diseases.

The dwelling: site, subsoil, aspect, structure, lighting, ventilation, drainage, overcrowding.

Public and private water supplies, their dangers.

Disposal of refuse, including sewage.

Visits to works, &c.

Fee, £3 3s.

N.B. For candidates for degrees or diplomas in Public Health, this course will be supplemented by additional lectures dealing more fully with vital statistics (including the estimation of populations and other calculations of death rates); the registration and following up of infectious cases; the examination of dwellings; water supplies; refuse destructors; disinfecting stations; the general management of a health department.

FORENSIC MEDICINE & TOXICOLOGY

Professor EURICH

1. Forensic Medicine

Tuesday, Wednesday, Thursday, and Friday at 4 p.m. during the first term.

The qualifications, duties, and responsibilities of medical witnesses.

Questions concerning age, sex, identity, insanity and life insurance.

Death :—Real and apparent death ; date of death ; causes of sudden and violent death ; post-mortem examinations.

Death by wounds ; by lightning, burns, cold and starvation ; by drowning, hanging, strangling and suffocation.

Rape ; pregnancy ; delivery ; the legitimacy of children ; abortion ; infanticide.

Toxicology :—general considerations respecting poisoning ; toxicological processes and the evidence of poisoning ; symptoms of special poisons ; treatment and analysis.

Fee, £5 5s.

II. Practical Toxicology

The class meets on Thursdays and Fridays from 3 to 5 p.m. during one month of the first term. Students receive practical instruction in the methods of detecting the more common poisons, including prussic acid and the cyanides, carbolic acid, oxalic acid, and the oxalates, arsenic and metallic poisons, mineral acids, caustic alkalies, alcohol, chloral and chloroform, alkaloids, &c.

Fee, £2 5s., including the use of apparatus.

OPHTHALMOLOGY AND OTOLOGY

MR. SECKER WALKER

Tuesday and Friday at 9 a.m., during the third term (first term in 1912 and after).

Subjects :

Ophthalmology : Surgical anatomy of the eye, theory of the ophthalmoscope, retinoscopy ; emmetropia, hypermetropia, myopia, astigmatism ; theory of accommodation ; diseases of the conjunctiva and cornea, of the iris, ciliary body and choroid ; cataract ; glaucoma ; diseases of the retina and optic nerve ; functional diseases of the eye ; affections of the ocular muscles and lacrymal apparatus ; diseases of the orbit and eyelids.

Otology : Diseases of the external ear ; diseases of the middle ear, their connection with naso-pharyngeal disorders ; disease in the mastoid process, its extension to the cranial cavity ; diseases of the internal ear.

Fee, £3 3s.

MENTAL DISEASES

Professor BOLTON

Systematic lectures are given at the School of Medicine on Thursday and Friday at 4 p.m., and clinical lectures and demonstrations at the West Riding Asylum, on Tuesday, at 3.30 p.m., during the third term.

In the systematic lectures, the pathology, symptoms, medico-legal relations and treatment of insanity will be discussed.

The clinical course will embrace :

Illustrations of the various forms of mental disease.

Instruction in the method of examining insane persons.

Practical demonstrations on the moral and therapeutic treatment of the insane ; compulsory feeding, &c.

Filling up certificates of insanity.

Class examinations.

The pathological aspects of insanity will be freely illustrated by lantern slides, morbid specimens and microscopic preparations from the museum of the Asylum.

Fee, £3 3s.

HOSPITAL PRACTICE

1. While for the Leeds M.B. degree two and one-half years' hospital practice are required, for certain degrees three years' hospital practice is necessary, and *one* of these should be taken before the Second examination has been passed. Students intending to take such degrees should enter their names upon the Infirmary Register at *the beginning of the third year of their studies in medicine*. Failure to do this will prevent them from completing the necessary attendance by the time when they would normally present themselves for the Final examination. For the degree of the University of Leeds students enter their names at the beginning of the eighth term.

2. In order to be entered upon the Infirmary register students must first interview the Clinical Sub-Dean, from whom advice can be obtained in arranging their work at the Infirmary.

3. The attention of students is directed to the necessity for carefully arranging, beforehand, the time at which they

propose attending at the Fever hospital, as during the period of such attendance they are excluded from the surgical, ophthalmic and gynæcological wards and cannot act as maternity clerks.

Full information as to clinical instruction and appointments offered to students is contained in the prospectus of the School of Medicine.

Leeds General Infirmary

The medical and surgical practice required by medical students is taken at this institution, which offers abundant opportunities for clinical study. Situated in the centre of a densely populated manufacturing and mining district, and drawing patients also from a wide surrounding area, its wards present an ample field for the study of diseases and injuries. The concentration of medical, surgical, gynæcological, ophthalmic, aural and children's diseases in one hospital leads to much economy in time and labour to the student.

The nature of the work done in the Leeds Infirmary makes the clerkships and dresserships of great value, and the resident appointments involve so much practical work and personal responsibility as to give the holders a very varied and valuable experience.

Leeds Public Dispensary.

About 45,000 medical and surgical cases are treated annually, partly as out-patients, and partly at their own homes. There are one senior and four junior resident medical officers, and to each of the latter a separate district of the city is assigned.

The practice of the Dispensary is open to any student on application to one of the honorary staff.

Leeds City Fever and Small Pox Hospitals

Students are admitted at the Leeds City Hospitals (Medical Superintendent, Mr. A. E. Pearson) on having obtained sanction from the Dean of the Faculty of Medicine, subject to such regulations as may be made from time to time by the Leeds City Council.

Students must abide by the rules laid down as to disinfection and other matters, and must satisfy the Corporation authorities that they are sufficiently protected against small pox by vaccination.

Courses lasting two months are held in each term on three afternoons in each week.

At the Small Pox hospital a minimum period of one week's residence may be required with payment in advance of 12s. a week for board and lodging.

The hospitals are not open to students during April, August, and September. Clinical lectures and demonstrations on infectious diseases will be given by the Medical Superintendent of the hospitals, and the attendance of students at these lectures and on the practice must be completed during the term for which they enter.

Those desirous of attending the practice outside the ordinary classes or clinical instruction, and not requiring a certificate of their attendance, must apply for permission to the Medical Officer of Health of the City of Leeds, Dr. J. S. Cameron, at his office in 41, Park Square, between the hours of 10 and 11 a.m.

Fee for the three months' course, £2 2s.

Hospital for Women and Children.

The gynæcological wards contain 45 beds and the children's ward 6 cots. The maternity department contains 5 beds for cases of delivery, of which a large portion are abnormal. During the year 1910, 116 deliveries were dealt with. A large number of cases of diseases associated with pregnancy are also treated in the hospital. Students appointed as *Maternity Clerks* are required to attend the midwifery practice of the hospital in accordance with the University regulations. Two resident *House Surgeons*, who must be legally qualified, are appointed every six months, with a salary at the rate of £50 per annum with board. Two *Anæsthetists*, who must be legally qualified, are appointed annually. Each receives an honorarium of

£2 per annum. Honorary *Clinical Assistants* are also appointed by the Honorary Staff. These appointments are specially valuable to those wishing to do post graduate work in gynæcology and diseases of children.

Leeds Maternity Hospital.

The practice of the Maternity Hospital (33 beds), 42, Hyde Terrace, is available for the instruction of students, subject to regulations laid down by the Hon. Medical Officers.

West Riding Lunatic Asylum, Wakefield.

This institution, which accommodates 2,023 patients, offers unusual advantages to those who desire to make themselves conversant with the treatment and management of the insane. A hospital containing 280 beds has been provided for the treatment of acute insanity, and a separate home for 70 imbecile and idiot children has been lately opened. Clinical lectures and demonstrations are given at the Asylum by Professor J. Shaw Bolton, Medical Director of the Asylum, in connection with the systematic lectures on insanity delivered at the School of Medicine, by Dr. Bedford Pierce.

Instruction in Vaccination

This instruction is given under the control of the Local Government Board at the General Infirmary at Leeds, on Thursdays at 3 p.m., by Mr. A. T. Bacon, Instructor in Vaccination. Classes begin in October, February, and May. Each class consists of seven meetings, six of which must be attended, four of them consecutively.

Application to be made to the Academic Sub-Dean. Not more than ten students can be admitted to any one class.

Fee, £1 11s. 6d.

DIPLOMA IN PUBLIC HEALTH

Regulations The examination is held twice in each year, in June and December, under the following

Regulations.

1. The examination is in two parts, and is written, oral, and practical.

2. Candidates, before entering for the first part of the examination, must have held for not less than twelve months a registrable qualification in Medicine, Surgery, and Midwifery, and must present satisfactory certificates,

i. Of having attended an approved course of instruction in Public Health in the University, or in a college or medical school recognised for this purpose by the University; or of having attended, at some other institution, courses of instruction which shall be accepted by the University as equivalent.

ii. Of having attended, after obtaining a registrable qualification, during at least six months practical instruction in laboratories approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man. Three of these months must be spent in the University in attendance on one of the practical courses.

Candidates before entering the second part of the examination must present certificates,

iii. Of having, after obtaining a registrable qualification, attended during not less than three months the clinical and administrative practice of a hospital for infectious diseases approved by the University.

iv. Of having, after obtaining a registrable qualification, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under

ii), been diligently engaged in acquiring a knowledge of the duties, routine and special, of Public Health administration under the supervision of (a) the medical officer of health of a county, or of a single sanitary district having a population not less than 50,000, or (b) a medical officer of health devoting his whole time to Public Health work, or (c) a medical officer of health who is also a teacher in the Department of Public Health of a recognised medical school, or (d) a sanitary staff officer of the Royal Army Medical Corps having charge of an Army Corps, district or command, recognised for the purpose by the General Medical Council, *or* of having attended during three months as required above, and during three months after obtaining a registrable qualification, having attended a course or courses of instruction, approved by the University, in subjects bearing on Public Health Administration.

3. Candidates may present themselves for Parts I and II separately or at the same time, provided that no candidate be allowed to pass in Part II unless he has already passed in Part I. No candidate's name will be published until he has satisfied the Examiners in both parts of the examination.

4. The fee for each part is £5 5s., and must be paid at least fourteen days before the commencement of the examination. For any subsequent examination in the same part the fee will be £3 3s.

Every candidate who has passed both parts of the examination, and who is legally registered, will receive a diploma in Public Health.

Medical Practitioners registered or entitled to be registered on or before January 1, 1890, may be exempted from producing the above required certificates of study.

N.B.—In the current session the examination will begin on Thursday, December 14th, 1911, and on Monday, June 24th, 1912. Notice must be given and fees paid not later than NOVEMBER 25th and JUNE 8th respectively.

Subjects of Examination*Part I***1. CHEMISTRY AS APPLIED TO PUBLIC HEALTH :**

Chemistry, with special reference to the examination of air and water. Methods of qualitative and quantitative analysis.

2. PHYSICS AS APPLIED TO PUBLIC HEALTH :

Elements of Heat, with special reference to warming, ventilation, and meteorology. Meteorological instruments and their use.

3. ÆTIOLOGY OF DISEASE :

Pathology of epidemic and endemic diseases, including diseases of animals communicable to man. Influence of unwholesome food, air, water, occupation, dwelling, climate, season, soil.

4. PRACTICAL PATHOLOGY AND BACTERIOLOGY :

Practical Bacteriology, detection and cultivation of vegetable parasites, bacteriological analysis of air and water. Recognition of parasites and of the lesions which they produce in man. Recognition of diseased meat.

5. MICROSCOPY AS APPLIED TO PUBLIC HEALTH :

Foods, their adulterations, contaminations, and parasites. Air and water, their microscopical impurities.

*Part II***1. ENGINEERING AS APPLIED TO PUBLIC HEALTH :**

Water supply. Drainage, sewerage, and disposal of refuse. Construction of dwellings, schools, hospitals, including their warming and ventilation. Geological data referring to the above. Interpretation of plans.

2. SANITARY LAW AND ADMINISTRATION :

Domestic and general sanitation of houses, villages, and towns. Regulation of offensive, dangerous, or unhealthy trades and occupations. The prevention and control of epidemic disease by isolation, disinfection, vaccination, and other methods. Statutes and bye-laws relating to Public Health. The control of the food supply.

3. VITAL STATISTICS.**4. SANITARY REPORTING :**

The candidate will be required to visit and report upon the sanitary condition of some locality assigned to him by the Examiners.

COURSES OF INSTRUCTION FOR CANDIDATES PREPARING FOR DIPLOMA IN PUBLIC HEALTH

The following courses of instruction are arranged to prepare for the University diploma, and for those of other examining bodies :

1. Public Health. (See page 470).

2. Sanitary Chemistry. In the Chemical laboratory, College Road. (See page 289).

3. Bacteriology. At the School of Medicine during the second term on Tuesday and Thursday at 2.30 p.m. (See page 464).

Each student must be provided with a microscope approved by the Professor. The microscope must have an immersion lens and a condenser.

Fee, £5 5s.

4. Attendance at a Hospital for Infectious Diseases. A special course, including instruction in administration, is given in the Leeds City Hospitals in accordance with the requirements of the General Medical Council. Times of attendance to be arranged.

Fee, £5 5s.

5. Practical Work in Sanitation. With the sanction of the Sanitary Authorities of Leeds, the Medical Officer of Health arranges courses of six months' instruction in out-door and office sanitary work. Fee for the course, payable in advance to Dr. Spottiswoode Cameron, at his office, 41, Park Square, between 10 and 11 a.m., £10 10s.

The University entrance fee of £1 1s. is charged to those who have not previously been students of the University, unless a sessional fee of 7s. is paid for each class attended.

DIPLOMA IN PSYCHOLOGICAL MEDICINE

Regulations

1. The examination is in two parts, and is written, oral and practical.

2. Candidates, before entering for the first part of the examination must produce evidence

(A) 1. Of being graduates in Medicine of at least one year's standing.

2. Of having attended approved courses of instruction on the subjects of examination during six months at least after graduation.

3. Of having acted as Clinical Clerk or Assistant Medical Officer in an Asylum, recognised for this purpose, for a period of at least six months.

4. Of having attended a course of systematic instruction on the normal and morbid anatomy of the brain for a period of six months in the recognised laboratories of the University.

(2, 3 and 4 may be taken concurrently, and as evidence of (4) must be produced a laboratory note book record of practical work which has been regularly inspected and signed by a recognised teacher.)

or (B) 1. Of having acted as Assistant Medical Officer in an Asylum of not less than 500 beds for a period of at least two years.

2. Of having attended a course of systematic instruction on the normal and morbid anatomy and histology of the brain for a period of six months in the recognised laboratories of the University.

(As evidence of this must be produced a laboratory note book record of practical work which has been regularly inspected and signed by a recognised teacher.)

3. In addition to the laboratory work under (2), or in lieu of three months thereof, candidates may submit a dissertation which must embody the results of personal observations or original research in relation to psychological medicine, provided always that original work, published in scientific journals, or in the proceedings of learned societies, or separately, shall be admissible in lieu of or in addition to a dissertation specially written for the diploma.

Subjects of Examination

PART I.

- (i.) The Development, Anatomy, Histology and Physiology of the Brain (Human and Comparative).
- (ii.) The Morbid Anatomy and Morbid Histology of the Brain from both theoretical and practical aspects.

PART II.

- (iii.) Psychology, with especial reference to the symptomatology of Mental Disease.
- (iv.) Clinical Psychiatry, Asylum Administration, and the Medico-Legal aspects of Insanity.

Candidates, in order to pass, must satisfy the examiners in the clinical part of the examination.

Candidates may present themselves for Parts I and II separately or at the same time, provided that no candidate be allowed to pass in Part II. unless he has already passed in Part I. No candidate's name will be published until he has satisfied the Examiners in both parts of the examination.

The fee for the examination is £5 5s., and must be paid at least fourteen days before the commencement of the examination. For any subsequent examination the fee in each part will be £1 11s. 6d.

Every candidate who has passed both parts of the examination and is legally qualified and registered, will receive a diploma in Psychological Medicine.

DEGREES IN DENTAL SURGERY

Ordinance 1. The degrees in Dental Surgery shall be :

Bachelor of Dental Surgery (B.Ch.D.)

Master of Dental Surgery (M.Ch.D.)

Degree of Bachelor of Dental Surgery

2. All candidates for the degree of Bachelor of Dental Surgery shall be required to have passed the Matriculation examination, to have pursued thereafter approved courses of study for not less than five academic years, two of such years at least having been passed in the University subsequently to the date of passing Parts I and II of the First examination, and to have completed such period of pupilage or hospital attendance, or both, as may be prescribed by the Regulations of the University. No candidate shall be admitted to the degree who has not attained the age of twenty-one years on the day of graduation.

3. All candidates shall be required to have passed the following examinations: The First examination, the Second examination, the Final examination.

4. Each examination shall include practical work in the subjects offered.

5. All candidates shall be required, before presenting themselves for examination, to furnish to the Registrar certificates testifying that they have attended the prescribed courses of instruction in accordance with the Regulations of the University in each of the subjects which they offer, and that they have fulfilled the other requirements of the Ordinance and Regulations in respect of such examination.

Regulation In each examination the names of candidates who have satisfied the Examiners shall be published in alphabetical order.

First Examination

6. The First examination shall consist of three parts : Ordinance

PART I. Physics
Chemistry.

PART II. Biology.

PART III. Dental Mechanics
Dental Metallurgy.

7. Candidates shall be allowed to pass in each part separately.

8. Candidates who have passed the Intermediate examination for the degree of Bachelor of Science, and have in that examination satisfied the Examiners in Chemistry, in Physics, or in Biology, shall, on payment of the difference between the fees required for the two examinations, be regarded as having satisfied the requirements of Parts I and II of the First examination for the degree of Bachelor of Dental Surgery, in those subjects in which they have passed.

9. Candidates shall be required, before presenting themselves for Parts I and II of this examination, to have passed the Matriculation examination, and to have attended courses of instruction in accordance with the Regulations of the University.

10. Candidates shall be required, before presenting themselves for Part III of this examination, to have completed two years from Matriculation, and to have attended courses of instruction in accordance with the Regulations of the University.

Candidates for the First examination are required to Regulations
furnish certificates of having attended approved courses of instruction at the University or at an institution recognised for this purpose by the University ; or of having attended, at some other institution, courses of instruction which shall be accepted by the University as equivalent.

The courses of instruction shall be as follows :—

1. Chemistry, Inorganic and Organic ; lectures and laboratory work : at least six months.

2. Biology (Zoology and Botany) : lectures and laboratory work : at least one year.
3. Physics : lectures and laboratory work : at least six months.

The examination will include laboratory work in the three subjects. Candidates may pass in each part separately.

Every candidate for Part III of the First examination shall be required to have spent two years in the Prosthetic Department of a recognised Dental or General Hospital, or in pupilage to a qualified and registered dental surgeon, and to have attended, during at least one year, courses of lectures and practical instruction approved by the University, in the subjects of the examination, namely : Dental Mechanics (including electrical appliances used in Dentistry) : lectures and laboratory work. Dental Metallurgy : lectures and laboratory work

The First examination shall be held twice in each calendar year.

Second Examination

Ordinance 11. The subjects of the Second examination shall be :

Anatomy
Physiology
Dental Anatomy and Physiology
Dental Materia Medica.

12. Candidates shall be required, before presenting themselves for the Second examination, to have passed the First examination not less than one year previously, and to have attended courses of instruction in accordance with the Regulations of the University.

Regulations Candidates for the Second examination shall be required to have attended courses of instruction approved by the University, as follows : Anatomy lectures, two terms ; Practical Anatomy and demonstrations, including the dissection of the head and neck, three terms ; Dental Anatomy and Physiology, one term ; Dental Microscopy, one term ; Physiology lectures, two terms ; Physiological

Laboratory, one term ; Practical Histology, one term ;
Dental Materia Medica, one term.

The Second examination shall be held twice in each
calendar year.

Final Examination.

13. The subjects of the Final examination shall be :

Ordinance

Dental Surgery
Dental Pathology and Bacteriology
Operative Dental Surgery
Medicine and Surgery.

14. Candidates shall be required, before presenting themselves for the Final examination, to have passed the First examination not less than two years previously, to have passed the Second examination not less than six months previously, and to have attended courses of instruction in accordance with the Regulations of the University.

Candidates for the Final examination shall be required to have attended courses of study, approved by the University, as follows : Surgery lectures, two terms ; Special Surgery of the Mouth, six lectures ; Medicine lectures, two terms ; Dental Surgery and Pathology lectures, two terms ; Operative Dental Surgery lectures, one term ; Demonstrations on Anæsthetics, two terms ; Dental Bacteriology, lectures and practical work, one term ; Dental Clinical Lectures, two terms. Regulations

Candidates shall be required to present certificates of two years Medical, Surgical and Dental practice at hospitals recognised by the University. These certificates must show that practical instruction has been received in Medicine, Surgery, and the administration of Anæsthetics. Every candidate shall be required to have acted as clerk and as dresser, for three months in each case, in a hospital recognised by the University.

The Final examination shall be held twice in each
calendar year.

DIPLOMA IN DENTAL SURGERY

Regulations Candidates for the diploma in Dental Surgery (L.D.S.) are required to present certificates showing that they have attained the age of twenty-one years, that they have attended courses of instruction, approved by the University, extending over not less than four years, two of which must have been spent in the University after passing the preliminary examination in Science.

Candidates are required to satisfy the Examiners in the several subjects of the following examinations :

A Preliminary examination in Arts ; a Preliminary examination in Science ; the First Professional examination ; and the Final examination.

Preliminary Examination in Arts

The requirements of the Preliminary examination in Arts shall be fulfilled by passing an examination recognised for this purpose by the General Medical Council.¹

Preliminary Examination in Science

The Preliminary examination in Science shall be held twice yearly. Its subjects shall be :

Chemistry

Physics.

Candidates are required to have attended courses of instruction at the University as follows : Chemistry, lectures and laboratory, two terms ; Physics, lectures and laboratory, two terms ; *or* to present evidence of having given adequate attendance, at some other institution, upon courses of instruction which shall be accepted by the University as equivalent to the above courses.

N.B.—This examination will begin on Thursday, March 21st and Monday, September 9th 1912. The latest dates of entry and of payment of fees will be THURSDAY, FEBRUARY 1st and SATURDAY, AUGUST 31st respectively.

¹ The subjects are the same as for the Matriculation Examination (page 441) except that under (5) only *one* subject, Greek *or* a modern language is required.

First Professional Examination

The subjects of the First Professional examination are :

Dental Metallurgy

Dental Mechanics.

Candidates are required to have passed the Preliminary examination in Science not less than six months previously, and to have attended courses of instruction, recognised by the University, in the subjects of the examination, according to the syllabus of the Royal College of Surgeons. They are also required to give evidence of having been engaged for two years in pupilage.

N.B.—The First Professional and Final examinations will begin on Wednesday, December 13th, 1911, and Saturday, June 22nd, 1912. The latest dates of entry will be SATURDAY, NOVEMBER 25th and SATURDAY, JUNE 8th respectively.

Final Examination

The Final examination shall consist of two parts :

PART I. Anatomy

Physiology

Dental Anatomy and Physiology

PART II. Surgery

Dental Surgery, Pathology and Bacteriology

Operative Dental Surgery (Practical)

Dental Materia Medica and Therapeutics.

Candidates must pass in Part I before being examined in Part II, and may pass the two Parts separately. The examination in Part II shall be held immediately after that in Part I, so that the two parts may be passed, if desired, in immediate succession.

Candidates, before presenting themselves for examination in Part I, are required to have passed the First Professional examination not less than one year previously, and to have attended courses of instruction recognised by the University, as follows : Anatomy lectures, two terms ; Practical Anatomy, three terms ; Physiology lectures, two terms ; Practical

Physiology, one term; Dental Anatomy and Physiology lectures, two terms; Practical Dental Histology, one term; Surgery lectures, two terms.

Candidates before presenting themselves for examination in Part II, must have passed in Part I, and must produce evidence of having (1) completed four years from the beginning of their pupilage; (2) completed two years Medical and Surgical practice at hospitals recognised by the University; (3) completed two years' Dental Hospital practice; (4) attended courses of instruction recognised by the University, as follows: Medicine, one term; Dental Surgery Therapeutics and Pathology lectures, two terms; Dental Bacteriology lectures, one term; Dental Materia Medica, one term; Operative Dental Surgery lectures, one term; Six Special Anæsthetic demonstrations; Special Surgery of the Month, six lectures; Surgery Lectures, two terms; Dental Clinical Lectures, two terms. The certificates of Medical and Surgical practice must show that practical instruction has been received in Medicine and Surgery, and in the administration of Anæsthetics.

Fees for Dental Classes

The fees for lectures and practical work in Dentistry are as follows: Dental Surgery and Pathology, 6 guineas; Operative Dental Surgery, 4 guineas; Dental Anatomy and Physiology, 6 guineas; Dental Mechanics, lectures 3 guineas and practical work 3 guineas; Dental Metallurgy, lectures 3 guineas and practical work 3 guineas; Dental Microscopy, 3 guineas; Dental Bacteriology, 2 guineas; Dental Materia Medica, 2 guineas.

Composition Fees

For the degree in Dental Surgery the composition fees are as follows:

- (a) Fee covering all the requisite courses is 65 guineas, payable in two instalments of 45 and 20 guineas respectively, or £65 if paid in one sum.
- (b) Fee for the courses, excluding Parts I and II of the First examination, £55.

- (c) Fee for the courses for the Second and Final examinations, £48.

For the diploma in Dental Surgery the composition fees are as follows:

- (a) Fee covering all the requisite courses is 60 guineas, payable in two instalments of 40 and 20 guineas respectively or £60 if paid in one sum.
- (b) Fee for the courses for the First Professional and Final examinations, £52.
- (c) Fee for the courses for the Final examination (Parts I and II), £45.

Fees for Dental Examinations

For the First examination for the degree of B.Ch.D., £5 ; and for each subsequent examination, £2.

For the Second examination for the degree of B.Ch.D., £4 ; and for each subsequent examination, £2.

For the Final examination for the degree of B.Ch.D., £4 ; and for each subsequent examination, £2.

For the Preliminary examination in Science for the diploma of L.D.S., £2 ; and for each subsequent examination, £1.

For the First Professional examination for the diploma of L.D.S., £2 ; and for each subsequent examination, £1.

For Part I of the Final examination for the diploma of L.D.S., £3 ; and for each subsequent examination £1.

For Part II of the Final examination for the diploma of L.D.S., £3 ; and for each subsequent examination, £1.

Degree Fees

For conferment of degree or diploma, £5.

Courses in Dental Surgery

1. COURSES HELD IN THE UNIVERSITY BUILDINGS, COLLEGE ROAD

The courses arranged in Physics, Chemistry, and Biology will be found under Courses in Medicine.

2. COURSES HELD IN THE SCHOOL OF MEDICINE

The courses arranged in Anatomy, Physiology and Histology, Pathology and Bacteriology, Principles and Practice of Medicine, and Surgery, will be found under Courses in Medicine.

DENTAL SURGERY AND THERAPEUTICS

MR. PLUMLEY

Thursday at 12 during the first and second terms.

Condition of the jaws and teeth at birth.

Relation of the teeth to the bone and adjacent structures.

Temporary dentition: infantile disorders dependent thereon.

Permanent dentition.

Malocclusion: diagnosis and treatment.

Dental irregularities: classification as to size, form, and number.

Abnormal teeth: syphilitic, hypoplastic, supernumerary, geminated, dilacerated, deflected.

Dental Caries: etiology, prophylactic and remedial treatment.

Erosion: etiology and treatment. Attrition.

Pathological conditions of the tooth pulp: acute and chronic inflammation, ulceration, gangrene, polypus intrinsic calcification, degeneration.

Injuries to the teeth: fracture, dislocation, treatment by replantation and implantation, transplantation.

Periodontitis, acute and chronic. Exostosis, pyorrhœa alveolaris.

Alveolar abscess: etiology, pathology, and treatment.

Salivary calculus.

Neuralgia and odontalgia.

Lesions due to dental causes: nervous, muscular, trophic.

Injuries and diseases of the maxillæ: fractures, necrosis, pathology and treatment.

Diseases of temporo maxillary articulation: operative and mechanical treatment.

Diseases of the antrum: cysts and empyema, mechanical appliances for drainage.

Cleft palate and oral deformities: treatment by obturators, and vela.

Diseases of the gums: acute and chronic inflammation, hypertrophy, polypus, papilloma, stomatitis.

Morbid growths: Innocent. Cystic. Malignant. Odontomes.

OPERATIVE DENTAL SURGERY.

Mr. T. S. CARTER

Wednesday, at 4 p m., during the third term.

The surgery: its fittings and hygiene.

Instruments and surgical cleanliness.

Treatment of patients: time and pain-saving methods.

Uses of electric current in dental therapeutics.

Case recording.

Scaling and oral hygiene.

Prophylaxis and treatment of dental caries.

Rubber dam and other means of controlling saliva

Separating and separators.

Principles of cavity preparation.

Filling materials: characteristics and manipulation.

Special preparation of cavities for and filling with : gold and tin, cements, gutta percha, amalgam, and porcelain inlays, and the treatment of fillings with respect to contour.

Treatment of the dental pulp: its conservation and devitalization, gradual and immediate.

Root fillings.

Treatment of septic roots and alveolar abscesses.

Extractions and the casualties liable to occur.

Fractures of the jaws and their treatment.

Crowning: mechanical principles, root preparation for, construction and fixing of banded crowns and flush crowns.

Repair of crowns.

Cleft palate: obturators and treatment.

DENTAL ANATOMY AND PHYSIOLOGY

MR. ALAN FORTY

Thursday at 4 p.m. during the first and second terms.

Human Anatomy

Morphology of the teeth.

The teeth as dermal appendages.

The dental tissues: Enamel, dentine, secondary dentine, cementum, tooth pulp, alveolo dental membrane, gum.

Nasmyth's membrane.

Development of the teeth.

Calcification of the dental tissues.

Development and growth of the maxillæ and mandible.

Eruption: attachment and absorption.

Comparative Anatomy.

The homologies of the teeth.

The attachment of the teeth.

Plici-dentine, vaso-dentine, osteo-dentine.

The evolution and characteristics of the mammalian dentition.

Notation of the teeth, or dental formulæ.

The development and characteristics (*in outline only*) of the teeth of vertebrata.

Pisces, Amphibia, Reptilia, Aves (Extinct).
 Mammalia, Prototheria and Monotremata.
 Metatheria and Marsupialia, Eutheria, Edentata, Sirenia,
 Cetacea, Ungulata, Rodentia, Carnivora, Insectivora,
 Chiroptera, Primates.

Practical Physiology and Dental Microscopy

A three months' course for dental students preparing for the Diploma in Dental Surgery, which will include Histology, Dental Microscopy, and the elements of Chemical Physiology.

DENTAL MECHANICS

Mr. RIPPON

Tuesday at 4 p.m. during the third and first terms.

Making impression trays.

Obtaining impressions of the mouth in plaster of Paris, composition, gutta-percha, bees' wax.

Making and preparation of models for vulcanite and plate work.

Methods of obtaining the correct bite.

Use of articulators

Mounting porcelain teeth.

Making bands and clasps.

Making wire for bands and springs.

Use of the various flasks for vulcanizing.

Casting metal dies and counter dies.

Swaging of gold and other metal plates.

Soldering: solders, their composition and qualities.

Making crowns: all gold, gold and porcelain, all porcelain, etc.

Bridge work, removeable and fixed.

Gum section work.

Continuous gum work.

Inlay work, gold and porcelain.

Making of regulating appliances.

The mechanical treatment of cleft palate.

The mechanical treatment of fractured jaws.

The use of the various work-room materials.

DENTAL METALLURGY¹

Mr. LOWSON

Monday and Friday at 11 a.m. during the first half of the third term (lectures).

Thursday at 2 p.m. during the first term (practical).

Physical and Chemical Properties of the metals: gold, platinum, palladium, silver, tin, antimony, mercury, lead, bismuth, zinc, cadmium, copper, aluminium, iron, nickel.

Alloys: Preparation, composition and properties.

Amalgams: Preparation and properties.

Solders: Composition and uses.

Description of blowpipes, furnaces, muffles, and their uses.

Fluxes: Purification of scrap and sweep.

Methods of testing metals and alloys. Essay of gold and silver.

Dental cements and their preparation.

N.B. The lectures will be supplemented by practical work in the laboratory.

MATERIA MEDICA

Professor CAMPBELL

Mr. J. H. GOUGH

Monday and Wednesday, from 2.45 to 3.45 p.m. during the third term.

The course includes the sources, preparation, physical characters, pharmacopœial combinations, tests, doses and general uses of the principal official drugs.

After each lecture a tutorial class is held in which the students are exercised in the actual recognition of the most important drugs.

¹ These lectures will be given at College Road.

EVENING COURSES

I. Courses in Technological Subjects

Advanced Technological Courses are held in the following departments of the University :

- Civil and Mechanical Engineering
- Electrical Engineering
- Coal Mining
- Textile Industries
- Tinctorial Chemistry and Dyeing
- Leather Industries
- Geology.

Students who have reached *21 years of age may be admitted at the discretion of the Head of the Department concerned, without examination.

So far as Leeds students are concerned the instruction given in the Evening Courses in the University is co-ordinated with the City Scheme for evening instruction in Technology, and Leeds students who are under *21 years of age will be required to produce certificates of satisfactory attendance at these preparatory City Evening Classes, or failing that, to pass an Entrance examination, or give other evidence of adequate preparation.

Those intending students who have previously been in attendance at the Central Technical School (or at other Technical Evening Schools of the City) should enrol for the University course by calling at the Central Technical School any evening (except Saturday) in the week preceding the opening of the Evening Class Session. Certificates will be given to such students, if qualified, admitting them to the University without Entrance examination on payment of the prescribed fee.

Students resident in the administrative area of the West Riding County Council, who are under *21 years of age, will be required to produce certificates of satisfactory attendance at

* In 1912 and thereafter, 22 years.

Technical Schools aided by the County Council, or, failing that, to pass an Entrance examination, or give other evidence of adequate preparation.

Students resident in the West Riding must make application, prior to September 1st, to the Education Department, County Hall, Wakefield, for authorisation of enrolment for the University course desired, giving full particulars of the Technical School or Schools at which they have been in attendance, the courses of instruction there followed, and examination successes gained. If qualified as hereinafter shewn, a student making such application will be furnished with a certificate authorising his enrolment for the University course, on payment of the usual fees, without sitting for the Entrance examination.

In the case of students who are under 21 years of age, other than those holding certificates from the City of Leeds and the West Riding, an entrance test will be required unless certificates of satisfactory attendance at preparatory classes are produced, or other satisfactory evidence of sufficient preliminary training is afforded.

The opening date for the Evening Class Session (except in the case of Coal Mining) will be Monday, September 18th, 1911. The first term ends on Wednesday, December 20th, 1911. The second term begins on Thursday, January 4th, 1912, and ends on Friday, March 29th, 1912.

The dates for the Evening Session in Coal Mining will be found on page 510.

The fee for the whole, or any part of a group course, is 10s. 6d., payable to the Registrar in advance.

THE ENGINEERING DEPARTMENTS

For each of the Engineering departments, Evening Class students resident in the City of Leeds who are under *21 years of age must produce certificates of satisfactory attendance at Leeds Municipal Evening Courses in Mathematics,

* In 1912 and thereafter, 22 years.

Mechanics, and Machine Drawing for four sessions, or must be able to furnish evidence that they have taken similar work elsewhere in a Technical Institution of a corresponding standard.

For students who cannot satisfy these tests an Entrance examination will be held in the subject which they propose to take in the University, also in Elementary Mathematics, including Algebra up to quadratic equations, Logarithms, Trigonometry up to the solution of triangles, and Geometry equivalent to Euclid, books I. and II.

West Riding students who are under *21 years of age desiring to enrol for evening group courses in any of the Engineering departments of the University, must produce evidence of satisfactory attendance and work at group courses of at least the 4th year grade in local Technical Schools, embracing at least the subjects of Mathematics, Mechanics, and Machine Drawing; or evidence that they have satisfactorily taken similar work elsewhere of a corresponding standard. Such students will, nevertheless, in accordance with the arrangements entered into between the University and the Education Authorities of the City of Leeds and the West Riding respectively, be required to attend at the Central Technical School, Leeds, for such portions of the further course of instruction desired as are shewn below to be conducted at the Technical School.

West Riding students who are under *21 years of age desiring to enrol for less than the complete evening group course indicated in the University Prospectus may receive authorisation for enrolment at the University on application to the Education Department, County Hall, Wakefield, before September 1st.

Students who have reached *21 years of age may be admitted at the discretion of the Head of the Department, without examination.

Students are strongly recommended to take up one of the group courses authorised by the Leeds City Council or the West Riding County Council before enrolling at the University.

* In 1912 and thereafter, 22 years.

The courses of the Leeds City Council are set out below.

West Riding students will usually commence attendance in connection with the Fifth or Sixth Year of these group courses.

CIVIL AND MECHANICAL ENGINEERING

Professor GOODMAN	Mr. GILCHRIST
Mr. KEAN	Mr. DUNCAN
Mr. THOMSON	

The evening courses are arranged to cover the work required for the examination for Associate membership of the Institution of Civil Engineers.

Enrolment of Students.

Students enrolling at the Central Technical School must attend at the University on Wednesday, September 20th, or Thursday, September 21st, at 7.30 p.m., to bring their exemption certificates.

All others who intend to become evening students must attend on Monday, September 18th, at 7.30 p.m., in order to confer with the Head of the Department as to their training, eligibility and proposed courses of instruction, and to produce any certificates obtained either from the Board of Education or from other educational authorities.

The examinations for those who do not hold exempting certificates will be held as follows, the standard in all cases being that of the second stage of the Board of Education :
Tuesday, September 19th, at 7.30 p.m., Electrical Engineering.

Wednesday, September 20th, at 7.30 p.m., Mathematics.

Thursday, September 21st, at 7.30 p.m., Strength of Materials and Structures.

Friday, September 22nd, at 7.30 p.m., Laboratory Courses.

Monday, September 25th, at 7.30 p.m., Heat Engines.

After these dates students will not be admitted unless in very exceptional circumstances.

Course a. (Mechanics.)

YEAR.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
THIRD ..		Machine Drawing. <i>or on</i> Thursday.		Mechanics, Theoretical and Practical. <i>or on</i> Tuesday.	Practical Mathematics. <i>or on</i> Wednesday.
FOURTH.		Machine Drawing.	Practical Mathematics.		Applied and Practical Mechanics. <i>or on</i> Monday.
FIFTH ..	Applied and Practical Mechanics.			Machine Construction. [<i>or</i> Machine Tuesday, and Mathematics	Machine Design. Drawing on Practical on Wednesday.]
SIXTH	Subject	Testing of Materials <i>or any other</i> as may be	(University) arranged.	Machine Construction. Mechanical Engineering.	Machine Design.

Classes not marked "University" are taken at the Central Technical School (Leeds Institute). For particulars of these classes intending students should see the Handbook of Technical Education, which may be obtained at the City Education Department. Particulars of classes in the Third, Fourth and Fifth Year Courses, which are available in Technical Schools within the West Riding, may be obtained from the Education Department, County Hall, Wakefield.

Course b. (Prime Movers.)

YEAR.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
THIRD ..		Machine Drawing.		Mechanics, Theoretical and Practical.	Practical Mathematics. <i>or on</i> Wednesday.
FOURTH.		Machine Drawing.	Practical Mathematics and Heat for Engineers.	Heat Engines. Stage I.	
FIFTH ..		Heat Engines Laboratory Elementary. (University.)	Practical Mathematics.	Machine Construction. Heat Engines.	
SIXTH ..		Heat Engines Laboratory Advanced. (University.)	Theory of Heat Engines, Steam Turbines. (University.)	Structures or Strength of Materials. (University.)	<i>or</i> Machine Design.

Classes not marked "University" are taken at the Central Technical School (Leeds Institute). For particulars of these classes intending students should see the Handbook of Technical Education, which may be obtained at the City Education Department. Particulars of classes in the Third, Fourth and Fifth Year Courses, which are available in Technical Schools within the West Riding, may be obtained from the Education Department, County Hall, Wakefield.

Course c. (Hydraulics).

YEAR.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
THIRD ..		Machine Drawing. (or on Thursday.)		Mechanics, Theoretical and Practical. (or on Tuesday.)	Practical Mathematics. (or on Wednesday.)
FOURTH ..		Machine Drawing.	Practical Mathematics.		Applied and Practical Mechanics. (or on Monday.)
FIFTH ..	Applied and Practical Mechanics.			Machine Construction. [or Machine Tuesday and Mathematics on Wednesday.]	Machine Design. Drawing on Practical Wednesday.]
SIXTH ..		Engineering Laboratory Hydraulics. (University.)	Hydraulics Lecture. (University.)	Structures or Strength of Materials. (University.)	or Machine Design.

Classes not marked "University" are taken at the Central Technical School (Leeds Institute). For particulars of these classes intending students should see the Handbook of Technical Education, which may be obtained at the City Education Department. Particulars of classes in the Third, Fourth and Fifth Year Courses, which are available in Technical Schools within the West Riding, may be obtained from the Education Department, County Hall, Wakefield.

Engineering Laboratory

Mr. KEAN, Mr. DUNCAN, and Mr. THOMSON

Courses of instruction will be given in the Engineering Laboratory, on Tuesdays, from 7.30 to 9.30 p.m., as follows :

Course A. Testing of Materials

The testing of iron, steel, alloys, &c., in tension, torsion, compression, bending, and punching. This work is done on :

1. A 100-ton Buckton testing machine, fitted with an autographic recorder.
2. An Olsen machine of 50,000 lbs. capacity.
3. A Denison machine of 5,000 lbs. capacity.
4. Special appliances for torsion testing.
5. A Denison machine for testing the hardness of metals.

*Course B. Steam, Gas, and Oil Engines
Elementary Course.*

Indicating.—The high and low pressure cylinders of the 30 h.p. Fowler steam engine, and the 70 h.p. Willan's engine; Green's steam driven boiler pump; air pump of the Fowler engine; Campbell oil engine; petrol engine (by Manograph); air compressor.

The mechanical efficiency of the above-mentioned plant is obtained by dynamometer brakes or other suitable apparatus.

Testing.—Simple steam engine and boiler trials; efficiency test of a Pulsometer steam pump. Trials on the oil engine, petrol engine, and De Laval steam turbine.

Advanced Course.

Complete compound engine trials with saturated and superheated steam; complete boiler trials; measurement of the flow of steam through nozzles; analysis of furnace gases and exhaust gases from the oil engine.

Course C. Hydraulics

Experiments on the flow of water over weirs and through orifices, the friction of water in pipes, the pressure of jets on surfaces, the bursting strength of pipes, &c., by a Berry's high pressure test pump.

Tests of a Pelton wheel; a Gilkes' turbine, fitted with a Kent Venturi water meter; a 6" x 4" Green reciprocating pump; a Hett centrifugal pump.

A student attending laboratory classes will be held responsible for the apparatus with which he is working, and will be required to make good any damage.

The Theory of Heat Engines

MR. KEAN

Wednesdays, from 7.30 to 8.30 p.m.

Properties of steam, work done during isothermal and adiabatic expansion of gases, the ideal steam engine with and without clearance or compression; methods of measuring the dryness of steam before and after entering the cylinder,

initial condensation, leakage past valves and pistons; compound steam engines, combining the diagrams from a compound engine, losses in actual engines; lagging and jacketing of cylinders, super-heating; performance of steam engines; the Rankine cycle, Entropy-temperature diagrams.

A certain number of evenings will be devoted entirely to tutorial work.

No student will be admitted to this course unless he has done one session's work of the standard of the second stage of Heat Engines, Board of Education Syllabus.

Book recommended:

RIPPER'S Steam Engine Theory and Practice (Longmans, 9s.)

Hydraulics

Mr. THOMSON

Wednesdays, 7.30 to 8.30 p.m.

Pressure due to head; total pressure on immersed surfaces; centre of pressure; flow of water through orifices, over notches and weirs; time required to empty tanks through orifices and sluices.

Bernouillis' stream line law; Venturi water meter.

Losses of head due to sudden contractions and enlargements in pipes and channels; friction of water in pipes and channels; pressure of jets on flat and curved surfaces; turbines and water wheels.

Steam Turbines

Mr. KEAN

Wednesdays, 8.30 to 9.30, for students attending or who have attended the above course of lectures. No student will be admitted to this class unless he can prove that he has obtained a first class in the second stage of "Steam" in the Board of Education examinations, or possesses knowledge up to this standard.

The temperature-entropy chart and its application in steam turbine design; the theory of steam flow in orifices and nozzles; experimental work upon the flow of steam in

nozzles ; general principles of turbines ; design of blades for impulse and reaction turbines ; experimental work on the flow of steam in turbine blades ; description of turbines, with notes on construction ; consideration of the friction of steam in turbines, horse power and efficiency ; effects of superheat and vacuum ; questions of cost, weight and dimensions of turbine units ; arrangement of governors ; steam, exhaust and overload valves ; oil cooling devices ; condensers and augmentor condensers ; exhaust steam turbines ; heat accumulators ; mixed pressure turbines ; variable speed turbines ; marine turbines ; turbo-pumps and turbo-blowers ; the torsion meter and its use.

Books recommended :

FOSTER'S "Steam Turbines" (Scientific Publishing Co., Manchester, 10s. 6d. net).
SUTHERAN'S "Marine Steam Turbine" (Whittaker & Co., 6/- net).

Structural Work for Buildings, Bridges and Roofs

Mr. GILCHRIST

Thursdays, from 7.30 to 8.30 p.m.

Girders for Buildings and Bridges : Calculation of maximum bending moments and shearing forces, method of utilizing bending moments and shearing forces in the detailed design of plate girders. General proportioning of girders, shapes and sizes of material, arrangement of riveting. Continuous girders of two and three spans.

Lattice Girders and Roofs : Calculation of maximum stresses, and details of design.

Masonry Structures : Retaining walls for earth, dams for reservoirs. Concrete and reinforced concrete.

An Exercise Class for one hour a week will be held in connection with this course, at a time to be arranged to suit the students.

The Strength and Elasticity of Materials

Mr. THOMSON

Thursdays, from 8.30 to 9.30 p.m.

Tensile compressive and shear stresses, modulus of elasticity, coefficient of rigidity.

Beams: Bending moments, modulus of the section, moment of inertia, shear on beams, deflection of beams, built in beams. Plate springs.

Torsion: Polar modulus of the section, for circular, square, and other sections. Spring of shafts, combined torsion and bending. Helical springs.

Columns: Euler and Gordon theories. Effect of end holding. Columns loaded eccentrically.

Book recommended:

GOODMAN'S "Mechanics Applied to Engineering" (Longmans, 9s. net).

Limes, Cements and Concrete

MR. GILCHRIST

Twelve lectures, commencing on Friday, November 3rd, at 8 p.m.

Limes: Burning and slaking of fat and hydraulic limes; setting and hardening processes; simple methods of testing limestones; mortars; proportions of sand and lime for various purposes; substitutes for sand; mixing of mortars and quantities produced from given quantities of lime and sand; strength of mortars.

Portland and other Cements: Composition and manufacture; properties, physical and chemical; the setting of cements, methods of testing initial and final setting times by various instruments, as Vicat needle, Goodman's cement tester, &c.; hardening of cements, use of drill in testing rate of hardening; soundness of cement and methods of testing; expansion and contraction of cements. The tests of the British standard specification will be discussed and the reasons for and the relation of the tests one to another will be explained.

Concrete and Reinforced Concrete: Strength of lime and cement concretes; proportions and methods of mixing; design of reinforced concrete, and descriptions of the different systems.

Application of concrete and reinforced concrete in foundations, piers, walls, bridges, warehouses, &c.

ELECTRICAL ENGINEERING

Mr. PARR Mr. FRENCH

To meet the requirements of those who are engaged during the day, but have spare time at their disposal in the evening, there is an advanced evening course of instruction in electrical engineering. This consists of two advanced lectures (experimentally illustrated when possible) on Thursdays, beginning September 21st, from 7.15 to 8.15 p.m., and from 8.30 to 9.30 p.m., on Alternating (single- and polyphase) Current Practice. The advanced laboratory course of practical work is specially arranged with the view of assisting students in understanding the lecture work. All the work will have special reference to the electro-technological examinations of the City and Guilds of London Institute, and will practically cover the ground for the Ordinary Grade Alternating Currents and one of the three subjects annually of the Honours Grade of those examinations, and meet the requirements of those desirous of taking a certificate in either the Ordinary or in one of the three subjects of the Honours' Grades (see the City and Guilds programme).

All who intend to become evening students must attend at the University on Monday, September 18th, between 7 and 9 p.m., in order to confer with the Head of the Department as to their training, eligibility and proposed courses of instruction, and to produce any certificates obtained either from the Board of Education or from the educational authorities.

Dates of Entrance Examination

The Entrance Examination for those who do not hold exempting certificates will be as follows, the standard in all cases being that of the second stage of the Board of Education :

Tuesday, September 19th, at 7.30 p.m., Electrical Engineering.

Wednesday, September 20th, at 7.30 p.m., Mathematics.

After these dates students will not be admitted unless in very exceptional circumstances.

Course d.**(For Electrical Engineers).**

YEAR.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
THIRD .	Mechanics, Practical and Theoretical.		Practical Mathematics, I.	Electricity and Magnetism (Practical and Theoretical) I.	
FOURTH.	Electricity and Magnetism (Practical and Theoretical) II.	Practical Mathematics. II. Mechanical Drawing.		Electrical Engineering, I. (Practical and Theoretical)	
FIFTH ..		Electricity and Magnetism, Advanced III. Practical Mathematics, III.	Electrical Engineering Testing, II.	Electrical Engineering, II. O.G. (Lecture and Drawing). Direct Current Work.	
SIXTH ..	Electrical Engineering Testing, III. Alternating Current Work (University).	Electricity and Magnetism, III. (Optional). Practical Mathematics, III. (Optional).		Electrical Engineering, III. O.G. Alternating Current Work (University).	

Classes not marked "University" are taken at the Central Technical School (Leeds Institute). For particulars of these classes intending students should see the Handbook of Technical Education, which may be obtained at the City Education Department. Particulars of classes in the Third, Fourth, and Fifth Year Courses which are available in Technical Schools within the West Riding may be obtained from the Education Department, County Hall, Wakefield.

Syllabus of Lecture Courses

The work will embrace selections from the following subjects:

Magnetic properties of materials, and methods of determining magnetising force, induction, permeability and

hysteresis. The solenoid and its properties. The electro-magnet and its adaptations to electro-mechanical devices. Mechanical strength, qualities, and resistance of insulating and other materials, and the electrical properties of such. Influence of temperature. Testing of insulation resistances. Ohmmeters. Magneto-electric induction. Self and mutual induction. Induction balances and standards of induction. Outline of theory of direct-current dynamos and motors. Characteristic curves. Types of field magnets and armatures considered magnetically. Winding of such. Mechanical features of dynamos and motors as regards strength of parts, heating, durability, ease of repairs, construction of brushes, commutators, &c. Motor generators, rules for winding speed and output. Methods of obtaining the electrical and mechanical efficiency of dynamos and motors. Construction and theory of alternators, transformers and alternating current motors. Theory and construction of storage cells. Armature reaction; heating and sparking of machines. Parallel working of alternators. Polyphase machines. Construction and gearing of motors for traction work. Transmission and distribution of power by direct and alternate currents. Electric tramways and railways. Size of feeders and overhead and underground mains.

The following may be consulted with advantage.—

Parr's Electrical Engineering in Theory and Practice (Macmillan & Co., 12s. net); Maycock's Electric Lighting and Power Distribution (Whittaker & Co., Vol. II., 6s.); Dynamo-Electric Machinery: S. P. Thomson, (Spon, Vols. I. and II., 30s. each); Alternate Current Transformers, Vols. I. and II.; J. A. Fleming (*Electrician* Office, 18s.); Munro and Jamieson's Pocket Book of Electrical Rules and Tables (Griffin & Co.,) about 10s. 6d.; Rhodes's Alternating Currents (Longmans, Green & Co.); Electricity as applied to Mining, by Lupton, Parr, and Perkin (Crosby Lockwood, 12s. net.); Standard Polyphase Apparatus by Oudin, 12s.; Parr's Electrical Engineering Measuring Instruments (Blackie & Son, 9s. net); Hay's Direct Currents (Bottone, 6s. net); Hay's Alternating Currents (Harper, 6s. net).

Laboratory Course

The course of advanced practical work in the electrical engineering laboratories in connection with lecture courses consists of about 26 attendances on Mondays, from 7 to 9-30 p.m., commencing September 25th, at 7 p.m. The course will embrace the following advanced practical work :—

Calibration of commercial ammeters, voltmeters, wattmeters and electricity supply meters, measurement of magnetic leakage in dynamos ; of self-induction ; of C.P. and efficiency of glow and arc lamps ; efficiency of secondary cells, dynamos, and motors by well known commercial methods, and also of motor generator sets, rectifiers, and alternators ; efficiency of high and low tension transformers ; output and efficiency of mono-, two- and three-phase rotatory converters ; insulation resistance of electric light mains and cables by works method and a Silvertown portable testing set ; testing of continuous and alternating current (single-phase and polyphase) electro-motors ; permeability and hysteresis of iron used in dynamos and transformers ; calibration of high tension instruments ; standardising ammeters by copper and silver voltameters ; characteristic curves of series, shunt, and compound wound dynamos and alternators ; measurement of the "true power" in single-two- and three-phase alternating current circuits. B.H.P. and efficiency of a General Electric Co.'s 500 volt 25 H.P. tramway motor, &c.

For the laboratory course, students must get Parr's Advanced Electrical Engineering Testing (Chapman & Hall, 9s. net).

Practical Work

The importance of carefully entering up the results of tests as soon after performing them as possible, cannot be too strongly urged. For this purpose, evening students who take Laboratory work must provide themselves with a good and suitable note book, preferably the one which the University supplies, and leave it, with all their experimental work fully written in up to date, for perusal and correction at definite and stated times, which will be arranged at the commencement of the course.

MINING

Professor

Mr. BOWEN

Students who have reached *21 years of age may be admitted at the discretion of the Head of the Department without examination.

Evening students resident in the City of Leeds, who are under 21 years of age, will be required to produce certificates of satisfactory attendance at the preparatory evening courses of the Leeds City Council for at least two sessions, or to have given satisfactory attendance at the West Riding Mining Course for at least two years, or to give evidence of possessing equivalent knowledge in the subjects of Mathematics, Mechanics and English.

Students resident in the West Riding Administrative Area, who are under *21 years of age, desiring to enrol for Evening Classes in the Mining department, will be required to produce evidence of satisfactory attendance at courses of at least the 4th year grade in a Technical School or Class within the Riding, if available ; or evidence that they have taken a similar course in a Technical School elsewhere of a standard equivalent to the second stage of the Board of Education's Examination, or, if no such course is available, evidence of attendance for at least two sessions at an Evening School for a course equivalent to the preliminary Technical (Industrial) course as set forth in the Handbook of the West Riding Education Committee.

Date of Entrance Examination

For students who cannot satisfy these tests an Entrance examination will be held on Monday, October 2nd, 1911, at 3 p.m.

Three Years' Coal Mining Course

This course is intended for miners and sub-officials who are occupied in or about collieries, and can only attend for one afternoon per week, but desire to qualify themselves for Managers' Certificates under the C.M.R. Act, and particularly for those who have attended complete courses of instruction

* In 1912 and thereafter, 22 years,

in Mining at one of the local centres appointed by the West Riding County Council, or have attended the preparatory evening courses of the Leeds City Council.

The course extends over three years. The first and third year students attend on Mondays, beginning on October 9th, from 3 to 7 p.m.; the second year students on Tuesdays during the same hours, beginning on October 10th. Students must call at the Registrar's office on either October 9th or 10th, between 2 and 3 p.m. to register their names and take out their class tickets. The instruction in Engineering, Electrical Engineering, and Geology will be given in the respective departments, the remaining subjects in the Mining department. In the class on Mathematics the subject will be dealt with entirely from the mining point of view, the examples being taken from mining practice. Students will be given mining data in the examples set, and will be required to copy these out into an indexed pocket-book to form a nucleus for the observations which they subsequently make as a result of their own experience. A similar mode of treatment will be adopted for the Chemistry course, the properties of matter and chemical change being illustrated as far as possible from ordinary examples to be met with at a coal mine. In addition to the course of Surveying drawing, a course of practical work in the use of surveying instruments is given during the third term. Lectures will be given in connection with the two Surveying courses as they become necessary to explain the work in hand.

The session in the Mining Department will be as follows:
 Monday, October 9th to Tuesday, December 19th, 1911.
 Monday, January 15th to Tuesday, March 26th, 1912.
 Monday, April 29th to Tuesday, June 25th, 1912.

Syllabus

<i>First Year</i>	<i>Second Year</i>	<i>Third Year</i>
Mathematics	Mining	Mining
Engineering	Chemistry of Coal	Electricity
Engineering Laboratory	Mining	Electrical Engineering Laboratory
Mining	Surveying	
	Geology	

First Year Time Table

		3 to 4.	4 to 5.	5.30 to 7.
1st TERM.	MON.	Mathematics.	Engineering.	Engineering Laboratory.
2nd TERM.	MON.	Mining.	Mathematics.	Engineering Laboratory.
3rd TERM.	MON.	Mining.	Engineering.	Engineering Laboratory.

Second Year Time Table

		3 to 4.	4 to 5.	5.30 to 7.
1st TERM.	TUE.	Mining.	Chemistry of Coal Mining.	Surveying, Drawing, and Calculations.
2nd TERM.	TUE.	Mining.	Geology.	Geological Lab.
3rd TERM.	TUE.	Mining	Geology.	Practical Surveying.

Third Year Time Table

		3 to 4.	4 to 5.	5.30 to 7.
MONDAY		Electricity.	Mining	Electrical Engineering Laboratory.

TEXTILE INDUSTRIES

Professor BEAUMONT Mr. HOLLIS
 Mr. YEWDALE Mr. LAW Mr. FARLEY
 Mr. HOLLOWAY

For entrance into the Textile Evening Classes candidates under *21 years of age must show adequate knowledge in the following subjects: English, Mathematics of the standard of the first Stage of the Board of Education examinations, Freehand or Machine Drawing of the standard of the first Stage of the Board of Education examinations.

* In 1912 and thereafter, 22 years.

They may, at the discretion of the Head of the department, be required to take an Entrance examination, which will be held on Monday, September 18th, at 7.30 p.m.

Students who have reached *21 years of age may be admitted at the discretion of the Head of the Department without examination.

Students resident in the administrative area of the West Riding, and under *21 years of age, desiring to enrol for evening classes in the Textile Department must give evidence of satisfactory attendance and work at group courses of at least the 4th year grade in a Technical School in the West Riding, if available, or evidence of having taken similar work in a Technical Institution elsewhere; if such courses are not available, evidence should be given of attendance for at least two sessions at an evening school for a course equivalent to the Preliminary Technical (Industrial) course as set forth in the Handbook of the West Riding Education Committee, or evidence of adequate knowledge in the following subjects: English, Mathematics of the standard of the first Stage of the Board of Education's examinations, and Freehand Drawing or Machine Drawing of the standard of the first Stage of the Board of Education's examination.

Woollen Yarn Manufacture

First Year:

Lectures, Thursdays, from 7 to 8 p.m.

Recording Experiments and Testing, Thursdays, 8 to 9 p.m.

Sketching Machine Details, alternate Wednesdays, 7 to 9 p.m.

SUBJECTS.—*Materials:* Their character, qualities, uses and relative values. Processes through which the materials are passed until ready for the cards.

Machinery: Particulars of machines for dusting, steeping, scouring, drying, carbonising and burring wool; also for the manufacture of mungo and shoddy: garnetting hard waste, and for teasing, blending, and oiling fibrous materials.

* In 1912 and thereafter, 22 years.

Calculations : Relating to materials and machinery.

NOTE.—Students pursuing this course may take also a class in Mechanics, theoretical and practical, on Monday evenings, at the Central Technical School (Leeds Institute).

Second Year :

Lectures, Thursdays, from 8 to 9 p.m.

Sketching Machine Details, Tuesdays, 7 to 9 p.m.

Recording Experiments and Testing, Thursdays, 7 to 8 p.m.

Experimental Spinning, Fridays, 7 to 9.30 p.m.

SUBJECTS.—*Processes* : For converting the blended materials in yarn.

Machinery : The different types of feeding mechanism, of scribbling and carding engines, condensers, of card clothing for various parts of the machines, and the variation for treating different materials, of spinning machines on the intermittent (self-actor mule), or continuous systems.

Calculations : On speeds and output, and also on results.

Worsted Yarn Manufacture

First Year :

Lectures, Fridays, from 7 to 8 p.m.

Recording Experiments and Testing, Fridays, from 8 to 9 p.m.

Sketching Machine Details, alternate Wednesdays, from 7 to 9 p.m.

SUBJECTS.—Principles underlying the construction of a typical worsted thread ; the influence of materials on the character of a thread.

Processes : Preparing long and medium wools by gilling ; preparing medium and short wools by carding, backwashing, combing, and finishing.

Machinery : Gill boxes ; carding engines ; backwashers ; combing machines on various principles, &c.

Calculations : Relating to speeds, drafts, weights, &c.

For particulars of raw materials and the preliminary processes up to and including drying, students are advised to take the First Year Course in Woollen Yarn Manufacture.

NOTE.—Students pursuing this course may take also a class in Mechanics, theoretical and practical, on Monday evenings, at the Central Technical School (Leeds Institute).

Second Year :

Lectures, Fridays, from 8 to 9 p.m.

Recording Experiments and Testing, Fridays, from 7 to 8 p.m.

Sketching Machine Details, Tuesdays, from 7 to 9 p.m.

Experimental Spinning, Mondays, from 7 to 9.30 p.m.

SUBJECTS.—*Materials* : Tops, their qualities, defects, and values.

Processes : Re-combing ; mixing ; drawing ; spinning ; doubling ; twisting and yarn finishing.

Machinery : The different types of drawing, spinning, doubling, and twisting frames, with particulars of setting and manipulation.

Calculations : On speeds, drafts, doublings, twists, weights and production.

Designing and Weaving

First Year :

Lectures, alternate Tuesdays, from 7.15 to 9.15 p.m.

Pattern Analysis, alternate Fridays, 7.15 to 9.15 p.m.

Design Practice and Calculations, alternate Fridays, 7.15 to 9.15 p.m.

Sketching Machine Details, alternate Tuesdays, 7.15 to 9.15 p.m.

SUBJECTS.—Designing : Principles of cloth construction, plan making, drafting, materials, yarns and settings, simple patterns due to arrangement of coloured threads.

Calculations : For woollen, worsted, cotton and union yarn, and fabrics.

Machinery: Hand looms:—treadle loom, single and double action witch machines; Power looms: the tappet loom; shedding, picking, beating-up, letting-off the warp and setting-up the cloth.

NOTE.—Students taking this course may take also a class in Mechanics, theoretical and practical, on Thursday evenings, at the Central Technical School (Leeds Institute).

Second Year:

Lectures on Designing and Weaving, Wednesdays, from 7.15 to 8.15 p.m.

Lectures on Colouring, Wednesdays, 8.15 to 9.15 p.m.

Pattern Analysis, alternate Mondays, 7.15 to 9.15 p.m.

Design Practice and Calculations, alternate Mondays, 7.15 to 9.15 p.m.

Sketching Machine Details, alternate Tuesdays, 7.15 to 9.15 p.m.

Experimental Weaving, alternate Tuesdays, 7 to 9.30 p.m.

SUBJECTS.—*Designing*: Combinations of weaves to form stripe, check, diagonal, and other patterns; also backed, imitation backed, and simple compound fabrics.

Machinery: The principal makes of power looms for woollen and worsted fabrics.

Calculations: On setting and costing fabrics, speeds of looms.

Colouring: Theories of colouring, qualities of colours, harmony and contrast, various styles of patterns produced by colours in solid colour threads, twists, marls and mixtures.

Third Year:

Lectures on Designing, Mondays, from 7.15 to 8.15 p.m.

Lectures on Colouring, Mondays, 8.15 to 9.15 p.m.

Pattern Analysis and Calculations, alternate Wednesdays, from 7.15 to 9.15 p.m.

Experimental Weaving, alternate Wednesdays, 7 to 9.30 p.m.

Experimental Weaving, Thursdays, 7 to 9.30 p.m.

SUBJECTS.—*Designing*: The principles of designing compound fabrics, including double and treble-make cloths, vestings, matelasses, rugs, shawls, velvets, gauzes, and plushes.

Colouring: Application of colour to compound cloths.

Machinery: Shuttle box motions and pattern chain making, the Jacquard or harness loom.

The looms for the use of Third Year students are mounted to weave backed and double make textures for trouserings, suitings and mantlings, also for Jacquard patterns in dress fabrics, vestings, rugs and shawls.

Students may devote themselves to any special branch of manufacture in which they are principally interested, and every facility is afforded them in original work.

DYEING

Professor GREEN

Mr. FRANK

Mr. WOODHEAD

Evening Class Students resident in the City of Leeds who are under *21 years of age, must produce certificates of satisfactory attendance at the Central Technical School upon the third year's work of the group course arranged for students of Dyeing.

Students resident in the Administrative Area of the West Riding, who are under *21 years of age, are required to furnish evidence of satisfactory attendance at courses of at least the 4th year's grade (including Organic Chemistry) in a Technical School aided by the County Council, or evidence that they have taken similar work elsewhere of a corresponding standard.

Other students under *21 years of age must give evidence of possessing equivalent knowledge in the subject of Chemistry, or may be required to pass an entrance examination which will be held at a date to be fixed by the Head of the Department.

* In 1912 and thereafter, 22 years.

Students who have reached *21 years of age may be admitted at the discretion of the Head of the Department without examination.

The courses of instruction will consist of Lectures and Experimental Dyeing, either of which can be attended separately.

Lecture Course

A course of twenty-six lectures on the Technology of the Textile Fibres. Dyeing and Dyeing Materials will be given on Mondays from 7 to 8 p.m., beginning September 25th, 1911.

The course is intended to meet the requirements of practical men and foremen dyers.

Experimental Dyeing Course

This class is held on Mondays, between 8 and 10 p.m. beginning on September 25th, 1911. It is intended for apprentice and foremen dyers, or others engaged in practical work during the day, and will also be found useful for all those who in their daily business handle dyed materials. No previous knowledge of dyeing is required from those attending.

Students in this class will make systematic dyeing trials with the different groups of natural and artificial dyestuffs.

NOTE.—Leeds Students taking this course are recommended to take a class in Organic Chemistry or Technical Analysis, on Wednesday evenings, at the Central Technical School (Leeds Institute). West Riding students taking this course are recommended to take also a class in Organic Chemistry or Technical Analysis at a Technical School aided by the County Council.

LEATHER INDUSTRIES

Professor PROCTER

Dr. STIASNY

Mr. BRUMWELL

Evening Class students resident in the City of Leeds, who are under *21 years of age, must produce certificates of satisfactory attendance at the third year's work of the group course arranged for students of Leather Industries.

* In 1912 and thereafter, 22 years.

Students resident in the Administrative Area of the West Riding, who are under *21 years of age, desiring to enrol at the University for evening courses in Leather Industries, are required to furnish evidence of satisfactory attendance at courses of at least the 4th year's grade (including Organic Chemistry) in a Technical School aided by the County Council, or evidence that they have taken similar work elsewhere of a corresponding standard.

Other students must give evidence of possessing equivalent knowledge in the subject of Chemistry, or may be required to pass an Entrance examination which will be held at a date to be fixed by the Head of the Department.

Students desiring to take Analytical lectures and laboratory work must have passed through Chemistry of the Fourth year course at the Central Technical School, or must have otherwise attained the necessary practical knowledge of Chemical Analysis.

† A practical class will be held from 6.45 to 9.45 p.m. in the laboratories of the Leather Department, on Tuesdays, for the analytical investigation of the various materials employed in leather manufacture.

Courses of lectures will be given on Wednesdays, from 7 to 8 p.m., by Mr. Brumwell, on † "Analytical Chemistry of Leather Manufacture," in conjunction with the Tuesday class, and by Dr. Stiasny from 8 to 9.30 p.m., on "Practical Leather Manufacture" including practical demonstrations. The lectures on Leather Manufacture will include the following subjects:

The tanning and currying of heavy leathers, especially sole, harness and belting leathers; comparison of English and Continental methods; sulphur tannage; chrome and combination tannage of heavy leathers.

The opening lecture will be on Wednesday, September 27, 1911, and the practical class will begin on Tuesday, September 26, 1911.

* In 1912 and thereafter, 22 years.

† These classes, which are arranged by the Municipal Education Authorities, were given at the Central Technical School, but are now, for greater convenience, given at the University.

For further information on these courses application should be made to the Central Technical School for special pamphlets.

GEOLOGY

Professor KENDALL

Geology applied to Sanitary and Civil Engineering

About fifteen lectures on Mondays, at 5 p.m., beginning January 15, 1912.

SYLLABUS. Stratified rocks, their mode of origin and physical peculiarities. Forms of stratification, folds, joints, and faults.

General succession and lithological characters of the stratified rocks.

The origin and distribution of the drift deposits.

British rainfall, its measurement and variations. The destination of this water. Evaporation, discharge by rivers and percolation, how they are proportioned and upon what conditions they depend. The mode and rate of percolation of underground water. The water-bearing capacity of sandstones and limestones. How water is stored in these rocks.

The principal water-bearing strata of Britain, and the character of the supplies which they yield. Some detailed examples of the supply of water from deep wells.

The application of geological knowledge to selection of sites for bridges, roads, tunnels, puddle-trenches, sewage-farms, &c.

Fee, 10s. 6d.

II. Courses in Non-Technological Subjects

To be held in the rooms of the Leeds Philosophical and Literary Society, Park Row.

The Heavenly Bodies.

MR. GILLIGAN.

A course of three evening class lectures on The Heavenly Bodies will be given in the first term, on alternate Tuesdays, at 8 p.m. The first lecture on Astronomy, Old and New, will take place on November 14, 1911; the second lecture on Fathoming the Depths of Space, on November 28; and the third lecture on the Sun, its Family and Visitors, on December 12.

The Beginning and Growth of the English Law

DR. CHAPMAN

A course of three evening class lectures on the Beginning and Growth of the English Law will be given in the first term, on alternate Fridays, at 8 p.m., beginning October 27, 1911.

Fees

The fee for the courses is 2s. 6d. Members of the Workers' Educational Association are admitted for a fee of 1s., provided ten members join a class. Members of the Philosophical Society are admitted free to the courses.

EXTENSION LECTURES

I. INTRODUCTION

The University of Leeds is prepared to supplement the academic work carried on within its walls by instituting courses of Extension Lectures for those who are unable to attend the classes held in the University itself. With this end in view, it has secured the services of members of its staff who have had experience as teachers, and whose subjects are most likely to prove of interest to University Extension audiences. It has also added to its list of Extension Lecturers the names of scholars who are not members of the University staff, but who have made a special study of subjects of higher education suitable for Extension courses. The aim which the University sets before itself in providing such courses is to arouse and stimulate the interest of its audiences in what is best in art and thought and life, and to bring them into touch with the advance of science, and with some of the practical issues of modern life.

The University has placed the general control of the arrangements for Extension Lectures in the hands of a Committee, the University Extension and Tutorial Classes Committee, to the Secretary of which all letters should be addressed.

II. GENERAL ARRANGEMENTS

Before the University can undertake to provide for the delivery of a course of Lectures in any particular locality, the following steps must be taken:—

1. A Local Committee must be appointed. Such Committee may be—
 - (a) A Committee specially appointed for this purpose;
 - (b) A public body, such as the Education Committee of a County or County Borough, the Education Committee of a Co-operative Society or Trades Union Council, the Committee of a Public Library or of some other organised institution.

2. A fund sufficient to cover the University charges must be guaranteed by the Local Committee.

The Honorary Secretary of the University Committee will be glad to furnish assistance in the organisation of a course in any locality, and when the above steps have been taken, he will place the Local Committee in direct communication with the Lecturer of any of the courses given below.

Arrangements can then be made with the Lecturer as to the dates and hours at which the lectures shall be delivered.

III. LECTURE COURSES

The following courses of University Extension Lectures can be provided :—

<i>Sessional Courses</i> ...	Twenty to twenty-four lectures.
<i>Terminal Courses</i> ...	Ten to twelve lectures.
<i>Semi-terminal Courses</i>	Not less than five lectures.
<i>Pioneer Courses</i> ...	Not more than four lectures.

Lectures are given either in successive or alternate weeks, usually in the first and second terms (October—March). Each lecture lasts, as a rule, about an hour, and is followed, or preceded, by a class. The holding of the class is a matter of great importance, the object being to give opportunity for a fuller discussion of the matter contained in the lectures, and to bring the lecturer into closer touch with his audience. Questions bearing on the lectures are also set by the lecturer; the written answers to such questions must be sent to the lecturer by post, and will then be corrected by him and returned at the following class. In connection with some of the lecture courses, arrangements will be made to supplement the lecture and class by excursions of an educational character.

Students will not be admitted to the certificate examinations held at the end of the course, unless they have attended at least three-fourths of the lectures and classes, and have satisfied the lecturer with their written work. (Attendance sheets are furnished to Local Secretaries by the University.) All candidates for certificate examinations must have reached the age of fifteen years.

IV. EXAMINATIONS AND CERTIFICATES

At the conclusion of a sessional or terminal course of lectures the University of Leeds shall appoint an Examiner, who shall not be the Lecturer, to examine those students who, having fulfilled the above-mentioned requirements for entrance to the examination, desire to compete for a certificate. The Secretary of the University Committee, on receiving information from the Local Committee that an examination is required, will forward to the Local Secretary full instructions for the conduct of such examination.

Students who pass the examination held on the conclusion of a sessional course shall be awarded a sessional certificate, those who pass the examination held on the conclusion of a terminal course shall be awarded a terminal certificate.

No certificate shall be awarded on a course of less than ten lectures; but, if desired, an examination may be held at the conclusion of a semi-terminal course; the examiner's report on such an examination would in all cases be submitted to the Local Committee.

Candidates may be awarded, after examination, the terminal certificate on the work of two semi-terminal courses, provided that

- (i.) The courses shall have been given in educational sequence, and in successive terms of the same session;
- (ii.) The candidate shall, in the intervening period, have undertaken a course of connecting study approved by the lecturer.

In all awards of certificates, weight will be given to the weekly papers as well as to the final examination.

V. MANAGEMENT OF EXAMINATIONS

1. The examination shall be held as soon as convenient after the close of the course of lectures.

2. When an examination is desired, the Local Committee shall communicate with the Secretary of the University Committee at least twenty-one days before the date proposed for the examination, and shall state (approximately) the number of candidates. A special form is issued on

which the details of the examination are to be entered. After the hour or date of the examination has been confirmed by the University Secretary, no change can be permitted without his further sanction.

3. The examination shall be conducted by means of printed papers, and shall be of three hours' duration.

4. The Local Committee are required to make arrangements for a suitable room for the examination, to appoint a qualified Supervisor or Supervisors, and to provide the necessary materials.

5. The Secretary of the Local Committee will receive from the University Secretary the examination-papers, and will be responsible for their safe custody.

The packets of papers must not be opened until the commencement of the examination, or in any other place than the examination-room.

A form (Form A) on which the names of the candidates are to be entered, and a copy of Regulations for the Conduct of Examinations, will be forwarded with the examination-papers.

6. The Supervisor (or one of the Supervisors) must be present during the whole time of examination, and will be responsible for giving out the examination-papers, for preserving silence, for securing that there shall be no copying, from books or otherwise, on the part of any of the students, for collecting the papers when the allowed time has expired, and generally for the examination being conducted in an orderly manner.

7. At the completion of the examination, the Supervisor or Local Secretary shall, without delay, send

(i.) The candidates' answers,

(ii.) Copies of the examination-paper, and

(iii.) Form A properly filled up,

by registered post, to the Honorary Secretary of the University Extension and Tutorial Classes Committee, The University, Leeds, or to some other person named by the Secretary.

8. The Examiner shall send to the University Secretary a copy of the examination list, signed by himself, together with a report on the results of the examination. The list shall include the names of all candidates who entered for the examination, whether successful or not.

9. The University Secretary will send a list of the names of successful candidates, arranged in alphabetical order, to the Secretary of the Local Committee. An asterisk will be placed opposite the names of any candidates who pass the examination with distinction.

VI. FEES

1. University Fees for Lecture Courses

The scale of charges is as follows:—

(a) For each pioneer lecture, or lecture in a pioneer course	3 guineas.
(b) For a course of 5 lectures, with class and paper work	18 "
For a course of 6 lectures, with class and paper work	21 "
For a course of 8 lectures, with class and paper work	26 "
For a course of 10 lectures, with class and paper work	31 "
For a course of 12 lectures, with class and paper work	36 "
For a course of 24 lectures, with class and paper work	71 "

Certain courses illustrated by experiments, and marked with an asterisk in the list of courses given on pp. 9-17 of this prospectus, will be charged on a higher scale.

2. Examination Fees

The fees for examination (including the cost of certificates or printed lists) are as follows:—

For the examination of 21 candidates or any lesser number	Two guineas.
For each additional candidate up to 40	Two shillings.
" " " beyond 40	One shilling.

VII. OTHER EXPENSES

The Local Committee defrays the travelling expenses of the lecturer, together with all expenses incurred in the illustration of the lectures by means of experiments, lantern slides, etc. The Local Committee also defrays all incidental expenses, such as hire of hall, lighting, attendance, and advertising.

VIII. SYLLABUSES

The ground to be covered by the lectures, and the mode of treatment adopted, will be indicated by a Syllabus, published at the commencement of the course. The Syllabus will contain lists of books recommended, and the lecturer will give advice as to the choice of books and method of study. (See also the section on Travelling Libraries below.) Notice of the number of Syllabuses required must be sent to the Honorary Secretary as early as possible.

IX. TRAVELLING LIBRARIES

Travelling Libraries are issued by the University, in connection with courses of University Extension Lectures, under the following regulations:—

1. Each Library contains a selection of books, chosen by the lecturer as the most suitable to be studied for the course concerned.

2. Any Committee desiring the use of a Library for a course of University Extension Lectures must make application to the Honorary Secretary of the University Extension and Tutorial Classes Committee, The University, Leeds, *as early as possible before the commencement of the course.*

3. The Libraries are the property of the University, and are placed by them in the hands of the Local Committees, who are held responsible for their care, and are required to replace any volume or volumes that may be damaged or lost whilst the books are in their charge.

4. The fee for the loan of each Ordinary Library is half-a-guinea.

FELLOWSHIPS, SCHOLARSHIPS,
EXHIBITIONS, BURSARIES,
FREE STUDENTSHIPS, AND PRIZES

GENERAL REGULATIONS

Applicable to all Scholarships

1. No election to a Scholarship will take place unless the candidate has attained a sufficient standard of merit.

2. All Scholarships are held subject to the good behaviour of the Scholar. The Council reserves the power to determine the tenure of a Scholarship for the Scholar's irregularity in attendance at lectures, or for any other sufficient cause. A Scholar who fails in any University examination for which he prepares in the University, or who is reported unsatisfactory in the aggregate of his terminal examinations during the session, will forfeit his Scholarship, unless his retention of it be specially recommended by the Senate.

3. Scholars are required to devote the whole of their time to their studies. Except in special cases, the undertaking by a Scholar of outside work, such as teaching, or the acceptance of any post of profit outside the University will involve surrender of the Scholarship, unless such work be undertaken with the sanction of the Vice-Chancellor. The Clothworkers' Scholars and others preparing for any profession or trade, the principles of which are taught in the University, will be granted special exemption from this rule if the Senate is satisfied that an adequate cause has been shown for such exemption, and approves the arrangement proposed in each particular case.

4. The Senate reserves power to declare any Scholarship or Exhibition vacant or to reduce its value on the ground that the Scholar has previously or subsequent to his election

acquired another Scholarship. In cases where students hold Scholarships the aggregate value of which amounts to more than £75, the Senate reserves power to reduce them to this sum.

5. Scholars who are preparing for University degrees are required to present themselves for the degree examinations of the University of Leeds, and are not allowed (except by the special permission of the Senate) to present themselves for the examinations of any other University.

Applicable to Entrance Scholarships

6. Candidates for an Entrance Scholarship may be required to undergo a *viva voce* examination, in addition to the examination by written papers.

Applicable to Scholarships awarded at Matriculation

7. The University does not charge any fee to candidates who present themselves at the Matriculation examination *as Scholarship candidates only* and who do not require any certificate of having passed the examination for Matriculation purposes.

8. Those who are candidates for Matriculation as well as for Scholarships must conform to the Regulations of the Joint Matriculation Board as to filling up the prescribed entrance form and paying the Matriculation fee of £2.

9. In certain cases (see Regulations for the separate Scholarships), successful candidates are required to pursue degree courses in the University as a condition of the tenure of their Scholarships. Should such candidates not have paid the Matriculation fee of £2 prior to the examination they will be required to pay it before entrance at the University. On payment of it they will be entitled to Matriculation certificates.

10. Candidates who have passed, or obtained exemption from, the Matriculation examination in one year, and who are prepared to present themselves in the following year for only such Higher Papers as qualify for Scholarships, have permission to so present themselves, and are deemed eligible for such Scholarships.

ENTRANCE SCHOLARSHIPS

Tenable at Day Classes.

The latest date of Entry for Entrance Scholarships is May 1st, after which no application will be received.

The following Entrance Scholarships, tenable from October, 1912, at day classes in the University of Leeds, will be offered for competition to candidates who have not been registered students of the University, and who will be not less than 16 years of age on October 1st, 1912. Attendances on University classes or laboratories not exceeding three hours a week in any session will not be held to preclude a student from becoming a candidate for an Entrance Scholarship under this regulation.

(a) Awarded on Results of Matriculation Examination.

Name of Scholarship.	Number Offered.	Annual value of each.	Periods for which tenable.	Departments in which tenable.
Leeds City Council	One ..	£50	3 years	Arts, Sci., Tech.
Emsley	Two ..	£20	2 years	Arts, Sci., Tech, exc. Text.
Edward Baines ..	One ..	£20	2 years	Arts, Sci., Tech, exc. Text.
William Summers ..	One ..	£35	3 years	Arts.
Brown	One ..	£40	2 years	Science, Tech,
Akroyd	Two ..	£40	and renewable 2 years	Science, Tech,
Medical	One ..	Fees for co	and renewable complete course.	Medicine.
Craven	One ..	£25	3 years	Tech. (Engineering.)

(b) Awarded by Special Examination.

William Cooke & Co,	One ..	£21	2 years	Tech. (Mining)
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The Matriculation Examination.

The Matriculation Examination to which reference is made in the following Regulations is that conducted by the

Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds and Sheffield. The next Examination will be held in July, 1912.

A Syllabus of the Examination may be obtained on application to the Secretary, Joint Matriculation Board, 24, Dover Street, Oxford Road, Manchester, to whom the fee, and the entry form for the Examination duly filled up, must be sent direct before May 26th.

Candidates for entrance to the Faculties *other than the Faculty of Medicine* presenting themselves for the Matriculation examination are required to enter for and satisfy the Examiners in six subjects:—

- (1) English Language and Literature
- (2) English History
- (3) Mathematics
- (4) *Three of the following, one of which must be a language:—*
 - (i.) Greek
 - (ii.) Latin
 - (iii.) French
 - (iv.) German
 - (v.) Some other Language approved by the Board
 - (vi.) *Either* Mechanics *or* Physics
 - (vii.) Chemistry
 - (viii.) Geography (Physical, Political, and Commercial)
 - (ix.) Natural History (Plants and Animals)

Alternative papers of a higher standard are set at the July examination in English Literature, English History, Mathematics, Greek, Latin, French, German, Mechanics and Physics, Chemistry, and *either* Botany *or* Zoology.

For students entering the Faculty of Medicine, Latin and one other language must be taken.

(a) Awarded on Results of Matriculation
Examination

1. Tenable in the Faculties of Arts, Science,
and Technology

Leeds City Council Scholarship

This Scholarship was founded by the Council of the Yorkshire College, in 1892, out of the sum voted by the Leeds City Council.

Candidates for this Scholarship must not have been previously registered students of the University, and must be under the age of nineteen years on the 30th of September following the date of examination. Attendance on University classes or laboratories not exceeding three hours per week in any session will not be held to preclude a student from becoming a candidate for this Scholarship under this regulation. The Scholarship can be held only by students living with their parents or guardians resident in the City of Leeds.

The Scholarship is of the annual value of £50, and will be tenable, subject to the continuance of an adequate grant by the City Council, for three years.

The Scholar will be required to pursue such a course of study in the University as shall, in the opinion of the Senate, constitute an effective preparation for a degree in Arts or Science of the University, or for the pursuit of some branch of industry, instruction in the principles of which is given in the University.

Leeds City Council Scholarships are not tenable by students who propose to enter, or who have already entered, on courses of study in the Faculty of Medicine, unless they are reading for the B.Sc. degree of the University of Leeds.

This Scholarship is now awarded on the results of the July Matriculation examination. *Candidates are required to take higher papers in two subjects at this examination, at their own choice.* Applications from candidates for these Scholarships on the prescribed forms which are obtainable

from the Office of the University must be sent to the Registrar not later than May 1st, after which date no application will be received.

1892	Hefford, Charles Nelson	1903	Klein, Harris
1893	Watson, Herbert Wood	1904	Crowther, William Edmund
1894	Cooper, Albert Henry	1905	¹ Simpkiss, Nellie
1895	Findlay, Mary Grace		¹ Webster, Herbert William
1896	Whiteley, Charles Edward	1906	Bannister, Albert
1897	Chapman, Fitzroy Tozer	1907	Brodie, Morris
1898	Gray, Arthur Lambert	1908	No award
1899	Grant, Frederick Ernest	1909	Woodroffe, David
1900	Cunningham, Jean Orme	1910	Whincup, Harry Hynes
1901	Phillipson, Abram	1911	No award
1902	Mellor, Fred		

Emsley Scholarship

This Scholarship was endowed in 1886 by the late Thomas Emsley, Esq., of Burley-in-Wharfedale, who bequeathed £1,000 for the purpose of founding one or more Scholarships in the Yorkshire College.

Candidates for this Scholarship must not have been previously registered students of the University, and must be under the age of nineteen years on the 30th of September following the date of examination. Attendance on University classes or laboratories not exceeding three hours per week in any session will not be held to preclude a student from becoming a candidate for this Scholarship under this regulation.

There will, as a rule, be offered one Scholarship annually, of the value of £20, tenable for two years.

The Scholar will be required to pursue a course of study prescribed for a degree in Arts, Science or Law of the University, or an alternative course in the Faculties of Arts, Science, or Technology, expressly approved by the Senate.

The Scholarship is not tenable in the Department of Textile Industries.

This Scholarship is now awarded on the results of the July Matriculation examination. *Candidates are required to take higher papers in two subjects at this examination, at their own choice.* Applications from candidates for these Scholarships on the prescribed forms which are obtainable

¹ Scholarship divided.

from the Office of the University must be sent to the Registrar not later than May 1st, after which date no application will be received.

1887	Croft, Emily	1899	Robinson, Ethel Margaret
1888	Houfton, Ernest Henry	1900	Findlay, George Hindson
1889	Hurst, Thomas Ockerby	1901	Landman, Samuel
1890	Byles, William Esdaile	1902	Conyers, Hilda
1891	Oyston, William Fletcher	1903	Bibby, Edward Ernest
1892	Jackson, Edwin	1904	Brook, Annie
1893	Bell, Ambrose John	1905	Leslie, May Sybil
1894	Barley, Bunten Archibald Hurd	1906	Wigglesworth, Frank
1895	Corrie, William Edward	1907	Claridge, Marjorie Muriel
1896	Christien, Alfred Eustace	1908	Wilkinson, Eric Fitzwater
1897	Oddy, Annie Maude	1909	No award
1898	Hunt, Arthur Douglas	1910	Wurzal, Joseph
		1911	Richardson, Herbert

Edward Baines Scholarship

The Edward Baines Scholarships, founded in 1885, are established by the University in consideration of the sum of £3,000 which was raised to commemorate the public services of the late Sir Edward Baines. One-half of the sum annually devoted to this purpose is awarded by the University in the form of a Scholarship tenable by candidates who have attended a Public Elementary School within the City of Leeds; the other half is awarded in the form of a Scholarship by the Yorkshire Union of Institutes. For full particulars of the latter Scholarship see Scholarships Prospectus.

Candidates for the Edward Baines Scholarship must not have been previously registered students of the University, and must be under the age of nineteen years on the 30th of September following the date of examination. Attendance on University classes or laboratories not exceeding three hours per week in any session will not be held to preclude a student from becoming a candidate for this Scholarship under this regulation. They must have attended a Public Elementary School in the City of Leeds, and must state the name of such School on the prescribed form of application.

There will be offered in each year one Scholarship, of the value of £20 a year, tenable for two years.

The Scholars will be required to pursue a course of study prescribed for a degree in Arts, Science or Law of the

University, or an alternative course in the Faculties of Arts, Science, or Technology, expressly approved by the Senate.

The Scholarship is not tenable in the Department of Textile Industries.

This Scholarship is now awarded on the results of the July Matriculation examination. *Candidates are required to take higher papers in two subjects at this examination, at their own choice.* Applications from candidates for these Scholarships on the prescribed forms which are obtainable from the Office of the University must be sent to the Registrar not later than May 1st, after which date no application will be received.

1886	Hutchinson, Herbert	1901	Calam, Harold
1888	Legg, Thomas Percy	1902	Robinson, Lilian Dorothea
1891	Dawson, Harry Medforth	1903	Wilson, Florence Grey
1892	Parker, George Robert	1904	Hargreaves, Edith
1894	Hampshire, Florence Elizabeth	1905	Christie, John Hugh
		1906	Marsh, Frank Salton
1895	Warmington, Edith	1907	Guy, Ernest
1896	Scholes, Thomas Wilfrid	1908	Dawes, Ivy Emily
1897	Westerman, Ethel	1909	Stephenson, Cyril Richard
1898	Stevenson, Ethel Mary		William
1899	Savage, Hilda	1910	Mawson, Constance
1900	McKeand, Maggie Woodrow	1911	Webster, Fred

2. Tenable in the Faculty of Arts

Charles Wheatley Scholarship

[No Vacancy in 1912.]

This Scholarship was established by the University in 1903, in consideration of the sum of £1,500 given by the Misses Robinson of Mirfield and Mrs. Steele of Kettering, in memory of the late Charles Wheatley, Esq., of Mirfield. In case of equality of candidates, a preference is to be given to residents in Mirfield.

Candidates for this Scholarship must not have been previously registered students of the University, and must be under the age of nineteen years on the 30th of September following the date of examination. Attendance on University classes or laboratories not exceeding three hours per week in any session will not be held to preclude a student from becoming a candidate for this Scholarship under this regulation.

The Scholarship is of the annual value of £25, tenable for three years, and will be awarded as often as the funds at the disposal of the Trust admit.

The Scholar elected will be required to pursue a course of study at the University preparatory for the B.A. or I.L.B. degree of the University.

This Scholarship is now awarded on the results of the July Matriculation examination. *Candidates are required to offer in this examination at least two languages, whether at the ordinary or at the higher standard, and to take higher papers in two subjects chosen from English Literature, History, Greek, Latin, French, and German.* Applications from candidates for these Scholarships on the prescribed forms which are obtainable from the Office of the University must be sent to the Registrar not later than May 1st, after which date no application will be received.

1904	Scholes, Katharine Louise
1905	Frank, Dorothea Ethel
1906	Batchelor, Edith
1908	Redfearn, Florence Mary
1909	Cass, Muriel
1910	Greenwood, Josem�e Marguerite
1911	No award

William Summers Scholarship

This Scholarship was founded by Mr. and Mrs. Buckley, of Ryecroft Hall, Audenshaw, near Manchester, in memory of William Summers, Esq., late M.P. for Huddersfield, and for many years a member of the Court of the Victoria University.

Candidates for this Scholarship must have been resident in the Parliamentary Borough of Huddersfield during one full year previous to the 1st of June of the year in which they compete, or must have attended a public school in the said Borough for the same period.

The Scholarship is of the annual value of £35, and is tenable for three years. Any accumulations of the Scholarship Fund will be expended by the Council as it may from time to time determine in prizes or exhibitions for candidates who shall have acquitted themselves sufficiently well in the examination without having obtained the Scholarship.

The successful candidate shall be required to pursue in the University of Leeds a regular course of study in one of the following Honours Schools: (1) Classics; (2) English Language and Literature; (3) Modern Languages and Literatures; (4) History; (5) Philosophy; or any other Honours School in the Faculty of Arts, approved by the Senate. Such course shall be commenced in the October next after election to the Scholarship.

The Scholarship is awarded on the results of the July Matriculation examination. *Candidates are required to offer in this examination at least two languages, whether at the ordinary or at the higher standard, and to take higher papers in two subjects chosen from English Literature, History, Greek, Latin, French, and German.* Applications from candidates for these Scholarships on the prescribed forms which are obtainable from the Office of the University must be sent to the Registrar not later than May 1st, after which date no application will be received.

1905	Hirst, John Crosland
1906	Dearnley, Charles
1907	Hobson, Julia
1908	Carter, John Wilfred
1909	No award
1910	No award
1911	No award

3. Tenable in the Faculties of Science and Technology

Brown Scholarships

These Scholarships were endowed in 1877 by the late Henry Brown, Esq., of Bradford and Rawdon, who bequeathed £5,000 to the Yorkshire College for the purpose of founding five or more Scholarships to be called the Brown Scholarships, for students attending the said College and receiving instruction in the various branches of those Sciences which are applicable to the Industrial Arts.

Candidates for these Scholarships must not have been previously registered students of the University, and must be under the age of nineteen years on the 30th of September following the date of examination. Attendance on University

classes or laboratories not exceeding three hours per week in any session will not be held to preclude a student from becoming a candidate for this Scholarship under this regulation.

In general there will be offered in each year one or two Scholarships of £40 a year, each tenable for two years, with power of extension. Applications for extension must be sent to the Registrar before the end of the second term.

A preference will be given, *cæteris paribus*, to candidates who have declared their intention of entering some industry, instruction in the principles of which is given in the University, or of engaging in the teaching of Science. In the case of equality of candidates, a preference will be given to residents in Bradford or natives of Bradford.

Brown Scholars will be required to pursue a course of scientific or technical study which will qualify for a degree in Science, or for a diploma of the University, or otherwise to devote themselves, in a manner approved by the Senate, to the study of one or more branches of pure or applied science taught in the University.

Brown Scholarships are not tenable by students who propose to enter, or who have already entered, on courses of study in the Faculty of Medicine, unless they are reading for the B.Sc. degree of the University of Leeds. They are now awarded on the results of the July Matriculation examination. *Candidates are required to take in this examination higher papers in two subjects, of which one must be Mechanics (including Physics), or Chemistry.* Applications from candidates for these Scholarships on the prescribed forms which are obtainable from the Office of the University must be sent to the Registrar not later than May 1st, after which date no application will be received.

1880	Senior, William Ottè	1886	Jennison, Francis Herbert
	Skirrow, Benjamin Beck	1887	Hartley, Thomas
1881	Overend, Wilkinson	1888	Mann, Harold Hart
	Easterfield, Thomas Hill		Parkin, Ernest
1882	Courtice, George Robert	1889	Smith, James Cowlshaw
	Aulton		Cobb, John William
1883	Teanby, George William	1890	Crouch, John Peachey
	Alvey		Norman, Frank Meade
1885	Marriner, William Wright		Peatfield, Albert Edward

1891	Dewhirst, Wilfrid Arthur	1898	Lodge, Harry Livingstone
	Liversidge, Will	1899	Goodson, Ethel Elizabeth
	French, James Wilson		Grimshaw, Norman
	Duncan, John	1900	Gough, Alfred
1892	White, Arthur Lee	1901	Booth, Meyrick
	Barber, John Watson	1902	Armes, Henry Percy
	Conyers, James Reeve		Crosland, Percy Field
1893	Chapman, Harold Percy		Lord, William Ernest
1894	Dalton, John Edwin	1903	Hodsman, Henry James
1895	Leach, Elsie	1904	McGill, Ernest Arthur
	Robinson, Elizabeth Clare	1905	Barker, Christopher James
1896	Blackburn, William		Watson, James Arthur
	Broughton	1906	Wood, George
	Hinchcliff, Joseph Henry	1907	¹ Lee, Elsie
1897	Forsyth, Christina Brand	1908	² Atkin, William Rearden
	Hunt, Francis William	1909	¹ Stocks, Herbert Holroyd
1898	Hummel, Alfred Roland	1910	Seville, Robert Ockleston
	Ure	1911	Lunn, Reginald William

Akroyd Scholarships

These Scholarships, founded in 1875, are maintained by funds accruing from the Akroyd Trust, and are intended for the encouragement of the study of Natural Science.

Candidates for these Scholarships must not have been previously registered students of the University, and must be under the age of nineteen years on the 30th of September following the date of examination. Attendance on University classes or laboratories not exceeding three hours per week in any session will not be held to preclude a student from becoming a candidate for this Scholarship under this regulation.

In general there will be offered in each year one or two Scholarships of £40 a year, each tenable for two years, with power of extension. Applications for extension must be sent to the Registrar before the end of the second term.

Women are not eligible for the Akroyd Scholarship.

Akroyd Scholars will be required to pursue such a course of study in the Faculties of Science and Technology, as shall, in the opinion of the Senate, constitute an effective preparation for a degree in Science or for a scientific calling.

Akroyd Scholarships are not tenable by students who propose to enter, or who have already entered, on a course of study in the Faculty of Medicine, unless they are reading for the B.Sc. degree of the University of Leeds.

¹ Renewed for a third year. ² Renewed for a fourth year.

These Scholarships are now awarded on the results of the July Matriculation examination. *Candidates are required to take in this examination higher papers in two subjects, of which one must be Mechanics (including Physics), or Chemistry.* Applications from candidates for these Scholarships on the prescribed forms which are obtainable from the Office of the University must be sent to the Registrar not later than May 1st, after which date no application will be received.

1877	Bothamley, Charles Herbert	1890	Mitchell, Clifford
1878	Briggs, William		Archdeacon, William
	Ingle, Herbert		Henry
1879	Wilson, Albert Edward	1891	Holt, John Lupton
	Atkinson, Thomas Francis		Halliwell, Edward
1880	Stables, William Herbert	1892	Turton, Edward
1881	Taylor, Arthur		Brown, James Herbert
1882	Wright, Joseph	1893	Gough, William
	Allen, Harold Newman	1894	Calvert, Harry Thornton
	Hurtley, William Holdsworth	1895	Grocock, Henry Lloyd
	Wright, George Ward		Robinson, Harold
1883	Dibb, John Hustwick	1896	Shepherd, Arthur Burton
	Speak, Savannah Johnson	1897	Middlemiss, James Ernest
1883	Tucker, Clara	1898	Livesey, Charles Edwin
	Hick, Herbert Edward		Leonard
	Wilson, Edwin	1899	White, Herbert Leslie
1884	Fry, Ernest Bickersteth	1900	Scholefield, Fred
	Moore, Ira		Wiley, Edward
	Wheelwright, Edwin	1901	Radcliffe, Norman Brooke
	Whitfield		Zortman, Israel Hyman
	Pocklington, Henry Cabourn	1902	Brown, John Duncan
	Thompson, George Robert		Hollins, Cecil
	Booth, Robert Davis	1903	Harris, Marks Solomon
1885	Duncan, William	1903	Horsfall, Ronald Smith
	Watmough, Benjamin	1904	Davies, Hamilton
	Dains, Herbert Henry		Sinson, Israel Lewis
1886	Hunt, Tom Harold	1905	Jenkins, Gilbert Ramsden
	Ives, James Percy		Marshall, Francis
	Sykes, Ernest		Riley, Frank
1887	Holmes, Harry Slater	1906	² Dudley, Harold Ward
	Booth, Frederick William		Hurst, Frank
	Horrell, Ernest Charles	1907	² Rawling, Francis George
1888	Miall, Stephen		¹ Varley, Gilbert
	Nicholls, Percy	1908	² Pearson, William
	Myers, John Ellis		² Staveley, John
	Sowry, George Herbert	1909	¹ Rawling, Arthur
1889	Porter, John Fletcher		¹ Taylor, Ernest
	Sunderland, Arthur	1910	Douglas, Frank
	Acott, Richard Harry		Hartley, John Alfred
1889	Midgley, Harry	1911	Gibson, Wilfrid
			Harrap, Frank Nettleton

¹ Renewed for a third year.² Renewed for a fourth year.

4. Tenable in the Faculty of Technology

Craven Scholarship

This Scholarship was established in the year 1887, by a number of the Engineers of Leeds, in recognition of the services rendered by the late Joseph Craven, Esq., to the Mechanical Engineering trades of the district.

Candidates for this Scholarship must not have been previously registered students of the University and must be under the age of nineteen years on the 30th of September following the date of examination. Attendance on University classes or laboratories not exceeding three hours per week in any one session will not be held to preclude a student from becoming a candidate for this Scholarship under this regulation.

The Scholarship will be awarded triennially to the Engineering student who, having passed the Matriculation examination of the Joint Matriculation Board, has done best in the ordinary papers in Mathematics and Mechanics. It is of the annual value of £25 and is tenable for three years, subject to the conditions as to conduct and attendance laid down in the General Regulations applicable to all Scholarships. Not less than four-fifths of the value of the Scholarship is to be spent in fees. The balance will be paid to the scholar in cash.

Candidates must have been, previous to the day of examination, resident in the City of Leeds for a period or periods amounting together in the aggregate to at least five years, and be so resident at the time they present themselves for examination. Applications from candidates for these Scholarships on the prescribed forms, which are obtainable from the Office of the University, must be sent to the Registrar not later than May 1st, after which date no application will be received.

1888	Banks, Arthur	1905	No award
1890	Perkin, Herbert	1906	No award
1892	Hammond, Joseph Wetheril	1907	Gerard, Inglis Joseph
1894	Millard, Frederick Stanley	1908	No award
1900	Sturgeon, Robt. Alexander	1909	No award
1900	Anderson, Robert	1910	No award
1901	Frazer, Edgar Hamilton	1911	No award
1903	Maddison, Wilfred Guy		

5. Tenable in the Faculty of Medicine

Medical Scholarship

This Scholarship was instituted by the Leeds School of Medicine in 1888. It consists of free admission to the lectures and practical instruction given in the University for the M.B. course. It does not include Infirmary and Fever Hospital practice and instruction in Vaccination and Intern Maternity which are given outside the University buildings. The Scholarship will be awarded on the results of the July Matriculation examination in the Faculty of Medicine at which Latin and one other language must be taken. *Candidates will be required to take in this examination higher papers in two subjects, of which one must be Mechanics (including Physics), or Chemistry.* Applications from candidates for these Scholarships on the prescribed forms which are obtainable from the Office of the University must be sent to the Registrar not later than May 1st, after which date no application will be received.

Candidates must be under the age of nineteen years on the 30th of September following the date of examination. They must have declared their intention, if elected, of entering the University of Leeds as students in the Faculty of Medicine.

The successful candidate will be required to enter at the University of Leeds as a student in the Faculty of Medicine, in the October immediately following the examination, to pursue, at the University of Leeds and at the General Infirmary at Leeds, the curriculum for a medical degree in the University of Leeds; and to proceed to such degree. But should the successful candidate desire to take a degree in Science or a fuller course of scientific work, before entering upon his professional studies, he shall give immediate notice of his wish to the Senate, which may, if it so determine, allow the Scholar, after passing the First M.B. examination, to postpone his attendance in the School of Medicine for one year only, during which time he shall pursue such course of study at the University as the Senate may authorise.

1889	Houfton, Ernest Henry	1902	¹ Booth, Sydney Herbert
1890	Callum, Harold Sidney Hill		¹ Rawlings, Harry
1891	Greenwood, Henry Harold		Richardson
1892	Towse, Walter	1903	Hamilton, William Douglas
1893	Field, Richard Cullingworth	1904	No award
1894	Turton, Edward	1905	Thoseby, John Norman
1895	Gough, William		Lonsdale
1896	Radcliffe, Percy Alexander	1906	Little, Cuthbert Joseph
	Hurst		Harwood
1897	Coupland, James Alane	1907	Kirk, George William
1898	Middlemiss, James Ernest		Lister
1899	Boyle, Alan	1908	Knowles, Henry Rylands
1900	Edmondson, Watts	1909	No award
1901	Gough, Alfred	1910	Leake, Charles Edward
		1911	Dudley, Charles William

(b) Awarded by Special Examination

William Cooke & Company Scholarship

This Scholarship was instituted in 1906 by Messrs. William Cooke & Co., of Sheffield.

It is of the annual value of £21, and is tenable for two years. It is awarded biennially.

Candidates for this Scholarship must not have been previously registered students of the University, and must be under the age of nineteen years on the 30th of September following the date of the examination.

Candidates must be either (a) mining students articled to mining engineers, colliery managers, or colliery proprietors ; or (b) persons who are actually employed underground at a colliery, or who have been employed underground for a period exceeding three years.

The Scholar will be required to pursue the course of study prescribed for the diploma in Coal Mining, and to present himself, as soon as he is properly qualified, as a candidate for that diploma, and also for the Colliery Manager's First Class Certificate of Competency to manage a Mine. He must attend this course regularly, and must take his examinations in the proper order and at the time laid down by the regulations of the University.

¹ Scholarship divided.

The Scholarship will be awarded on the result of an examination in (1) English Composition ; and (2) Mathematics (Arithmetic ; Algebra, including quadratic equations ; the Elementary Geometry of triangles, parallelograms, and circles, and of similar rectilinear figures), which two subjects are compulsory on all candidates ; and also in one or more of (3) Mechanics ; (4) Physics ; and (5) Chemistry.

In 1912, the examination will be held about the middle of June. Applications from candidates for these Scholarships on the prescribed forms which are obtainable from the Office of the University must be sent to the Registrar not later than May 1st, after which date no application will be received.

**Clothworkers' Textile Free Studentships
Tenable at Evening Classes**

The Worshipful Company of Clothworkers of the City of London offer twelve Free Studentships, each of the value of £2 10s., to selected students from certain Technical Schools in the West Riding who may desire to attend the advanced Evening Classes in the Department of Textile Industries in the University of Leeds. Each Free Studentship is tenable for one year.

**SCHOLARSHIPS TENABLE AT THE
UNIVERSITY
ON THE AWARD OF PUBLIC BODIES
City and County Council Scholarships**

Scholarships are offered by the Leeds City Council and the County Councils of the North, East, and West Ridings of Yorkshire, tenable at the University of Leeds in common with other institutions, in scientific and technical subjects, including Agriculture, as well as in Arts subjects. In the West Riding exhibitions are also offered in Coal Mining, and Free Studentships tenable at the University.

In certain cases assistance is offered to students in Evening Classes.

For further information apply as follows :—

For Leeds City Council Scholarships : The Secretary, Higher Education Department, Leeds.

For West Riding Scholarships and Free Studentships : The Education Department, County Hall, Wakefield. Applicants should ask for Section X of Part II of the Handbook of the Education Committee.

For North Riding Scholarships : The Secretary, County Education Offices, County Hall, Northallerton.

For East Riding Scholarships : The Clerk, East Riding County Council, Beverley.

In all cases where there is a possibility of Scholarships being renewed, application for renewal should be made to the Vice-Chancellor not later than the end of the second term.

Assisted Studentships for Teachers

The Lords of the Committee of Council on Education pay three-fourths of the fees in the following Day classes, and one-half of those in the Evening classes, for a limited number of teachers engaged in science teaching.

Applications for this privilege must be made to the Secretary, Board of Education, South Kensington, not later than August 1st in each year.

I. Day Classes

Physics : Any of the lecture courses, not exceeding two in number ; laboratory instruction for not less than half a day per week.

Chemistry : Lectures and laboratory as above.

Zoology : The lecture courses, Elementary (including practical work), and Advanced.

Botany : The lecture courses, Elementary (including practical work), Advanced, and Agricultural (including practical work).

Biology : Laboratory, not less than one day per week ; course in Nature Knowledge.

Mathematics : Any of the lecture courses, not exceeding two in number.

Electrical Engineering : Lectures and laboratory as above.

Agriculture : The lecture courses, first year (including practical work), and second year (including practical work).

Agricultural Chemistry : Any of the lecture courses, not exceeding two in number. Laboratory instruction for not less than half a day per week.

II. Evening Classes

Electrical Engineering : Any of the lecture courses, not exceeding two in number. Practical class.

FORMER SCHOLARSHIPS, NOW DISCONTINUED

Akroyd and Brown Senior Scholarships

Formerly part of the income of the Akroyd and Brown Scholarship funds was applied to the maintenance of Senior

Scholarships, awarded after examination to registered students of the University, and tenable in the Faculties of Science and Technology, but the Senate resolved on May 15, 1905, to apply such income to the continuance of Scholarships originally awarded as Entrance Scholarships.

Akroyd Senior Scholars

1882	Parkin, Alfred	1894	Wilson, Harold Albert
1883	Taylor, Arthur		Haworth, Frederic
1884	Wright, Joseph	1895	Rigby, William
1885	Speak, Savannah Johnson		King, Herbert
1886	Wilks, Stephen Longmore	1896	Calvert, Harry Thornton
	Butterworth		Jowett, Albert
	Wheelwright, Edwin Whit-		Tansley, George Edward
	field	1897	Storr, Bertram Vincent
	Courtice, George Robert		Cooper, Albert Henry
	Aulton	1898	Grocock, Henry Lloyd
1887	Hastings, Hugh	1898	Shepherd, Arthur Burton
1888	Stoney, William Walter	1899	Hunt, Francis William
1889	Ingle, Harry		Gawler, Robert
1890	Miall, Stephen	1900	Grant, Charles Henry
	Mann, Harold Hart		Thompson, John Thomas
1891	Cobb, John William	1901	Denton, Ernest
1892	Archdeacon, William Henry		Gray, Arthur Lambert
1893	Wise, Julian Stanton	1902	Raper, Henry Stanley
	Welpton, William Parker	1903	Zortman, Israel Hyman
	Guthrie, Thomas	1904	Phillipson, Abram

Brown Senior Scholars

1880	Ingle, Herbert	1892	Davis, Frederick William
	Passavant, Laura Maude		Daniel
1881	Wilson, Albert Edward		Marsland, Roland
	Armstrong, Wilhelmina	1893	Dawson, Harry Medforth
	Maria		Motley, Parker
1882	Senior, William Otte	1894	Eurich, Hermann Oskar
	Stables, William Herbert	1895	Guthrie, Thomas
1883	Allen, Edgar Johnson	1896	Dalton, John Edwin
	Ahrons, Ernest Leopold	1897	Broadbent, Francis James
1884	Potter, Arthur Edward		Skirrow, Frederick William
	Schmitz, Herman Emil	1898	Findlay, Mary Grace
1885	Dibb, John Hustwick	1899	Whiteley, Charles Edward
	Hurtley, William Holdsworth	1900	Chapman, Fitzroy Tozer
1886	Pocklington, Henry Cabourn		Unwin, Ernest Ewart
	Thompson, George Robert	1901	Hummel, Alfred Roland
1887	Duncan, William		Ure
	Thorpe, Walter		Stoddard, Arthur Askwith
1888	Sykes, Ernest	1902	Dell, John Alexander
1889	Watson, Frank Leslie		Goodson, Ethel Elizabeth
1890	Nicholls, Percy	1903	Calam, Harold
	Myers, John Ellis		

SENIOR SCHOLARSHIPS

1851 Exhibition Scholarship

Since 1891 the Commissioners for the Exhibition of 1851 have placed at the disposal of the Yorkshire College, now the University of Leeds, the nomination to one Scholarship of the annual value of £150, tenable ordinarily for two years, and in rare instances for three years. The continuation each year after the first will depend upon the work done in the previous year being satisfactory to the Scientific Committee appointed by the Commissioners.

The Scholarship is limited to those branches of science (such as Physics, Mechanics, and Chemistry), the extension of which is specially important for our national industries.

Candidates must (*a*) be British subjects ; (*b*) be *bonâ fide* students of science of three years' standing at least in Universities or Colleges in which special attention is given to scientific study ; (*c*) either have been engaged in study at the University for a full year prior to the 1st of April following the date of application, or have been students of the University for a full year ending within twelve months prior to the 1st of April following the date of application, and, having since ceased to be students, have been engaged solely in scientific study ; (*d*) indicate high promise of capacity for advancing science or its applications by original research.

A recommendation can only be made in favour of a student who has already given proof of both ability and desire to make original investigations. In the opinion of the Commissioners the most suitable evidence that a candidate possesses these qualifications is a satisfactory account of a research already completed by him, and they will decline to confirm a recommendation unless such an account is furnished, or there is other equally distinct evidence that the qualifications of the candidate are such as are above indicated.

Applications will be received by the Registrar of the University up to the last day of February in each year.

1891-4	Ingle, Harry.
1892-4	Mann, Harold Hart.
1893-6	Myers, John Ellis.
1894-6	Dent, Frankland.
1896-9	Dawson, Harry Medforth.
1897-1900	Wilson, Harold Albert.
1898-1901	Calvert, Harry Thornton.
1899-1902	Skirrow, Frederick William.
1900-3	Varley, William Mansergh.
1901-4	Denison, Robert Beckett.
1902-5	Dakin, Henry Drysdale.
1903-6	Gaunt, Rufus.
1904-7	Raper, Henry Stanley.
1905-7	Zortman, Israel Hyman.
1906-8	Armes, Henry Percy.
1907-10	Hoddsman, Henry James.
1908-10	Cross, William Ernest.
1909-11	Leslie, May Sybil.
1910-12	Dudley, Harold Ward.
1911-13	Powis, Frank

1851 Exhibition Industrial Bursary

The Commissioners for the Exhibition of 1851 have established a scheme of Industrial Bursaries for young men who, after a course of training in a University or approved Technical College, desire to enter Engineering, Chemical or other manufacturing works. The Bursaries are intended to enable suitable applicants to tide over the period between their leaving College and obtaining remunerative employment in industry. The value of the Bursary will depend on the circumstances of the candidate, but will as a rule not exceed £100 a year.

A Bursar will be elected in the first instance for one year, but the tenure of his Bursary will ordinarily be prolonged for a second year provided that the Commissioners are satisfied with the work done by the Bursar during his first year. In special circumstances a Bursary may be renewed for a third year. The appointments to the Bursaries will be made by the Commissioners from among candidates recommended by the Authorities of certain selected Universities and Technical Schools.

N.B.—In dealing with these recommendations great weight will be given to evidence that a candidate has the practical abilities likely to lead to his advancement in manufacturing work, academic success alone being an insufficient recommendation.

The candidate must be a British subject, under the age of 25, and must have been a *bona fide* student of Science for a term of three years. He must further satisfy the Commissioners :—

- (a) That he has obtained, or can, within one month of election, obtain a post in some Engineering or other manufacturing works approved by them.
- (b) That he is in need of pecuniary assistance to enable him to accept such a post.

A Bursar may, if the Commissioners approve, spend part of the tenure of his Bursary in studying a special industrial process or processes in works either at home or abroad. No Bursar shall enter a firm as a premium pupil without the special consent of the Commissioners. A Bursar must submit a report of his work to the Commissioners on the expiration of each year of his Bursary.

1911 Stillwell, Samuel Thomas Cryer

**(a) SCHOLARSHIPS TENABLE ONLY BY
GRADUATES OF THE UNIVERSITY**

1. University Scholarships

A limited number of University Scholarships may be offered annually, and will ordinarily be awarded to students who have shown special merit in the Final Examinations of the Honours Schools of the University. In the election to Scholarships, preference will ordinarily be given to students who are prepared to undertake advanced study or research. When such advanced study or research is undertaken in the University, or in some other University or learned institution, or under suitable guidance in a manner approved by the Senate, an additional maintenance grant not exceeding £50 may be made; in other cases the Scholarship will be of the value of £25.

Scholars who receive a grant additional to the £25 will be required to furnish a report of the work done by them during the tenure of the Scholarship, such report to be laid before the Senate before June 1st of the year following the

award of the Scholarship. Scholarships may be renewed for a second year when the scholar is undertaking advanced study or research.

- 1905 Armes, Henry Percy (Chemistry).
¹Gunnell, Doris (Modern Languages).
¹Holmes, Carrie (English).
Edwards, Maud Mary (Modern Languages).
Gregory, Frederick Maurice (Engineering).
- 1906 Hodsman, Henry James (Chemistry).
Butterworth, George William (Classics).
Holgate, Edward (Engineering).
- 1907 Cross, William Ernest (Chemistry).
Davies, Hamilton (Chemistry).
Fairley, Barker (Modern Languages).
Shuttleworth, Newton (Electrical Engineering).
Thorp, Hilda (Modern Languages).
Walker, Jessie (English).
- 1908 Blockey, John Reginald (Chemistry).
Jackson, Colin Gyrth (Chemistry).
Leslie, May Sybil (Chemistry).
Riley, Frank (Chemistry).
¹Strange, Edward Howard (Philosophy).
- 1909 Dudley, Harold Ward (Chemistry).
Peel, Albert (History).
- 1910 Duffin, Joseph Francis (Physics).
Powis, Frank (Chemistry).
- 1911 Chapman, Sarah Elizabeth (Geology).
Woodman, Hubert Ernest (Chemistry).

2. Gilchrist Studentship in Modern Languages

This Studentship was instituted in 1905 by the Gilchrist Educational Trust, founded by Dr. Gilchrist, who died in 1841, for "the benefit, advancement and propagation of education and learning in every part of the world, as far as circumstances permit." It is of the value of £80, is tenable for one year, and is open for graduates of either sex who have taken Honours in Modern Languages in the Final degree examination of the University, and who are proposing to enter the profession of teaching in secondary schools. The purpose of the Studentship is to enable the holder to pursue a special course of study abroad with a view to qualifying himself (or herself) for teaching modern languages in a secondary school.

¹ Renewed for a second year.

The regulations are as follows :

1. The Studentship is awarded annually by the Gilchrist Trustees.

2. Candidates must have obtained Honours in Modern Languages in the Final examination for a degree, and be recommended by the University after consultation with the Professors concerned, and after special inquiry into the suitability of the candidates for the profession of teacher in a secondary school. If possible, two names shall be submitted each year to the Trustees for their consideration. Save in exceptional circumstances, of which the Trustees shall be the sole judges, the examination must be that immediately preceding the date of application.

3. The holder of the Studentship will be required to follow a course of preparation for the profession of Modern Language teacher, and must submit his (or her) proposed course of work for the approval of the Trustees, who will take steps to satisfy themselves that the course of preparation proposed to be undertaken is suitable for the purpose in view.

4. The tenure of the Studentship is for one year beginning on the date of election, and the emoluments will be paid half yearly by the University on production of evidence that the proposed course of preparation is being satisfactorily carried out.

5. The Student will be required, at the expiration of the tenure of the Studentship, to make a report to the University, setting out the course of work and preparation which has been pursued, and this report together with a covering communication from the University shall be forwarded to the Trustees.

1906	Edwards, Maud Mary	1909	Longbottom, Nellie
1907	Thorp, Hilda	1910	Hobson, Julia
1908	Murphy, Bertha Mary	1911	Carter, John Wilfrid

3. Clothworkers' Research Scholarship in Colour Chemistry and Dyeing

This Scholarship, of the value of £60 a year, tenable in the Department of Tinctorial Chemistry and Dyeing, will be awarded annually upon the results of the Final examination

for the B.Sc. degree, preference being given to candidates who graduate with Honours in Applied Chemistry (Colour Chemistry and Dyeing).

The Scholarship will be awarded for one year, but may, at the discretion of the Examiners, be extended to a second year.

The Scholar will be required to devote his whole time to carrying out some special branch of research in Colour Chemistry or Dyeing.

- 1907 Baddiley, James
1908 ¹Woodhead, Arthur Edmund
1910 Bearder, Ernest Arthur
1911 Rowe, Frederick Maurice

(b) SCHOLARSHIPS TENABLE ONLY BY
STUDENTS OF THE UNIVERSITY

1. Tenable in the Faculties of Arts, Science and
Technology

Leighton Scholarships

These Scholarships were instituted in 1894 by the Trustees of the late Mrs. Isabel Leighton of Leeds.

Candidates must be registered students of the University of not less than two terms standing. They must have attended a Public Elementary school or schools in the City of Leeds for not less than three years.

Three Scholarships are ordinarily offered each year, each of the annual value of £10, and tenable for two years, subject to the reports on the student's work during the first year of tenure being satisfactory.

The Scholarships will not be awarded on any special examination, but *those students who are desirous of becoming candidates are required to send in their names to the Registrar not later than May 1st in each year.*

In recommending candidates for appointment, the Senate will be guided by the position held by the candidates in their terminal examinations, and also by their general work and conduct. The need of the applicants for pecuniary assistance will also be taken into consideration.

¹ Renewed for a second year.

The Scholarships are tenable by day students pursuing any course of study in the Faculties of Arts, Science and Technology, and may, with the consent of the Trustees, be held in conjunction with any other Scholarship.

The election will be made in the third term of the session, provided that there be suitable applicants.

1894	Gough, William	1905	Lacy, Arthur
1895	Hampshire, Florence Elizabeth		Vernon, Edgar
1896	Shacksnovis, Reuben	1906	Hogan, Kathleen
1897	Porritt, Florence Mary Scholes, Thomas Wilfrid	1907	Everett, Percy Newton Marsh, Frank Salton Turner, Frederick William
1898	Gawler, Robert	1908	King, Norman Mann, Clarissa Powis, Frank Webster, Herbert William Wood, Louis Albert
1899	Crosfill, John Phillipson, Coleman	1909	Ellis, Henry Carl Noel Taylor, Arthur Worsnop, Edgar
1900	Savage, Hilda Robinson, Ethel Margaret	1910	Goldstone, Cecilia Lee, Harry Libbish, Barnet
1901	Burgess, Lillie Scholefield, Fred	1911	Dawson, Thomas Rayner Mallin, Hubert Patrick
1902	Calam, Harold Landman, Samuel Stead, Frank Cawthron		
1903	Appleyard, John Ernest Robinson, Lilian Dorothea Waite, Joseph Henry		
1904	Carlton, George Westerdale Maddison, Wilfred Guy Thorp, George		

2. Tenable in the Faculty of Arts

Salt Scholarship

This Scholarship was founded by the late Sir Titus Salt, Bart., in 1875.

Candidates must be scholars or registered students of the University in at least their sixth term.

The value of the Scholarship is £20 a year, and it is tenable for two years.

The Scholarship is awarded at the discretion of the Senate, with or without examination.

The Scholar elected will be required to pursue a course of study at the University preparatory for a degree in Arts of the University of Leeds. In the event of graduation at the end of the first year of tenure, the Scholar will be required to pursue a course of postgraduate study satisfactory to the Senate.

Applications from candidates for these Scholarships must be sent to the Registrar of the University not later than May 1st.

1882	Wright, Benjamin	1899	Melville, Ellen Louisa
1885	Barker, Arthur Henry	1901	Stevenson, Ethel Mary
1887	Jackson, Thomas Chalice	1903	Davis, William Hathaway
1891	Hurst, Thomas Ockerby	1904	Landman, Samuel
1893	Cleasby, Mabel	1906	Gill, William Conrad
1895	Hornby, George Goodall	1908	Dean, Arthur Ernest
1897	Robinson, Elizabeth Clare	1910	Phillips, Samuel

John Rutson Scholarship

This Scholarship was founded by Mr. Henry Rutson of Northallerton, in memory of his brother Mr. John Rutson. It has been assigned to the Faculty of Arts for the encouragement of research, and the Scholar will be chosen from amongst those who have shown promise of ability to conduct such research.

The Scholarship is of the annual value of about £70 and is tenable for one year, but may be renewed for one year more.

The successful candidate shall be required to undertake advanced study or research in the University, or in some other University or learned institution, or under suitable guidance in a manner approved by the Senate.

The Scholar shall also be required to furnish a report of the work done by him or her during the term of the Scholarship, such report to be laid before the Senate before June 1st of the year following the award of the Scholarship.

1908	¹ Hogan, Kathleen
1910	Peel, Albert
1911	Heaton, Herbert

¹ Renewed for a second year.

3. Tenable in the Faculty of Medicine

Infirmary Scholarship

This Scholarship was founded in 1888 by the Faculty of the Leeds General Infirmary. It is of the value of 40 guineas and consists of a free ticket to the clinical teaching of the Leeds Infirmary. The holder is required to enter as a student for the whole medical curriculum at the University in the session following the date of examination.

This Scholarship is now awarded, after a report from the examiners, on the results of the First M.B. examination of the University of Leeds, held in March and June of each year. Candidates must send in their names to the Secretary of the Faculty, General Infirmary, Leeds, not later than June 1st.

1889	Fearnshides, Philip Henry	1901	Rawlings, Harry Richardson
1890	Gross, Phineas	1902	Pickles, William Norman
1891	Greenwood, Henry Harold	1903	Carlton, George Westerdale
1892	Field, Richard Cullingworth	1904	No award
1893	Dewhirst, Wilfrid Arthur	1905	No award
1894	Andrews, Joseph Dalby	1906	Fisher, John Barugh
1895	Pegler, William Vernon	1907	Sinson, Julius Barnett
1896	Matthews, Crawford Tait	1908	Metcalfe, John Clifford
1897	Middlemiss, James Ernest	1909	Sinson, Harry Abram
1898	Heald, Samuel Linley	1910	Shochet, Harry
1899	Smailes, William Herbert	1911	Holt, Herbert Mainwaring
1900	Gough, Alfred		

4. Tenable in the Faculty of Technology

Clothworkers' Scholarships

These Scholarships were founded in 1875 by the Worshipful Company of Clothworkers of the City of London, who offer three Scholarships, each of the value of £20, to students in the Department of Textile Industries. Two of these Scholarships are awarded to students of the first year on the result of the second term examinations, and one to a student of the second year on the result of the second term examinations.

Each Scholarship is tenable for one year. Students holding these Scholarships will be required to attend an Advanced Course in Textile Industries, and the Senior Class in Applied Art. These Scholarships are only tenable by

students not more than twenty-four and not less than sixteen years of age on the 1st of October following the date of examination.

Students holding Scholarships are expected to present themselves for examination (in the University) by the City and Guilds of London Technical Institute, in one of the following subjects, viz.: Textile Fabrics—Spinning and Weaving of (a) Wool and Worsted, (b) Cotton, (c) Linen, (d) Silk.

The Scholarships will be awarded on the result of the second term Examinations, which in the case of the first year students will be in

(a) Designing and Weaving,

(b) Textile Colouring,

(c) Applied Art;

and in the case of second year students in

(a) Designing and Weaving,

(b) Textile Colouring,

(c) Cloth Finishing,

(d) Applied Art.

Regard also will be had to the general progress candidates have made in their theoretical and experimental studies.

Applications from candidates for these Scholarships must be sent to the Registrar not later than January 31st.

1901	Grimshaw, Norman	1906	Broadbent, Lees
	Wilson, Stanley Ewart Ashley		Cockcroft, Ernest Edward
	Brigg, Lawrence Heriot		Mills, James
	O'Flynn, James		Sutcliffe, Arthur Livsey
1902	Mellor, Cecil Smith	1907	Cockcroft, Ernest Edward
	Duncan, Harold		Fairburn-Hart, George
	Gaunt, Frederick William		Stanley
	Munro, William Thow		Wilson, James Blackburn
1903	Smith, Lister	1908	Eadie, Thomas Tait
	Rayner, Harold Kingsbury		Pfenniger, Paul
	Hodgson		Wilson, James Blackburn
	Horsham, Wilfred Robert	1909	Bradley, William
	Beaumont, Frank		Eadie, Thomas Tait
1904	Whitworth, Abraham		Twohig, John Patrick
	Hart, Harry Leatham	1910	Stevenson, William
	Horsham, Wilfred Robert		Turnbull, Kenneth
	Holloway, Joseph		Twohig, John Patrick
1905	Mills, James	1911	Bonhomme, Jean Raymond
	Hart, Harry Leatham		Dircks, Hugh Douglas
	Bradley, Jim		Kyle, John William
	Broadbent, Lees		

FELLOWSHIPS**(a) University Fellowships**

University Fellowships may be awarded, should the funds of the University permit, to graduates of the University within three years from the date of graduation. Such Fellowships will be of the value of £100 tenable for one year. The object of the Fellowships is the encouragement of research, and the Fellow will be required to devote the whole of the time during which he continues to hold the Fellowship to the pursuit of such research under conditions approved by the Senate. In special cases an additional grant not exceeding £20 may be made to the Fellow by a special vote of the Senate and Council to assist him in carrying out his researches. No Fellow shall be permitted to hold any paid appointment, or to undertake remunerative work without previous permission from the Senate, which shall have power in such cases to reduce the value of the Fellowship.

Fellowships will not be awarded except to candidates who have given evidence of qualifications for undertaking original work. Fellows are required to furnish a report of the work done by them during the tenure of the Fellowship, such report to be laid before the Senate before June 1st of the year following the award of the Fellowship. The Fellowships may, in exceptional instances, and with the consent of the Senate and Council, be renewed for a second year.

- | | | |
|------|--|-------|
| 1905 | Marshall, Joseph, B.Sc. (Chemistry). | £100. |
| | Waterhouse, Osborn, B.A. (English). | £100. |
| 1911 | Charlton, Henry Buckley, B.A. (English). | £100. |

(b) Fellowship for Gas Research

The Fellowship, of the value of £100 per annum, will be awarded by the Senate, on the recommendation of the Board of Science and Technology, to a duly qualified candidate for the prosecution of post-graduate research in gas chemistry. Preference will be given to candidates who have signified their intention of entering the coal gas industry, or in default of any such candidate, to a person qualifying for some other branch of fuel industry.

The award of the Fellowship will be made annually during the month of June, after due advertisement of it in the technical press and other appropriate journals. Applications for the Fellowship must be made to the Registrar of the University on or before May 1st of each year.

It will always be within the power of the Senate, on the recommendation of the Board of Science and Technology, to renew the Fellowship to the holder of the same for a further period of a year, instead of proceeding to a fresh election.

The holder of the Fellowship shall undertake research work in the University under the direction of the Professor of Fuel and Metallurgy on some subject connected with the chemistry of gases and combustion. The selection of the subject, and the method of carrying on the work, will be left to the judgment of the Professor responsible for its direction.

The University will provide, free of charge, all reasonable accommodation and facilities required for the prosecution of the research undertaken by the holder of the Fellowship, including working space and the use of such instruments and appliances installed as part of the equipment of the Fuel and Metallurgical Department. Any *special* expenses, not exceeding £25, incurred during the prosecution of the research will be defrayed by the Institute of Gas Engineers.

A report of the research work carried out by the holder of the Fellowship shall be submitted to the Council of the Institute of Gas Engineers, as well as to the Senate of the University, on or before May 1st, of each year, together with copies of any papers published in connection with the research.

1907-9 Forshaw, Arthur, M.Sc., Victoria.

1909-11 Hartley, Harold, M.Sc., Victoria.

PRIZES

Gladstone Memorial Prize

The Trustees of the Gladstone Liberal Memorial Fund have established Gladstone Memorial Prizes to be given in books at the Universities and University Colleges in England, Scotland, and Wales for special proficiency in History, Political Science, and Economics. An annual prize

of the value of £5 has been offered to and accepted by the Council of the University, and will be awarded under the following conditions :

1. The prize will be awarded for an Essay on some subject connected with History or Political Science or Economics.
2. It will be open to competition among all students of Day Classes of the University who are in attendance upon University lectures for not less than four hours per week.
3. No student who has once obtained the Prize may compete a second time.

The Essay must be sent in to the Professor of History not later than the end of September.

1902	Savage, Hilda	1907	¹ Simpkiss, Nellie
1903	Davis, William Hathaway		¹ Winter, John Edgar
1904	Gill, William Conrad	1908	Dean, Arthur Ernest
1905	Butterworth, George	1909	¹ Peel, Albert (£3).
	William		¹ Phillips, Samuel (£2).
1906	Findlay, Sarah Kennedy	1910	Pickering, Harry

The Ripon English Literature Prize

The Committee formed to obtain for the University, by subscriptions, a portrait of the late Chancellor, the Marquis of Ripon, K.G., presented to the University the surplus funds, amounting to £180, for investment, with a view to providing an Annual Prize in the subject of English Literature to be called "The Ripon English Literature Prize." A Prize to the value of £6 will accordingly be awarded annually, under the following conditions :—

1. The prize will be awarded for an Essay on some subject connected with English literature.
2. It will be open to competition amongst all students of day classes of the University who have completed the course and passed the Final examination for the Bachelor's degree of the University in the June preceding the award of the prize.
3. The subjects will be announced in May of each year, and the Essay must be sent in to the Professor of English not later than the October following.

1910 Speight, Philip Henry.

Leblanc Medal

The Leblanc Memorial Committee presented the Victoria University with a portion of the surplus from the fund raised

¹ Prize divided.

in France for the erection of a statue of the distinguished chemist, Nicolas Leblanc, the amount to be devoted to the encouragement of the study of Chemistry. On the foundation of a separate University in Leeds a share of the fund was vested in the University of Leeds.

Leblanc Medals may be awarded at the Final Examination for the Degree of B.Sc. in the Honours Schools of Colour Chemistry, Leather, and Fuel and Metallurgy to such students as are reported by the Examiners to have shown special distinction, and who are recommended jointly by the Internal Examiners in these subjects.

1891	Ingle, Harry	1908	Rhodes, Norman
1892	Mann, Harold Hart		Woodhead, Arthur Edmund
1898	Skirrow, Frederick William	1910	Bearder, Ernest Arthur
1905	Davies, Arthur Hugh		Seymour-Jones, Arnold
1907	Baddiley, James		

Thorp Scholarship in Forensic Medicine and Hygiene

The Thorp prizes, instituted by the late Dr. Disney L. Thorp, one of the original founders of the Leeds School of Medicine, are now awarded as one annual Scholarship of about £25 to a student or graduate of the University prepared to carry out some research work in some subjects bearing upon Forensic Medicine or Public Health. For particulars, application should be made to the Dean of the Faculty of Medicine.

In Forensic Medicine

1900	Gough, William	1906	Heppenstall, Clement
1901	Cundall, Edward		Hoyle
1902	Boyle, Alan	1907	Dunbar, Dean
1903	No award	1908	No award
1904	Parkinson, Alfred Howard	1909	Cross, George Harold
1905	Shacknovis, Reuben	1910	Sinson, Julius Barnet

In Public Health

1900	Radcliffe, Adolphus Harold	1905	Hamilton, William Douglas
1901	Braithwaite, Leonard Ralph	1906	No award
1902	Tomlin, Herbert	1907	No award
1903	Legge, James Huntly	1908	Brown, John Perrin
1904	No award	1910	Walker, John Perry

Thorp Prize Essay

A sum of fifteen pounds is offered every three years for an essay or original research on some subject connected

with Forensic Medicine or Public Health. The competitors must have attended in the University of Leeds all the courses necessary to qualify for degrees or diplomas in Medicine, and must have received their degree or diploma not more than three years before the competition. The scope and nature of the essay or research may be either physical, chemical, microscopical, physiological, clinical or statistical, but its subject must have received the approval of the Board of the Faculty of Medicine one year before the award is made. The successful essay or paper with the drawings and specimens by which it may be illustrated will become the property of the University.

Hardwick Prize in Clinical Medicine

This prize, of the value of ten pounds, is given annually on a competition which is held early in June. Candidates must have been students in the School of Medicine of the University of Leeds for not less than eight terms; they must be attending the medical practice of the Leeds Infirmary; and they must have held or be then holding the office of Clinical Clerk in that Institution.

1900	Willans, Charles Rudolph	1907	No award
1901	Saville, Edwin	1908	Mitchell, Guy Annesley Carter
1902	Coupland, James Alane	1909	Thoseby, John Norman Lonsdale
1903	Matthews, Crawford Tait	1910	Hooton, William Henry
1904	Tomlin, Herbert		
1905	Gough, Alfred		
1906	No award		

McGill Prize in Clinical Surgery

This prize, of the value of ten pounds, is given annually on a competition which takes place in the month of May. Candidates must be students in the School of Medicine of the University of Leeds who have not at the time of the examination entered on their sixth year, and who have held at the Leeds Infirmary the following appointments:—In-patient dresser, ophthalmic dresser, in-patient medical clerk, post-mortem clerk, and gynæcological dresser.

1900	Gough, William	1907	No award
1901	Keeling, Hugh Neville	1908	Mitchell, Guy Annesley Carter
1902	Coupland, James Alane	1909	Thoseby, John Norman Lonsdale
1903	Braithwaite, Leonard Ralph	1910	No award
1904	Brierley, Wilfred Edward		
1905	Gough, Alfred		
1906	No award		

Scattergood Prize in Obstetrics and Gynæcology

This prize, instituted in memory of the first Dean of the Medical Department, Yorkshire College, will be awarded on the result of a special examination in Obstetrics and Gynæcology to be held annually in the third term by the Professor of Obstetrics and the Lecturer on Gynæcology conjointly. The examination shall consist of a written paper, of oral examination on specimens and instruments and of clinical investigation and report on patients.

Candidates must be students of this University and must have passed their second examination or its equivalent and have attended lectures in Obstetrics and Gynæcology, and have held their gynæcological and maternity clerkships, or be holding such at the time of the examination; and they must not have entered for the examination on a previous occasion.

They may enter for this examination up to the end of their sixth year of medical study. Allowance will be made if an extra year has been taken for the primary Fellowship examination or for an Honours course, as in the case of the McGill prize.

The value of the prize, which consists of books or instruments, is five pounds.

1900	Acomb, John	1906	Heppenstall, Clement Hoyle
1901	Coates, Richard	1907	Thoseby, John Norman
1902	Tomlin, Herbert		Lonsdale
1903	Smailes, Herbert William	1908	Hooton, William Henry
1904	No award	1909	Bernstein, Isaac Barnett
1905	Hamilton, William Douglas	1910	No award

Gold Medal

A Gold Medal of the value of ten pounds, formerly presented by the Treasurer, and since 1901 by the Faculty of the Infirmary, is awarded on the collated results of the prize examinations in the following subjects:—(1) Surgery; (2) Medicine; (3) Pathology; (4) Obstetrics; (5) Forensic Medicine (Thorp Prize); (6) Clinical Medicine (Hardwick Prize); (7) Clinical Surgery (McGill Prize); (8) Gynæcology, Clinical Obstetrics and Gynæcology (Scattergood Prize); (9) Public Health (Thorp Prize); (10) Pharmacology and

Therapeutics ; (11) Practical Surgery ; (12) Ophthalmology ; (13) Mental Diseases. To qualify for the Gold Medal the candidate must have attended all his final classes, *i.e.*, must have completed and not have exceeded his fifth year of study, and must present four prizes or their equivalent. Should a student desire to spend an additional year antecedent to the study of the subjects in Part III in preparing for a Science degree, Honours, or the Primary Fellowship of the Royal College of Surgeons of England, such time need not be counted as one of the five years. Of these prizes one must be either the Surgery or the McGill Prize, and another either the Medicine or the Hardwick Prize.

1900	Gough, William	1907	No award
1901	Saville, Edwin	1908	Mitchell, Guy Annesley Carter
1902	Coupland, James Alane	1909	Thoseby, John Norman Lonsdale
1903	No award	1910	No award
1904	No award		
1905	Gough, Alfred		
1906	No award		

Silver Medal

The Junior Medal (Silver) is awarded upon the results of the prize examinations in the following subjects :—(1) Junior Anatomy ; (2) Senior Anatomy , (3) Physiology ; (4) Practical Physiology (including the experimental portion of part ii) ; (5) Materia Medica ; that is to say, upon the subjects of the second year and the first and second terms of the third year in the "Normal Course for the M.B.Ch.B. of the University of Leeds." To qualify, the candidate must obtain two prizes or their equivalent.

1899	Coupland, James Alane	1906	Mitchell, Guy Annesley Carter
1900	Braithwaite, Leonard Ralph	1907	Cross, George Harold
1901	Boyle, Alan	1908	Hooton, William Henry
1902	Gough, Alfred	1909	Robinson, William
1903	No award	1910	Mellis, George Pickard
1904	No award		
1905	Hamilton, William Douglas		

Class Prizes

Book prizes and Certificates of Honour are given in the various classes in the School of Medicine at the end of each session.

FELLOWS, SCHOLARS AND EXHIBITIONERS, 1911-12

	Date of Election	
<i>University Fellowship</i> ...	1911	Charlton, Henry Buckley
<i>Gas Research Fellowship</i>	1909	Hartley, Harold
<i>University Scholarships</i>		
<i>(Geology)</i> ...	1911	Chapman, Sarah Elizabeth
<i>(Chemistry)</i> ...	1911	Woodman, Herbert Ernest
1851 <i>Exhibition</i>		
<i>Scholarship</i>	1910	Dudley, Harold Ward
" ...	1911	Powis, Frank
1851 <i>Exhibition</i>		
<i>Industrial Bursary</i>	1911	Stillwell, Samuel Thomas Cryer
<i>Gilchrist Studentship</i> <i>in Modern Languages</i>	1911	Carter, John Wilfrid
<i>Clothworkers' Research</i> <i>Scholarship in Colour</i> <i>Chemistry and Dyeing</i>	1911	Rowe, Frederick Maurice
<i>John Rutson Scholarship</i>	1911	Heaton, Herbert
<i>Leighton Scholarship</i> ...	1910	Goldstone, Cecilia
" ...		Lee, Harry
" ...		Libbish, Barnet
" ...	1911	Dawson, Thomas Henry
" ...		Mallin, Hubert Patrick
<i>Salt Scholarship</i> ...	1910	Phillips, Samuel
<i>Infirmiry Scholarship</i>	1907	Sinson, Julius Barnet
" ...	1908	Metcalf, John Clifford
" ...	1909	Sinson, Harry Abram
" ...	1910	Shochet, Harry
" ...	1911	Holt, Harry Mainwaring
<i>Clothworkers' Textile</i> <i>Scholarship</i>	1911	Bonhomme, Jean Raymond
" ...		Dircks, Hugh Douglas
" ...		Kyle, John William

		Date of Election	
<i>Leeds City Council</i>			
<i>Scholarship</i>	1909	Woodroffe, David	
"	1910	Whincup, Harry Hynes	
<i>Emsley Scholarship</i> ...	1910	Wurzal, Joseph	
" ...	1911	Richardson, Herbert	
<i>Edward Baines</i>			
<i>Scholarship</i>	1910	Mawson, Constance	
"	1911	Webster, Fred	
<i>Charles Wheatley</i>			
<i>Scholarship</i>	1909	Cass, Muriel	
"	1910	Greenwood, Josem��e Marguerite	
<i>Brown Scholarship</i> ...	1909	Stocks, Herbert Holroyd	
" ...	1910	Seville, Robert Ockleston	
" ...	1911	Lunn, Reginald William	
<i>Akroyd Scholarship</i> ...	1909	Rawling, Arthur	
"	...	Taylor, Ernest	
"	1910	Douglas, Frank	
"	...	Hartley, John Alfred	
"	1911	Gibson, Wilfrid	
"	...	Harrap, Frank Nettleton	
<i>Medical Scholarship</i> ...	1907	Kirk, George William Lister	
"	1908	Knowles, Henry Rylands	
"	1910	Leake, Charles Edward	
"	1911	Dudley, Charles William	

GRADUATES OF THE UNIVERSITY OF LEEDS

(The names of deceased graduates are printed in italics)

Honorary Graduates

Doctor of Laws

- | | | | |
|------|--|------|--|
| 1904 | Lady Frederick Cavendish | 1904 | Rt. Hon. Charles George Milnes Gaskell |
| | <i>Archbishop Maclagan</i> | | Charles Wood |
| | <i>The Duke of Devonshire</i> | 1906 | Lord Wenlock |
| | The Earl of Harewood | | Sir Owen Roberts |
| | Viscount Cross | 1909 | The Archbishop of York |
| | <i>Lord Herries</i> | | Thomas Walter Harding |
| | Lord Allerton | 1910 | The Duke of Devonshire |
| | Rt. Hon. Arthur Herbert | | Rt. Hon. Herbert Henry Asquith, M.P. |
| | Dyke Acland | | The Earl of Crewe, K.G. |
| | Sir Francis Sharp Powell, Bart., M.P. | | The Marquis of Lansdowne, K.G. |
| | <i>Sir John Barran, Bart.</i> | | Rt. Hon. James William Lowther, M.P. |
| | Sir Charles Hubert Hastings Parry, Bart. | | Sir Hugh Bell, Bart. |
| | Sir Alexander Campbell Mackenzie | | General Sir William Gustavus Nicholson, G.C.B. |
| | Sir Charles Villiers Stanford | | Alfred Hopkinson |
| | Sir Edward Elgar | | Arthur Greenhow Lupton |
| | <i>Sir William Bousfield</i> | | |
| | Henry Walford Davies | | |

Doctor of Letters

- | | | | |
|------|-------------------------|------|-------------------------|
| 1904 | Sir Albert Kaye Rollit | 1906 | Sir Charles Holroyd |
| | Alfred Austin | 1907 | The Rev. Robert Collyer |
| | Andrew Martin Fairbairn | 1910 | Francis John Haverfield |
| | Joseph Wright | | Arthur Sidgwick |
| 1906 | The Bishop of Ripon | | |

Doctor of Science

- | | | | |
|------|---|------|--------------------------------------|
| 1904 | <i>The Earl of Rosse.</i> | 1906 | <i>Sir William Henry Perkin</i> |
| | <i>Lord Kelvin</i> | | Sir Thomas Clifford Allbutt |
| | <i>Lord Airedale</i> | | <i>Heinrich Caro.</i> |
| | <i>Sir Isaac Lowthian Bell, Bart.</i> | | Alfred Grandidier |
| | <i>Sir William Henry Broadbent, Bart.</i> | | Albin Haller |
| | Sir Arthur William Rücker | | Edwin Ray Lankester |
| | Tempest Anderson | | Carl Theodor Liebermann |
| | Sir Jonathan Hutchinson | | Carl Alexander von Martius |
| | John Hughlings Jackson | | Paul Pelseneer |
| | Louis Compton Miall | | Heinrich Rubens |
| | Arthur William Mayo Robson | 1909 | Herbert Hall Turner |
| | Thomas Pridgin Teale | | Sir James Crichton-Browne |
| 1904 | Sir Thomas Edward Thorpe | | Sir Ronald Ross, K.C.B. |
| | <i>Claudius Galen Wheelhouse</i> | 1910 | Lord Rayleigh |
| | | | Sir Clements Richard Markham, K.C.B. |
| | | | Sir William Osler, Bart. |

Master of Arts

- | | |
|------|--------------------|
| 1906 | Thomas Percy Sykes |
|------|--------------------|

Graduates

Faculty of Arts (including Commerce and Law)

Master of Arts

1908	Ashburner, Frederick	1907	Kitchener, Ernest Edward
1907	Bibby, Edward Ernest	1907	Landman, Samuel
1911	Birtles, Arthur	1906	McKeand, Maggie Woodrow
1908	Blackburn, Elizabeth Maria	1909	Mallinson, Dorothy
1905	Briggs, Maude (Mrs. Chapman)	1911	Martin, Alice Walford
1908	Butterworth, George William	1908	Matthews, Felix Hackett
1911	Caldwell, Sarah Jane	1910	Maud, Ida Marian
1908	Chapman, Harry Garfield	1907	Molland, Theodora Mary
1909	Cohen, Alexander	1909	Monahan, Alexander James
1907	Conyers, Hilda	1908	Moulden, John William
1911	Cox, Herbert	1910	Murphy, Bertha Mary
1906	Davis, William Hathaway	1907	Naylor, Nellie Noble
1908	Daykin, John Bertram	1907	Neville, Ethel May
1909	Edwards, Maud Mary	1907	North, Fanny Caroline
1910	Fairley, Barker	1910	Peel, Albert
1908	Findlay, George Hindson	1911	Pobjoy, Harold Norman
1908	Findlay, Sarah Kennedy	1905	<i>Robinson, Ethel Margaret</i>
1907	Frank, Sarah	1905	Savage, Hilda
1911	Gendall, Philip Parsons Watkins	1908	Scholes, Katherine Louise
1908	Gill, William Conrad	1905	Scholes, Thomas Wilfrid
1911	Gittleson, John	1909	Simpkiss, Nellie
1910	Gunnell, Doris	1907	Smith, Egerton
1907	Hand, William Thomas	1906	Stables, William Herbert
1907	Hastings, Margaret	1910	Strange, Edward Howard
1909	Hirst, John Crosland	1910	Strong, Robert
1909	Hobson, Elsie Irene	1908	TenBruggenkate, George Herbert
1909	Hodges, Raymond John	1910	Thorp, Hilda
1909	Hogan, Kathleen	1908	Walker, Jessie
1907	Holmes, Carrie	1908	Wallace, Harry Bruce
1911	Howarth, Fred	1906	White, Ethel
1907	Illingworth, Maria Emma (Mrs. Schofield)	1907	Whitehead, Mary
1910	Johnson, Florence Annie	1906	Wilson, Florence
1907	Jowett, Jessie	1908	Wilson, Florence Grey
		1905	Wilson, George William

Bachelor of Arts

1908	Abrahams, Solomon	1910	Bartle, Arthur
1909	Allott, Effie Gwen	1906	Bartle, Ida
1906	Anderson, John	1909	Batchelor, Edith
1909	Anderton, Louisa	1911	Bean, William Harold
1905	Armitage, John Henry	1911	Beevers, Sydney
1906	Armstrong, Lilius Eveline	1908	Bentley, Hannah Grimshaw
1911	Arnold, Edith	1910	Billam, Bertram
1905	Atkinson, Janet	1905	Bishop, Sarah Ellen
1905	Barras, Elsie Clara	1906	Boardman, Ernest Edmund

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| 1911 | Boden, Cecil Arthur | 1911 | Firth, John Rupert |
| 1906 | Bradley, Florence Margaret
(Mrs. Rydall) | 1907 | Flynn, Bridie |
| 1905 | Braithwaite, William Dalston | 1905 | Fox, Arthur Cunliffe |
| 1905 | Brigham, Fanny Muriel | 1905 | Foggitt, Emma |
| 1911 | Broadley, Mary Anne | 1911 | Foggitt, Ida |
| 1907 | Brown, Constance Mabel | 1908 | Frank, Dorothea Ethel |
| 1910 | Brown, Ralph Noel | 1906 | Gale, Florence |
| 1910 | Bucknall, Charles John | 1905 | Garside, Bertha |
| 1905 | Burgess, Lillie | 1905 | Gascoigne, Evelyn May |
| 1905 | Burley, Leo Le Gay | 1911 | Garton, Ida Mary |
| 1910 | Butler, Gloxinia | 1911 | Gibson, George William |
| 1911 | Carter, John Wilfrid | 1908 | Golding, Mary Muriel |
| 1909 | Cawthron, Edwin | 1905 | Gray, Arabella Hyde Janet
Ethel |
| 1905 | Chard, Edith Annie | 1905 | Gray, Catherine Isabella
(Mrs. Welpton) |
| 1911 | Charlton, Henry Buckley | 1910 | Gray, Isabel |
| 1908 | Charlesworth, Alice | 1910 | Greenberg, David |
| 1910 | Claridge, Marjorie Muriel | 1907 | Greening, Edward Baptist |
| 1911 | Clarke, Charles Dougan | 1910 | Groves, Winnifred Halliday |
| 1910 | Coppock, Laura | 1910 | Hale, Agnes |
| 1911 | Courtice, George Robert
Aulton | 1910 | Halliday, Wilfred Joseph |
| 1908 | Cowling, Alice Beatrice | 1909 | Hand, Harry Aram |
| 1909 | Cridland, Dorothy | 1911 | Heaton, Herbert |
| 1910 | Croft, Alice Mary | 1905 | Hepworth, Frank |
| 1911 | Crossland, Elsie | 1905 | Hepworth, Minnie |
| 1905 | Dalton, John Edwin | 1905 | Hield, Esther Margaret |
| 1906 | Darycott, Ernest Jenkinson | 1911 | Hinckley, Philip |
| 1911 | Dawson, Thomas Henry | 1905 | Hirst, Miriam |
| 1909 | Dean, Arthur Ernest | 1905 | Hitcham, Charlotte Elsie |
| 1909 | Dearnley, Charles | 1910 | Hobson, Julia |
| 1905 | Denby, Maurice | 1905 | Holgate, Jane |
| 1905 | Dickinson, Frederick Walter | 1905 | Holmes, Ethel
(Mrs. Chapman) |
| 1910 | Dixon, Annie | 1910 | Hopkins, Eric Arthur |
| 1906 | Dixon, Elizabeth | 1911 | Horne, Mary Osyth |
| 1905 | Dobson, Constance
(Mrs. Wheatley) | 1908 | Horsfall, Jessie Eveline |
| 1907 | Donaldson, Lawrence
Richard Leverton | 1911 | Hosking, John |
| 1910 | Doody, Ellie | 1908 | Howe, Grace Alice |
| 1911 | Dransfield, Henry Ewart
Stanley | 1910 | Hudson, Harry |
| 1905 | Easterfield, Thomas Hill | 1905 | Hudson, Margaret Ellen
(Mrs. Parnaby) |
| 1911 | Elliott, Ruth | 1905 | Hurst, Thomas Ockerby |
| 1905 | Elliott, Spencer Hayward | 1910 | Hyde, Francis Austin |
| 1910 | Ellis, Arthur Harold Carteret | 1906 | Jackson, Mabel |
| 1911 | Ellis, Henry Carl Noel | 1906 | Jackman, Elizabeth |
| 1905 | Fairbrother, Jessie | 1911 | Johnson, Dorothy |
| 1911 | Fairley, Duncan | 1910 | Kirk, Kathleen Hylda |
| 1911 | Fawcitt, Edwin Henry | 1911 | Kirtland, Dorothy Mary |
| 1910 | Findlay, William Gillanders | 1910 | Klamborowski, Wilfred
Stephen |

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|------|------------------------------|------|------------------------------|
| 1910 | Laird, Marjorie Jean | 1911 | Potter, Hilda |
| 1907 | Langstaff, Bilton, B.Sc. | 1911 | Pounder, Benjamin William |
| 1907 | Lea, George William | 1907 | Poynton, Lucy Ellen |
| 1909 | Lee, Catherine | 1905 | Precious, Julia Hopper |
| 1911 | Lee, Harry | 1910 | Quarterman, John Richard |
| 1906 | Lidbetter, James Staples | 1911 | Race, Ida Cunningham |
| 1906 | Linthorpe, Edith Mary | 1910 | Ramsden, Arthur |
| | Elizabeth (Mrs. Rowe) | 1905 | Raven, Hilda Mary |
| 1905 | Lister, Martha | 1910 | Reakes, Gilbert Spofforth |
| 1908 | Lock, John | 1911 | Redfearn, Florence Mary |
| 1909 | Longbottom, Nellie | 1909 | Rennard, Thomas Ambler |
| 1911 | Longstaff, Stella Marguerite | 1910 | Rennie, William Heron |
| 1905 | Maccoby, Sarah Judith | | Maxwell |
| 1911 | Maddock, William | 1911 | Rhodes, Arthur Wellesley |
| 1911 | Major, Irene Carlotta | 1906 | Rider, Martha Hannah |
| 1911 | Martin, Ismae Knox | 1905 | Ridge, William Sheldon |
| 1909 | Martin, Thomas Haigh | 1905 | Robinson, Lilian Dorothea |
| 1909 | Matthews, Basil Wilfrid | 1905 | Rogers, Hannah |
| 1911 | Mawson, Bertha | 1906 | Rogers, Violetta |
| 1910 | Mellors, Clarissa Florence | | (Mrs. Grimshaw) |
| | Horsley | 1911 | Sanderson, Tom |
| 1911 | Miller, Florence Clark | 1905 | Scruton, Harriett Annie |
| 1910 | Miller, Henry Claude | 1906 | Scruton, Kate Ellen |
| 1911 | Miller, Solomon | 1910 | Shaw, George Lawson |
| 1906 | Mitchell, Margaret | 1905 | Sheard, Dora |
| 1905 | Mitchell, Myra | 1905 | Sheard, Mary Beatrice |
| 1911 | Moody, Sydney | 1911 | Sheldon, Clara |
| 1909 | Morrell, Frank | 1911 | Shout, Leonard West |
| 1905 | Mountain, Eliza | 1905 | Skinner, Mabel |
| 1909 | Murphy, Grace Louisa | 1907 | Southern, Alfred |
| 1908 | Naylor, Alice Maude | | Coilingwood |
| 1906 | Nicholson, Ethel | 1910 | Speight, Philip Henry |
| 1910 | Ostrehan, Arthur Clement | 1906 | Spencer, Frances Mary Elvira |
| | Henry | 1910 | Spruce, Gladys |
| 1907 | Outram, Edith May | 1910 | Stainsby, George William |
| 1905 | Owen, Florence | 1907 | Storey-Bates, William |
| 1911 | Papworth, Harold Charles | | Edward |
| 1911 | Parker, Frank | 1910 | Stradling, Ethel Milnes |
| 1911 | Peacey, Basil William | 1910 | Strothard, Hubert Turner |
| 1908 | Pearson, Eunice | 1910 | Taylor, William Alexander |
| 1906 | Perfect, Douglas | 1911 | Tomlinson, John |
| 1908 | Perkins, Sarah Elizabeth | | Lansdowne |
| 1910 | Phillips, Dorothy | 1906 | Townsend, Florence Emma |
| 1911 | Phillips, Samuel | 1905 | Turner, Harriet Marie |
| 1910 | Pickering, Harry | 1911 | Varley, Annie |
| 1910 | Pilling, James Arthur | 1905 | Walker, Ada |
| 1911 | Pickett, Bertram Arthur | 1911 | Walker, Algernon Stanley |
| 1911 | Pollard, Mabel | 1905 | Walker, Julia Beatrice |
| 1905 | Porritt, Florence Mary | 1911 | Wallace, Dorothy Kate |
| | (Mrs. Bennett) | 1909 | Ward, Alice Rose |

1906	Warnes, Sarah Catherine	1905	Wilson, Selina Ethel
1911	Warren, Albert Edmund	1908	Winter, John Edgar
1905	Waterhouse, Osborn	1910	Witty, John Robert
1905	Watson, George Alston	1905	Wood, Jessie Graham
1907	Weatherell, Thomas Bertram	1910	Worsnop, Edgar
1911	West, Evangeline	1909	Wortz, Frederick Robert
1906	White, Arthur Ernest	1911	Wright, Bertha Helen
1910	Wilson, Muriel Margaret	1905	Wrigley, Isaac

Bachelor of Laws

1908	Beecroft, Philip Beilby	1906	McConnell, John William
1907	Brayshay, Stanley, B.A.	1908	Maude, Arthur Percy Lees
1909	Croft, Thomas Lister	1911	Milner, James
1909	Daighes, Salom	1910	Morgan, Richard Felix
1909	Fisher, Arthur Samuel	1905	Robson, William Newby
1908	Gundill, Edward Norman	1906	Scott, Hubert Edward
1910	Harrison, William	1910	Scriven, Charles
1911	Ineson, Donald Gordon	1905	Sykes, James
1910	Knowles, Geoffrey	1906	Wade, James Mervyn
1905	Lee, Edmund		

Faculties of Science and Technology

Doctor of Science

1910	Briggs, Samuel Henry	1905	Frankland, John Naylor
	Clifford	1905	Ingle, Harry
1909	Dakin, Henry Drysdale	1905	Mann, Harold Hart
1907	Dawson, Harry Medforth	1910	Raper, Henry Stanley
1907	Denison, Robert Beckett	1907	Standing, Herbert Fox
1905	Dwerryhouse, Arthur Richard	1905	Varley, William Mansergh

Master of Science

1905	Agar, Herbert William	1907	Calam, Harold
1905	Andrews, William Allen	1905	Calvert, Harry Thornton
1911	Ark, Harry	1906	Chapman, Thomas William
1910	Armin, Edwin Bates	1911	Charlesworth, John Kaye
1908	Ashby, William Ewart	1905	Cooper, Albert Henry
1906	Barker, Aldred Farrer	1907	Cooper, William Arthur
1911	Bearder, Ernest Arthur	1905	Copley, Frederick
1905	Beaumont, Roberts	1906	Coulson, Alfred
1906	Beeley, Arthur	1911	Couper, George Augustus
1907	Bennett, Hugh Garner	1911	Das, Biraj Mohan
1905	Bevan-Lewis, William	1907	Davies, Arthur Hugh
1908	Bibby, Joseph Richard	1905	Dent, Frankland
1909	Blockey, John Reginald	1911	Dixon, Frank Metcalfe
1906	Bothamley, Charles Herbert	1910	Dudley, Harold Ward
1906	Brayshay, Maurice William	1908	Dudley, James
1908	Brittain, Charles Edward, M.Sc., Vict.	1905	Edwards, Ernest John
1911	Brown, Thomas	1905	Findlay, Mary Grace
1905	Brown, Walter Henry	1908	Frank, George Herbert
		1905	Fry, George Cecil

1906	Gardner, Walter Myers	1905	Norminton, Harold
1910	Gaut, Robert Charles	1910	Omar, Abdel Mageed
1907	Gaunt, Rufus	1908	Outram, Nora Aline Jane
1905	Gawler, Robert	1910	Paniker, Manakath
1911	Gilchrist, David		Allampatath Ramunni
1905	Goodman, John	1905	Parr, George Dudley
1907	Goodson, Ethel Elizabeth (Mrs. Osborne)		Aspinall
1905	Grant, Charles Henry	1911	Parsons, Ernest
1905	Green, Arthur George	1911	Powis, Frank
1911	Guy, Ernest	1905	Procter, Henry Richardson
1910	Haigh, John Henry	1911	Rankin, William Mann
1905	Hammerton, Jonas	1911	Rawling, Francis George
1905	Hefford, Charles Nelson	1907	Richardson, John Stocks
1911	Hill, James	1910	Sen, Rajendra Nath
1910	Hinckley, Arthur	1911	Seymour-Jones, Arnold
1907	Hoddsman, Henry James	1908	Shuttleworth, Newton
1907	Horsfall, Ronald Smith	1908	Sinson, Israel Lewis
1905	Hummel, John James	1905	Skirrow, Frederick William
1910	Hurst, Frank	1906	Slater, John Henry
1908	Jackson, Colin Gyrth	1907	Smailes, Alan
1905	Jackson, Harry Percival	1910	Steinthal, Paul Telford
1909	Jenkins, Gilbert Ramsden	1908	Sykes, Albert Howarth
1907	Jordan, Albert	1905	Thompson, John Thomas
1905	Jowett, Albert	1907	Thorp, George
1905	Kendall, Percy Fry	1911	Thornton, Harold
1907	King, Charles Arthur	1907	Townsend, Robert
1905	King, Herbert	1907	Turner, Florence Mary
1911	King, William Norman		Beatrice (Mrs. Thomson)
1905	Kirby, Frederick Oscar	1906	Unwin, Ernest Ewart
1909	Leslie, May Sybil	1911	Varley, Gilbert
1907	Lister, Mary Florence Grace (Mrs. Appleton)	1911	Walker, Emily Farrington
1905	Littlewood, Harry	1905	Walker, Henry Secker
1909	Marshall, Francis	1910	Ward, Herbert Wainwright
1908	McGill, Ernest Arthur	1909	Webster, Herbert William
1910	Mitchell, John Arnold	1910	Westerman, Mabel
1907	Morrison, James Alexander Shepherd	1909	Whitaker, Herbert
1905	Motley, Parker	1911	White, Robert George
1910	Mountain, Frank	1905	Whiteley, Charles Edward
		1911	Wood, George
		1909	Woodhead, Arthur Edmund
		1905	Wright, Charles James

Bachelor of Science

1905	Ackroyd, John Prest	1905	Appleyard, John Henry Ross
1909	Addison, Herbert	1905	Armes, Henry Percy
1911	Airey, Cecil Philip	1906	Armes, Jane Prue
1911	Alderson, Arthur Howard	1908	Armitage, Harry
1905	Allen, Lilian	1909	Arnold, Joseph Sykes
1906	Anson, Emily	1911	Atkin, William Rearden
1909	Appleyard, Ada Evelyn	1907	Baddiley, James
1910	Appleyard, Alfred	1908	Bailey, Annie Rosa

1910	Bainbridge, James Scott	1906	Crowther, Herbert
1911	Bales, Sidney Hartley	1908	Crowther, Philip Townsend
1909	Bannister, Albert	1907	Crowther, William Edmund
1908	Barker, Christopher James	1909	Cundall, Leonard Bertram
1905	Barlow, Percival Smith	1905	Cunningham, Jean Orme
1905	Barton, Edith Beatrice	1911	Curtis, Horace
1910	Bayley, John Henry Stewart	1907	Davies, Hamilton
1909	Beckwith, Kathleen Mary	1908	Davies, Henry
1910	Bell, Alfred Glaize	1905	Davies, Ivor Parry
1907	Bell, Herbert Nutter	1910	Davison, Irene Edith
1909	Bendrey, Hilda	1911	Davison, Florence Mary
1907	Birkhead, Florence Ethel	1910	Dawson, John Barkas
1911	Blackburn, Clarice Lawton	1905	Denbigh, George James
1910	Bond, James Ryding	1905	Dickinson, Cyril
1905	Booth, Meyrick	1906	Draper, Alick Darby
1907	Bowes, George Robert	1910	Duchesne, Henry
1905	Boyd, Simeon	1906	Dudley, Nora
1910	Boyle, Henry Kirk	1910	Duffin, Joseph Francis
1911	Brekke, Lorentz Oliver	1910	Dugdale, Norris
1905	Brier, Albert	1910	Earle, Frank Maynard
1905	Briggs, William, M.A., LL.D., Cantab.	1908	Ebbage, Edith Mabel
1911	Bright, Alfred	1906	Elliott, Bertram Warren
1905	Broadhead, James Arthur	1905	Ellis, James John
1906	Broadley, William	1906	Ellis, John Newman
1907	Brook, Annie	1905	Everett, James Herbert
1905	Brook, Harry	1911	Farnish, John
1905	Bruce, Mary Walbrand (Mrs. McCrae)	1905	Fearnley, Lewis William Knapton
1905	Bulman, John Arthur	1910	Feather, Myra
1905	Burgess, William Ernest	1906	Field, Margaret
1908	Burras, Catherine	1910	Fielden, Harold
1910	Callender, George Dougal	1905	Finn, Cornelius Philip
1907	Cameron, James Neild	1907	Fletcher, Alfred Edgar
1906	Carlton, George Westerdale	1905	Forsyth, Christina Brand
1909	Carter, Frederick Edward	1909	Fort, Morris
1911	Chapman, Sarah Elizabeth	1908	Fottrell, Edward Joseph
1906	Claridge, Margaret Elsie	1908	Gaunt, Louis Henry Armi- stead
1905	Cobb, John William	1911	Gerard, Inglis Joseph
1910	Cockburn, Edward Colin	1911	Glick, Nathan Bernard
1910	Colbert, Thomas Henry	1905	Goddard, Clara Annie
1911	Coldbeck, Malcolm Stanley	1908	Goddard, Edith Eleanor
1909	Coope, Hilda	1908	Goddard, Ethel Mary
1906	Cooper, John George	1908	Goodson, Arthur Godfrey
1905	Coxon, Lawrence Adams	1905	Gomersall, Ernest Edward
1905	Craig, David	1910	Gould, Percy
1905	Crawshaw, Annie	1910	Graham, Hugh Colborne
1909	Crawshaw, Nellie	1905	Grant, Frederick Ernest
1909	Crosby, Berkley Cecil	1905	Greenwood, Arthur
1905	Crosfll, John	1909	Greenwood, Edward Joseph
1906	Crosland, Percy Field		Bernal
1907	Cross, William Ernest	1907	Gregg, Herbert Atkinson

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|------|---|------|---|
| 1905 | Gregory, Frederick Maurice | 1907 | Lacy, Arthur |
| 1911 | Gregson, Annie | 1905 | Langstaff, Bilton |
| 1909 | Grocock, Helena | 1907 | Law, Marion Rosalind |
| 1905 | Gunter, John Henry | 1910 | Lee, Elsie |
| 1905 | Haler, Percy James | 1911 | Lishman, Arthur Vincent |
| 1910 | Hall, William | 1905 | Livesey, Charles Edwin |
| 1911 | Hamer, Ernest Fenton | | Leonard |
| 1905 | Hampshire, Florence Elizabeth | 1905 | Lodge, Harry Livingston |
| 1906 | Hansell, John Bentley | 1905 | Lord, William Ernest |
| 1905 | Harding, Oswald Jackson | 1905 | Lowson, William |
| 1905 | Hardy, Joseph | 1907 | Loyd, Jessie |
| 1910 | Hardisty, Victoria Lavinia | 1905 | McCandlish, Douglas |
| 1907 | Hargreaves, Edith | 1907 | Maddison, Wilfred Guy |
| 1905 | Hartley, Percival | 1911 | Makinson, Nora Isabel |
| 1908 | Haworth, Richard | 1905 | Manasseh, Antonius Joseph |
| 1905 | Hefford, George Winfield | 1910 | Mann, Clarissa |
| 1905 | Heptinstall, Richard | 1908 | Mann, James William |
| 1910 | Hewerdine, Harry | 1909 | Margetts, Percy Alexander |
| 1911 | Hickson, Bernard | 1905 | Marriner, William Wright |
| 1905 | Hield, Mary Elsie | 1905 | Marsden, Ernest Vane |
| 1905 | Hilary, Daisy | 1909 | Marsh, Frank Salton |
| 1905 | Hirst, Henry Reginald | 1905 | Marshall, Herbert |
| 1905 | Hobart, John William | 1905 | Marshall, Joseph |
| 1905 | Hobley, Robert Arthur | 1910 | Mason, George Samuel |
| 1911 | Hole, Herbert Wray | 1909 | Mawson, John Halliwell |
| 1906 | Holgate, Edward | 1905 | Mellor, Fred |
| 1909 | Holroyd, Eleanor Mary | 1911 | Midgley, Michael Mortimer |
| 1911 | Hoppenstadt, Isaac | 1905 | Morris, Florence Annie |
| 1911 | Houldsworth, Hubert Stanley | 1905 | Morton, Dora |
| 1905 | Hummel, Alfred Roland Ure | 1910 | Morton, Gordon |
| 1907 | Hummel, Ernest Lonsdale | 1905 | Moss, Charles Edward |
| 1905 | Hunt, Francis William | 1908 | Mulcahy, Julia |
| 1905 | Hunter, Herbert | 1905 | Murphy, Harold Newton |
| 1905 | Hurtley, William Holdsworth | 1906 | Myers, Mary Alice |
| 1905 | Hutchinson, Florrie | 1905 | Nicholls, Percy |
| 1905 | Hutton, Wilfred | 1908 | Normington, May |
| 1905 | Ingle, Herbert | 1911 | North, Neville Marriott |
| 1910 | Ismail, Mohammed | 1905 | Oddy, Annie Maude |
| 1905 | Jackson, Arthur | 1905 | Owen, Samuel Joseph |
| 1911 | Jackson, Percy Gladstone | 1905 | Peacock, Arthur |
| 1910 | Johnson, Charles Lester | 1906 | Pearce, Cyril Thomas |
| 1905 | Johnson, John William Haigh | 1911 | Pearson, William |
| 1905 | Kay, Douglas John | 1905 | Phillipson, Abram |
| 1905 | Kaye, Edward Percy | 1908 | Platts, Matthew George |
| 1910 | Kench, Henry | 1905 | Pocklington, Henry Cabourn, B.A., Cantab., D.Sc., Lond. |
| 1911 | Kendall, Percy Fry | 1910 | Priestley, Edmund |
| 1905 | Knowles, George William, M.A., Royal Univ., Irel. | 1906 | Procter, Herbert |
| | | 1907 | Raistrick, John William |
| | | 1905 | Rayner, Herbert Emmett |
| | | 1908 | Rhodes, Norman |

1910	Richardson, Mark Alexander	1907	Turner, Frederick William
1907	Rider, Charles Matthew	1908	Tunncliffe, Eveline Mary
1908	Riley, Frank	1908	Vernon, Edgar
1909	Roberts, Augustus Alphonso	1908	Vince, Eva Mary
1906	Ross, William Oatey	1905	Wagstaffe, George William
1911	Rowe, Frederick Maurice	1905	Waite, Joseph Harold
1906	Rydall, George Herbert	1905	Walbank, Wilfrid Stephen
1905	Scholefield, Fred	1910	Walker, James
1906	Schmitz, Herman Emil	1905	Walker, Joshua
1905	Scouller, Walter Daly	1908	Walker, Leonard
1905	Scruton, Harold Adams	1906	Ward, Margaret Naomi (Mrs. Lasker)
1911	Senior, George	1906	Warin, Phillipson
1905	Shacksnovis, Reuben	1905	Warmington, Edith (Mrs. Warmington)
1905	Shorter, Sydney Alfred	1908	Watson, James Arthur
1911	Simpson, Thomas Cooper	1908	Watts, Frank Maxfield
1905	Skirrow, Benjamin Beck	1908	West, William Ernest
1908	Smith, Bracewell	1905	Whaley, James
1905	Smith, Henry Archbold	1910	Whalley, Lewis
1905	Sowerbutts, Edith Utley	1910	Wheatley, Robert
1905	Standing, Edwin Mortimer	1905	White, William Henry
1905	Stead, Frank Cawthron	1905	Whitehead, Pollie
1905	Stewart, Tom	1911	Whiteley, Ada
1911	Stillwell, Samuel Thomas Cryer	1905	Whittaker, Croyden Meredith
1905	Stocks, Arthur	1909	Wilby, Arthur Edwin
1905	Studley, Charles Wilcock	1907	Wilkinson, Eltoft Wray
1907	Sutcliffe, James	1905	Wilson, Frances Annie
1911	Taylor, Arthur	1911	Wilson, John Harry
1905	Taylor, Francis	1905	Wise, Julian Stanton
1911	Thompson, Frederick Charles	1910	Wood, Louis Albert
1905	Thompson, George Robert	1905	Wood, Margaret (Mrs. Priestman)
1905	Thompson, Hubert	1910	Woodhead, Gertrude Ramsden
1909	Thornton, Edwin	1911	Woodman, Herbert Ernest
1910	Thornton, Harold	1909	Woodmansey, Arnold
1905	Thorp, Samuel	1910	Woodward, Arthur
1905	Thorp, Walter	1911	Wright, Charles
1905	Tiffany, Frank	1910	Wrigley, Florence Mary
1905	Tiffany, Joseph Edgar	1908	Zelensky, Lily Aurelia
1910	Tillott, Harry	1905	Zortman, Israel Hyman
1910	Tingle, Robert Lacey Aubrey		
1907	Tomlinson, John Arthur		
1906	Tomlinson, Thomas Fowler		

Faculty of Medicine

Doctor of Medicine

1906	Anderson, William Jenkins Webb	1905	Stoney, William Walter, M.D., Vict.
1910	Gloyne, Stephen Roodhouse	1903	Turton, Edward
1905	Parkinson, Arthur Stanley	1910	Vallow, Harold

Master of Surgery

1910	Gough, Alfred
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Bachelor of Medicine and Bachelor of Surgery

1911	Acomb, John	1906	McKane, William Oliphant
1905	Bailey, Fred	1905	Mackenzie, Alexander, M.A., Cantab.
1907	Bibby, James Paley	1905	Macvean, Herbert James
1905	Birtwhistle, Frederick Percy Hewetson	1905	Maffin, Harry
1905	Boyle, Alan	1905	Manknell, Arthur
1905	Braithwaite, Leonard Ralph	1905	Matthews, Crawford Tait
1905	Brierley, Wilfred Edward	1908	Mitchell, Guy Annesley Carter
1905	Broadley, John	1905	Moorhouse, Charles Herbert
1911	Brown, Charles Suffield	1905	Morton, Armitage
1905	Brown, Henry	1910	Musson, John Percy
1910	Brown, John Perrin	1908	Nichol, George Colin Henderson
1907	Carter, Godfrey	1906	Radcliffe, Roland Brooke
1906	Crawford, James Stirling	1910	Raper, Henry Stanley
1905	Cundall, Edward	1906	Reed, Ernest William
1906	Daly, Ramsay Lamy	1905	Reed, John Arthur
1905	Darlow, Francis	1911	Riley, Arthur
1905	Deane, Arthur Maslen	1905	Seaton, Douglas
1907	Dibb, William Land	1910	Sharpe, Claudius Galen Kaye
1905	Dixon, Robert Garside	1909	Shaw, William
1906	Dobson, Francis George	1910	Slocombe, Bernard Atkinson
1905	Eames, Charles William	1905	Smailes, William Herbert
1905	Fearnley, Harold	1905	Smith, Charles Nixon
1911	Fisher, John Barugh	1909	Smith, Reginald Eccles
1906	Flint, Ethelbert Rest	1905	Spink, Ernest William, M.D., Lond.
1909	Flint, Horace Lance	1905	Stansfield, Harry
1908	Frobisher, James Hebble- thwaite Martin	1910	Stockdale, George Vincent
1905	Greaves, Frederick William Marshall	1905	Stott, William Atkinson
1905	Greenwood, Charles Henry	1905	Suggit, Bertram
1905	Greenwood, Henry Harold	1909	Thoseby, John Norman Lonsdale
1905	Greenwood, William Osborne	1905	Todd, Aldred Bertram Slingsby
1906	Hackworth, Vivian Cuthbert	1905	Tomlin, Herbert
1907	Hardy, Digby Wrangham	1906	Trumper, Oscar Bagster
1910	Hart, Walter Sidney	1910	Twist, Norman Stuart
1905	Hayes, Frederick William	1906	Walker, Albert Latimer
1909	Hepworth, Sydney Milverton	1905	Walker, Melville George Leslie
1910	Hessel, William Thomas	1911	Walker, Thomas Lockwood
1905	Hopton, Ralph, M.D., Lond.	1905	Wells, George Lee
1906	Hummel, John James, M.Sc.	1905	Whalley, Frederick
1905	Hustler, George Herbert	1906	Whitehead, Thomas
1910	Ingham, Harold Norman	1905	Wilks, Stephen Longmore Butterworth, M.D., Lond.
1905	Kellett, Alfred Featherstone	1905	Willans, Charles Rudolph
1906	Kendall, Frank Edward	1906	Williamson, Joshua
1905	Ladell, Robert George Macdonald		
1905	Legge, James Huntly		
1905	Lister, Thomas Edmund		

DIPLOMAS (UNIVERSITY OF LEEDS)**Education**

- 1905 Barton, Edith Beatrice
1906 Conyers, Hilda
Edwards, Maud Mary
Owen, Florence
Robinson, Lilian Dorothea
1907 Claridge, Margaret Elsie
Dunlop, Marian Vaughan
Illingworth, Maria Emma
Myers, Mary Alice
Outram, Nora Aline Jane
Whitehead, Mary
1908 Flynn, Bridie
North, Fanny Caroline
Thomas, Sydney Hardisty
Walker, Jessie
1909 Bailey, Annie Rosa
Frank, Dorothea Ethel
Golding, Mary Muriel
Hirst, John Crosland
Mallinson, Dorothy
Normington, May
Simpkiss, Nellie
Zelensky, Lily Aurelia
1910 Bendrey, Hilda
Dean, Arthur Ernest
Hobson, Elsie Irene
Lawson, Leah Gardner
Maud, Ida Marian
Perham, Ethel Kate
Ward, Herbert Wainwright
1911 Butler, Gloxinia
Caldwell, Sarah Jane
Phillips, Dorothy
Wilson, Muriel Margaret

Commerce

- 1904 Whiting, John Roland
1906 Potts, Roland Beeton
1910 Barringer, Ronald

Teachers of French

- 1907 Crowther, Jane Elizabeth
Woodman, Hilda
1908 Hawkes, Geoffrey
Holdsworth, Ethel
Lavington, Mabel Jessie
Lord, Mabel Alice
Poustie, Jessie
Robinson, Joseph

Diplomas

- Spink, Gertrude Annie
 Warren, Frederick
 1909 Abbott, Constance Maude
 Best, Winifred Jane
 Cooke, Sarah Grace
 Frank, Dorothea Ethel
 Hollom, Edith Gertrude
 Ife, Mary Eleanor
 Lingard, Jonas Hartley
 Walker, Theodora Minnie Hirst
 1910 Abbott, Clifford Hewson
 Copland, Marjorie Sempill
 Cromie, Eily Kathleen
 1911 Hutchinson, Herbert Stafford
 Lochore, Beatrice
 Riley, Sarah Annie
 Storr-Best, Gertrude Morfydd
 Ward, Edith
 Young, Constance Evelyn

Teachers of German

- 1907 Oates, Ethel Marian
 1908 Ife, Mary Eleanor
 1910 Boardman, Ernest Edmund
 1911 Edwards, Henry Fred Edgecumbe
 Lingard, Jonas Hartley
 Palmer, Margaret Elizabeth

Mechanical Engineering

- 1905 Wharton, John
 1909 Tsing Ming-Poh
 1911 Farnell, Maurice

Civil Engineering

- 1908 Bauer, Noah
 1909 Hsu, Hoon Yu

Electrical Engineering

- 1904 Foulds, John Rhodes
 1905 Chippindale, Isaac Murray
 Hamilton, James
 1906 Richardson, Thomas Brook
 1909 Baldwin, Ewart Vernon
 Humphreys, Percy Harry Illingworth
 Peam, Ferdinand
 Pedley, Francis Leonard
 Sheard, Percy

Coal Mining

- 1904 Frazer, Edgar Hamilton
 Paterson, George Stewart
 Willey, Edward
 1908 Holden, Athole Frederick.

- 1910 Kay, Stanley Burnett
Mawson, Frank

Fuel and Metallurgy

- 1911 Walker, James

Gas Engineering

- 1911 Armstrong, Percy

Textile Industries

- 1909 Cockcroft, Ernest Edward
Chattapadhaya, Nolini Mohan
1910 Lo Ting Yu
Meirielles, Joas Magalhaes de Azevedo
Wong, Ka Luen
Kelly, John

Dyeing

- 1906 Sen, Gopal Chundra
1907 Dawson, Walter
Marchant, Ernest Norman
1908 King, Percival Edgar
1909 Sen, Rajendra Nath
1910 Bearder, Ernest Arthur
Viccagee, Sohrab Franjee
1911 Rowe, Frederick Maurice

Leather Manufacture

- 1904 Casaburi, Vittorio
Doikawa, Saichiro
Prévôt, Jules Mathieu
1906 Feldheim, Herman Dietrich Ernst
Mende, Stephan
1907 Blyth, James Rupert
Hardie, Alexander Greenhorn
Morrison, James Alexander Shepherd
1908 Fenner, Joseph Henry
1909 Bose, Surendra Nath
Ellis, Leonard Eric Kensett
Paniker, Manakath Allampatath Ramunni
Sen, Atul Chandra
Seymour-Jones, Arnold
1910 Callender, George Dougal
Coulthard, Ernest
Ismail, Mohammed
1911 Dobson, Joseph Stanley
Rashid, Mohammed Abdur

Public Health

- 1906 Halliwell, Thomas Oates
1907 Scatterty, William
Sharpe, Frederick Augustus
Mason, Harry

- 1909 Carnes, William
 Crake, Herbert Milverton
 1910 Greaves, Frederick William Marshall
 Ashmore, Patricius Wallace
 Hitchins, William Mayne
 Mason, John Harold
 1911 Smith, Charles Nixon

Dental Surgery

- 1909 Salt, Charles Frederick
 Wilson, Francis Cecil
 1910 Bentley, Harold Rawbert
 McKay, George Simpson
 Howden, Ernest

**UNIVERSITY OF LEEDS
 FELLOWS, SCHOLARS, AND PRIZEMEN**

(See pages 527-564.)

**VICTORIA UNIVERSITY
 FELLOWS, SCHOLARS, AND PRIZEMEN
 (YORKSHIRE COLLEGE STUDENTS)**

University Fellowships

- | | | |
|------|--------------------------|----------------|
| 1899 | Stuart, Wilson | <i>Arts</i> |
| 1900 | Stuart, Wilson | <i>Arts</i> |
| 1901 | Whiteley, Charles Edward | <i>Science</i> |

University Scholarships

- | | | |
|-------------------|-----------------------------|--------------------|
| 1898 | Stuart, Wilson | <i>Philosophy</i> |
| 1899 | Cooper, Albert Henry | <i>Physics</i> |
| | Dwerryhouse, Arthur Richard | <i>Geology</i> |
| | Varley, William Mansergh | <i>Physics</i> |
| 1900 | Braithwaite, Leonard Ralph | <i>Medicine</i> |
| | Denison, Robert Beckett | <i>Chemistry</i> |
| 1902 | Stelfox, Sydney Herbert | <i>Engineering</i> |
| | Stoddard, Arthur Askwith | <i>Engineering</i> |
| 1903 | Raper, Henry Stanley | <i>Chemistry</i> |
| 1904 ¹ | Waterhouse, Osborn | <i>English</i> |
| | Zortman, Israel Hyman | <i>Physics</i> |

Derby Scholarship

- 1899 Frankland, John Naylor

John Bright Scholarship

- 1897 Stuart, Wilson
 1899 Hartley, Harold (prizeman)
 1906 ¹Waterhouse, Osborn

¹ Victoria University of Manchester.

Mercer Scholarship

1901 Dakin, Henry Drysdale

Leblanc Prize

1891 Ingle, Harry

1892 Mann, Harold Hart

1898 Skirrow, Frederick William

UNIVERSITY OF LEEDS HONOURS SCHOOLS

Classics

- 1906 *Class 1* Bibby, Edward Ernest
 „ „ Butterworth, George William
Class 2 Ashburner, Frederick
 „ „ Matthews, Felix Hackett
 „ „ TenBruggenkate, George Herbert
 1907 *Class 2* Hodges, Raymond John
 1908 *Class 1* Hirst, John Crosland
Class 2 Mallinson, Dorothy
 1909 *Class 2* Dearnley, Charles
 1910 *Class 2* Croft, Alice Mary
 „ „ Findlay, William Gillanders
 „ „ Pilling, James Arthur
 „ „ Pobjoy, Harold Norman
 „ „ Reakes, Gilbert Spofforth
Class 3 Brown, Ralph Noel
 1911 *Class 2* Clarke, Charles Dougan
 „ „ Parker, Frank
 „ „ Walker, Algernon Stanley

English Language and Literature

- 1905 *Class 1* Gascoigne, Evelyn May
 „ „ Holmes, Carrie
Class 2 Conyers, Hilda
 1907 *Class 1* Walker, Jessie
Class 2 Moulden, John William
 1908 *Class 1* Hogan, Kathleen
 1910 *Class 1* Speight, Philip Henry
Class 2 Mellors, Clarissa Florence Horsley
 „ „ Pickering, Harry
Class 3 Coppock, Laura
 „ „ Strothard, Hubert Turner
 1911 *Class 1* Charlton, Henry Buckley
 „ „ Fairley, Duncan
 „ „ Major, Irene Carlotta
 „ „ Phillips, Samuel
Class 2 Bean, William Harold
 „ „ Dawson, Thomas Henry
 „ „ Foggitt, Ida
 „ „ Wright, Bertha Helen

Modern Languages and Literatures

1905	Class 1	Edwards, Maud Mary
	"	Gunnell, Doris
1906	Class 2	Hastings, Margaret
	"	Illingworth, Maria Emma
	Class 3	Whitehead, Mary
1907	Class 1	Fairley, Barker ¹
	"	Thorp, Hilda ²
1908	Class 1	Cohen, Alexander
	"	Murphy, Bertha Mary
1909	Class 1	Longbottom, Nellie ²
	Class 2	Cridland, Dorothy
	Class 3	Batchelor, Ethel
1910	Class 1	Hobson, Julia ²
	"	Kirk, Kathleen Hylda
	"	Stradling, Ethel Milnes
	Class 2	Butler, Gloxinia
	"	Claridge, Marjorie Muriel
	"	Phillips, Dorothy
	"	Ramsden, Arthur
	"	Spruce, Gladys
	"	Wilson, Muriel Margaret
	"	Worsnop, Edgar
	Class 3	Groves, Winnifred Halliday
	"	Laird, Marjorie Jean
1911	Class 1	Carter, John Wilfrid
	Class 2	Elliott, Ruth
	"	Kirtland, Dorothy Mary

History

1906	Class 2	Wilson, Florence Grey
1907	Class 1	Findlay, Sarah Kennedy
	Class 2	Gill, William Conrad
1908	Class 1	Simpkiss, Nellie
	Class 3	Hobson, Elsie Irene
1909	Class 1	Dean, Arthur Ernest
	"	Peel, Albert
	"	Wortz, Frederick Robert
	Class 2	Cawthron, Edwin
	"	Gendall, Philip Parsons Watkins
	"	Morrell, Frank
	Class 3	Hand, Harry Aram
1910	Class 1	Birtles, Arthur
	"	Caldwell, Sarah Jane
	Class 2	Cox, Herbert
	"	Ellis, Arthur Harold Carteret
	"	Taylor, William Alexander

¹ Distinguished in French and German.² Distinguished in German.

	<i>Class 3</i>	Hopkins, Eric Arthur
	"	Klamborowski, Wilfrid Stephen
	"	Stainsby, George William
1911	<i>Class 1</i>	Firth, John Rupert
	"	Garton, Ida Mary
	"	Heaton, Herbert
	<i>Class 2</i>	Hinckley, Philip
	"	Moody, Sydney
	"	Tomlinson, John Lansdowne
	"	Wallace, Dorothy Kate
	"	Warren, Albert Edmund
	<i>Class 3</i>	Miller, Florence Clark

Philosophy

1908	<i>Class 1</i>	Strange, Edward Howard
1911	<i>Class 2</i>	Papworth, Harold Charles
	"	Peacey, Basil William

Mathematics

1905	<i>Class 2</i>	Phillipson, Abram
1907	<i>Class 2</i>	Smailes, Alan
	<i>Class 3</i>	Ashby, William Ewart
1909	<i>Class 1</i>	Marshall, Francis

Physics

1905	<i>Class 1</i>	Mellor, Fred
1907	<i>Class 1</i>	Sykes, Albert Howarth
	"	Townsend, Robert
1908	<i>Class 1</i>	Wetson, James Arthur
	<i>Class 2</i>	Jenkins, Gilbert Ramsden
1909	<i>Class 3</i>	Ward, Herbert Wainwright
	"	Wood, George
1910	<i>Class 1</i>	Duffin, Joseph Francis
	<i>Class 3</i>	Dixon, Frank Metcalfe
1911	<i>Class 1</i>	Houldsworth, Hubert Stanley

Chemistry

1905	<i>Class 1</i>	Armes, Henry Percy
	"	Bennett, Hugh Garner
	"	Davies, Arthur Hugh
	<i>Class 2</i>	Crosland, Percy Field
	<i>Class 3</i>	Booth, Meyrick
	"	McCandlish, Douglas
	"	Morrison, James Alexander Shepherd
1906	<i>Class 1</i>	Hodsman, Henry James
	<i>Class 2</i>	Horsfall, Ronald Smith
	"	King, Charles Arthur
1907	<i>Class 1</i>	Cross, William Ernest
	"	Davies, Hamilton
	<i>Class 2</i>	Jackson, Colin Gyrth

1908	Class 1	Blockey, John Reginald
	"	Leslie, May Sybil
	"	Riley, Frank
	Class 2	Sinson, Israel Lewis
1909	Class 1	Dudley, Harold Ward
	"	Webster, Herbert William
	Class 2	Carter, Frederick Edward
	Class 3	Hurst, Frank
	"	Thornton, Edwin
	"	Whitaker, Herbert
1910	Class 1	Bainbridge, James Scott
	"	Hill, James
	"	Johnson, Charles Lester
	"	Powis, Frank
1910	Class 2	Appleyard, Alfred
	"	Thornton, Harold
	"	Wheatley, Robert
	"	Wood, Louis Albert
	Class 3	Fielden, Harold
1911	Class 1	Atkin, William Rearden
	"	Glick, Nathan Bernard
	"	Woodman, Herbert Ernest
	Class 2	Rawling, Francis George
	Class 3	Bales, Sidney Hartley
	"	Thompson, Frederick Charles

Botany

1905	Class 2	Turner, Florence Mary Beatrice
1909	Class 2	Westerman, Mabel
1910	Class 2	Walker, Emily Farrington

Physiology

1905	Class 1	Lord, William Ernest
1907	Class 1	Crowther, William Edmund

Geology

1906	Class 1	Jordan, Albert
1909	Class 2	Parsons, Ernest
	Class 3	Haigh, John Henry
1910	Class 3	Guy, Ernest
	"	King, William Norman
1911	Class 1	Chapman, Sarah Elizabeth

Engineering

1905	Class 1	Gregory, Frederick Maurice
	Class 3	Owen, Samuel Joseph
1906	Class 1	Holgate, Edward
	"	Richardson, John Stocks
1907	Class 1	McGill, Ernest Arthur
1908	Class 1	Barker, Christopher James

- 1909 *Class 1* Addison, Herbert
 " Mawson, John Halliwell
 " Omar, Abdel Mageed
 1910 *Class 1* Varley, Gilbert
 Class 2 Couper, George Augustus
 Class 3 Boyle, Henry Kirk
 1911 *Class 1* Stillwell, Samuel Thomas Cryer
 Class 3 Gerard, Inglis Joseph

Electrical Engineering

- 1907 *Class 1* Shuttleworth, Newton
 Class 2 Wilkinson, Eltoft Wray
 1909 *Class 1* Bannister, Albert
 Class 2 Greenwood, Edward Joseph Bernal

Mining

- 1909 *Class 2* Gilchrist, David

Colour Chemistry and Dyeing.

- 1907 *Class 1* Baddiley, James
 Class 2 Frank, George Herbert
 1908 *Class 1* Rhodes, Norman
 " Woodhead, Arthur Edmund
 1910 *Class 1* Bearder, Ernest Arthur
 1911 *Class 1* Hickson, Bernard
 Rowe, Frederick Maurice

Chemistry of Leather Manufacture

- 1910 *Class 1* Seymour-Jones, Arnold

M.B. and Ch.B.

- 1908 *Class 1* Mitchell, Guy Annesley Carter
 1909 *Class 1* Thoseby, John Norman Lonsdale
 Class 2 Flint, Horace Lance
 " Smith, Reginald Eccles
 1910 *Class 1* Raper, Henry Stanley
 Class 2 Musson, John Percy
 " Slocombe, Bernard Atkinson
 " Stockdale, George Vincent
 1911 *Class 1* Fisher, John Barugh

VICTORIA UNIVERSITY HONOURS SCHOOLS
(YORKSHIRE COLLEGE STUDENTS)

History

- 1891 *Class 2* Stables, William Herbert
 Class 3 Taylor, Frank Edward
 1900 *Class 2* Scholes, Thomas Wilfrid
 1904¹ *Class 2* Davis, William Hathaway

¹ Victoria University of Manchester.

English Language and Literature

- 1904¹ *Class 1* Waterhouse, Osborn
Class 2 Denby, Maurice
 „ Elliott, Spencer Hayward
 „ Hepworth, Frank

Modern Languages and Literatures

- 1902 *Class 2* Robinson, Ethel Margaret
 „ Stevenson, Ethel Mary
 1903 *Class 2* Mann, William Edward Wormald
 1904¹ *Class 1* Airey, Millicent
Class 2 Dodgson, Sarah Alice
Class 3 Raven, Hilda Mary

Philosophy

- 1898 *Class 1* Stuart, Wilson

Mathematics

- 1899 *Class 1* Frankland, John Naylor
 1900 *Class 2* Findlay, Mary Grace

Physics

- 1897 *Class 2* Hammerton, Jonas
 1899 *Class 1* Cooper, Albert Henry
 „ Varley, William Mansergh
 1900 *Class 1* Shorter, Sydney Alfred
 1901 *Class 1* Grant, Charles Henry
Class 2 Copley, Frederick
Class 3 Andrews, William Allen
 1902 *Class 2* Denton, Ernest
 „ Oates, James Holroyd
Class 3 Goodson, Ethel Elizabeth
 1903 *Class 2* Thorp, Samuel
 1904¹ *Class 1* Phillipson, Abram

Chemistry

- 1891 *Class 1* Ingle, Harry
 1892 *Class 1* Mann, Harold Hart
 1893 *Class 1* Dent, Frankland
Class 3 Archdeacon, William Henry
 1895 *Class 2* Fry, George Cecil
 „ Guthrie, Thomas
Class 3 Hirst, Henry Reginald
 „ King, Herbert
 1896 *Class 1* Sugden, John Henry
Class 2 Brittain, Charles Edward
 „ King, Arthur
Class 3 Watson, Herbert Wood
 1897 *Class 1* Wilson, Harold Albert
Class 2 Harrison, William Hudson

¹ Victoria University of Manchester.

1898	<i>Class 1</i>	Skirrow, Frederick William
	<i>Class 2</i>	Calvert, Harry Thornton
	"	Storr, Bertram Vincent
1899	<i>Class 2</i>	Dobson, William Henry Noel
1900	<i>Class 1</i>	Denison, Robert Beckett
	<i>Class 2</i>	Shepherd, Arthur Burton
1901	<i>Class 1</i>	Dakin, Henry Drysdale
	"	Whiteley, Charles Edward
	<i>Class 2</i>	Gawler, Robert
1902	<i>Class 1</i>	Briggs, Samuel Henry Clifford
	"	Grant, Frederick Ernest
	"	Taylor, Francis
1902	<i>Class 2</i>	Gaunt, Rufus
	"	Norminton, Harold
	"	Redfern, Herbert Stanley
	"	Thompson, John Thomas
	<i>Class 3</i>	Coxon, Lawrence Adams
1903	<i>Class 1</i>	Raper, Henry Stanley
	"	Scholefield, Fred
	<i>Class 2</i>	Ellis, James John
	<i>Class 3</i>	Rhodes, Edwin
1904 ¹	<i>Class 1</i>	Gatecliff, John
	"	Hartley, Percival
	"	Marshall, Joseph
	"	Zortman, Israel Hyman
	<i>Class 2</i>	Calam, Harold
	"	Chadwick, Percival Wager
	"	Radcliffe, Norman Brooke
	<i>Class 3</i>	Barton, Edith Beatrice

Geology

1898	<i>Class 1</i>	Jowett, Albert
1899	<i>Class 1</i>	Dwerryhouse, Arthur Richard

Zoology

1901	<i>Class 1</i>	Standing, Herbert Fox
1903	<i>Class 2</i>	Dell, John Alexander

Physiology

1897	<i>Class 2</i>	Forsyth, John Andrew Cairns
1901	<i>Class 3</i>	Hummel, John James

Engineering

1891	<i>Class 1</i>	Nicholls, Percy
1893	<i>Class 2</i>	Davis, Frederick William Daniel
1896	<i>Class 2</i>	Hefford, Charles Nelson
1897	<i>Class 2</i>	Oddy, James
	"	Tansley, George Edward
1898	<i>Class 2</i>	Corrie, William Edward
	<i>Class 3</i>	Priestman, Harold

1899	<i>Class 1</i>	Linskill, William Arthur
	<i>Class 2</i>	Grocock, Henry Lloyd
	<i>Class 3</i>	Hutton, William Austin
1900	<i>Class 1</i>	Mann, Ernest Edward
1901	<i>Class 2</i>	Ballardie, George de Caynoth
	"	Pearson, Robert John Addison
1902	<i>Class 1</i>	Stelfox, Sydney Herbert
	"	Stoddard, Arthur Askwith
	"	Wetherall, Arthur
1902	<i>Class 2</i>	Cryer, Edward
	<i>Class 3</i>	Kirby, Frederick Oscar
1903	<i>Class 3</i>	Brayshay, Maurice William
	"	Slater, John Henry
	"	Tennant, Norman Scholefield

M.B. and Ch.B.

1894	<i>Class 2</i>	Seaton, Douglas
	"	Trumper, Oscar Bagster
1895	<i>Class 1</i>	Ligertwood, Charles Edward
	<i>Class 2</i>	Shaw, John Vincent
	"	Trotter, Robert Hale
1896	<i>Class 2</i>	Rowling, Samuel Thompson
1897	<i>Class 2</i>	Moorhouse, Charles Herbert
	"	Taylor, Frank Edward
1898	<i>Class 1</i>	Trotter, Edward
	<i>Class 2</i>	Spong, Ambrose
	"	Turton, Edward
1899	<i>Class 2</i>	Hime, Henry Charles Rupert
	"	Illingworth, William Arthur
	"	Morton, Armitage
1901	<i>Class 2</i>	Saville, Edwin
1903	<i>Class 1</i>	Braithwaite, Leonard Ralph
	<i>Class 2</i>	Steele, Percy Kingsley
1904	<i>Class 2</i>	Boyle, Alan
	"	Tomlin, Herbert

LL.B.

1902	<i>Class 1</i>	Sykes, James
1903	<i>Class 1</i>	Jessop, Frederick Hubert

¹ Victoria University of Manchester.

UNIVERSITY OF LEEDS

EXAMINATION LISTS

(September, 1910-June, 1911)

Faculty of Arts (including Commerce and Law)

M.A. Examination

<i>Classics</i> - - - - -	- Pobjoy, Harold Norman
<i>Latin and History</i> - - - - -	- Howarth, Fred
<i>English Literature and History</i> - - - - -	- Martin, Alice Walford
<i>Education</i> - - - - -	- Birtles, Arthur
<i>History</i> - - - - -	- Caldwell, Sarah Jane
	Cox, Herbert
	Gendall, Philip Parsons
	Watkins
	Gittleson, John
	Wortz, Frederick Robert

Examination for B.A. Degree with Honours

<i>Classics</i> - - - - -	<i>Class 2.</i>	Clarke, Charles Dougan Parker, Frank Walker, Algernon Stanley
<i>English Language and Literature</i> - - - - -	<i>Class 1.</i>	Charlton, Henry Buckley Fairley, Duncan Major, Irene Carlotta Phillips, Samuel
	<i>Class 2.</i>	Bean, William Harold Dawson, Thomas Henry Foggitt, Ida Wright, Bertha Helen
<i>Modern Languages and Literatures</i> - - - - -	<i>Class 1.</i>	Carter, John Wilfrid
	<i>Class 2.</i>	Elliott, Ruth Kirtland, Dorothy Mary
<i>History</i> - - - - -	<i>Class 1.</i>	Firth, John Rupert Garton, Ida Mary Heaton, Herbert
	<i>Class 2.</i>	Hinckley, Philip Moody, Sydney Tomlinson, John Lansdowne Wallace, Dorothy Kate Warren, Albert Edmund
	<i>Class 3.</i>	Miller, Florence Clark
<i>Philosophy</i> - - - - -	<i>Class 2.</i>	Papworth, Harold Charles Peacey, Basil William

B.A. Final Examination

Arnold, Edith	Martin, Ismae Knox
Beevers, Sydney	Mawson, Bertha
Boden, Cecil Arthur	Miller, Solomon
Broadley, Mary Anne	Pickett, Bertram Arthur
Crossland, Elsie	Pollard, Mabel
Dransfield, Henry Ewart Stanley	Potter, Hilda
Ellis, Henry Carl Noel	Pounder, Benjamin William
Fawcitt, Edwin Henry	Race, Ida Cunninghame
Gibson, George William	Redfearn, Florence Mary
Horne, Mary Osyth	Rhodes, Arthur Wellesley
Hosking, John	Sanderson, Tom
Johnson, Dorothy	Sheldon, Clara
Lee, Harry	Shout, Leonard West
Longstaff, Stella Marguerite	Varley, Annie
Maddock, William	West, Evangeline

B.A. Intermediate Examination*September, 1910*

Brown, George Frederick	Kirk, Leonard Bertram
Cass, Muriel	McKay, Annie Armstrong
Cross, Ernest	Radford, Conrad William Rich
Gawthorpe, Wilfrid	Twitchin, Elizabeth Edwards

June, 1911

Aston, Marion Gladys Stewart	Lupton, Margaret Ella
Boden, Reginald Stanley	Mallin, Hubert Patrick
Brock, Stella Caborn	Marriott, Edward
Corson, Olive	Mawson, Constance
Cox, William	Moorhouse, Herbert
Dyson, Fred	Nixon, Dora
Elliot, Gilbert Bernard	Padgett, Wilfred Wood
Fisher, Constance Naden	Parkinson, Harold Shaw
Foreman, Jeanie Christine	Parry, Clarise Hilda
Fox, Arthur	Pay, Thomas Wilfrid
Hirst, Beatrice May	Quinn, Edward Hodgkins
Huggins, John	Richards, Charles Threlfall
Hunter, Nelson Ackroyd	Tempest, Mabel Dorothy
Leech, Dorothy Edith	Varley, Bessie

Intermediate B.Com.*September, 1910.*

Linley, Herbert Hawthorne

LL.B. Final ExaminationIneson, Donald Gordon
Milner, James**LL.B. Intermediate Examination**Kaye, Sidney Herbert
Morgan, Owen
Wurzal, Joseph

Diploma in Education

Butler, Gloxinia
Caldwell, Sarah Jane
Phillips, Dorothy
Wilson, Muriel Margaret

Diploma for Teachers of French.

March, 1911

First Examination

Castle, Clara Jane
Irvin, Constance Guendolen
Lochore, Beatrice
Riley, Sarah Annie
Storr-Best, Gertrude Morfydd
Young, Constance Evelyn

June, 1911

First Examination

Mullett-Ward, Annie
North, Kate Victoria
Wylde, Jessie Irene

Second Examination

Hutchinson, Herbert Stafford
Lochore, Beatrice
Riley, Sarah Annie
Storr-Best, Gertrude Morfydd
Ward, Edith
Young, Constance Evelyn

Diploma for Teachers of German.

June, 1911

First Examination

Jones, Anne Elizabeth
Taylor, Dora

Second Examination

Edwards, Henry Fred Edgecumbe
Lingard, Jonas Hartley
Palmer, Margaret Elizabeth

Faculties of Science and Technology

M.Sc. Examination

<i>Chemistry</i>	-	-	-	-	-	Ark, Harry
<i>Geology</i>	-	-	-	-	-	Charlesworth, John Kaye
<i>Mining</i>	-	-	-	-	-	Brown, Thomas
<i>Leather Industries</i>	-	-	-	-	-	Das, Biraj Mohan
<i>Agriculture</i>	-	-	-	-	-	White, Robert George

Examination for B.Sc. Degree with Honours

<i>Physics</i> - - - -	- Class 1.	Houldsworth, Hubert Stanley
<i>Chemistry</i> - - - -	- Class 1.	Atkin, William Rearden
		Glick, Nathan Bernard
		Woodman, Herbert Ernest
	Class 2.	Rawling, Francis George
	Class 3.	Bales, Sidney Hartley
		Thompson, Frederick Charles
<i>Geology</i> - - - -	- Class 1.	Chapman, Sarah Elizabeth
<i>Civil Engineering</i> - - - -	- Class 1.	Stilwell, Samuel Thomas
		Cryer
<i>Mechanical Engineering</i> - - - -	- Class 3.	Gerard, Inglis Joseph
<i>Colour Chemistry and Dyeing</i> - - - -	Class 1.	Hickson, Bernard
		Rowe, Frederick Maurice

Ordinary B.Sc. Final Examination

Airey, Cecil Philip	Kendall, Percy Fry
Aldersley, Arthur Howard	Lishman, Arthur Vincent
Blackburn, Clarice Lawton	Makinson, Nora Isabel
Brekke, Lorentz Oliver	Midgley, Michael Mortimer
Bright, Alfred	North, Neville Marriott
Coldbeck, Malcolm Stanley	Pearson, William
Curtis, Horace	Senior, George
Davison, Florence Mary	Simpson, Thomas Cooper
Farnish, John	Taylor, Arthur
Gregson, Annie	Whiteley, Ada
Hole, Herbert Wray	Wilson, John Harry
Hoppenstadt, Isaac	Wright, Charles
Jackson, Percy Gladstone	

B.Sc. Intermediate Examination

September, 1910

Hey, Minnie	Stobart, Ralph Forester
Pickard, Miriam	Stowell, Harry
Shippam, Sidney Percival	Walker, Evelyn
Shulman, Isaac	

June, 1911

Auty, Clifford Marshall	Hollings, Dorice Mary Clotilda
Banks, Reginald Scaife	Midgley, Harry
Barber, Clifford	Midgley, James
Barrett, John Douglas	Milner, David William
Chester, Richard	Parkinson, Ben
Collinson, James Arthur	Randall, William
Crockatt, Arthur John	Redfearn, George Richard
Dougill, George	Sen, Jagendranath
Douglas, Frank	Senior, Allan
Duthie, Charles Sydney	Seville, Robert Ockleston
Green, Arthur Eatough	Smithells, Colin James
Hancock, Barbara	Sweeting, Charles Procter
Holgate, James	Thompson, George Casburne

Thorpe, Hugh Stanley
Walker, Albert George
Whitaker, Henry
Wilson, Eric Western

Wolfe, Harold Maurice
Worsnop, Harry
Wright, Ernest Francis

Diplomas

<i>Mechanical Engineering</i>	-	-	-	-	-	Farnell, Maurice
<i>Fuel and Metallurgy</i>	-	-	-	-	-	Walker, James
<i>Gas Engineering</i>	-	-	-	-	-	Armstrong, Percy
<i>Leather Manufacture</i>	-	-	-	-	-	Dobson, Joseph Stanley
						Rashid, Mohammed Abdur
<i>Dyeing</i>	-	-	-	-	-	Rowe, Frederick Maurice

Faculty of Medicine

M.D. Examination

February, 1911

Vallow, Harold

Final M.B. and Ch.B. Examination with Honours

December, 1910

Class 2. Musson, John Percy
Slocombe, Bernard Atkinson
Stockdale, George Vincent

June, 1911

Class 1 Fisher, John Barugh

Final M.B. and Ch.B. Examination

December, 1910

Part I

Wigglesworth, Frank
Wood, Bertram William Francis

Part II

Brown, John Perrin
Hart, Walter Sidney
Ingham, Harold Norman
Sharpe, Claudius Galen Kaye

June, 1911

Part I

Angel, Harry	Metcalf, John Clifford
Blackburn, John Holliday	Milton, Norman Vernon
Elliott, Thomas	Peto, Morton
Ferguson, John	Samuel, Samuel
Kirk, George William Lister	Symons, Hubert Wallace
Mellis, George Pickard	

Part II

Brown, Charles Suffield
Riley, Arthur
Walker, Thomas Lockwood

Second M.B. and Ch.B. Examination*December, 1910**Part I*

Butler, Leonard Henry	Menon, Kesava
Drake, William Allison	Sinson, Harry
Gillies, John Cruickshanks	Taylor, Herman Louis
Knowles, Henry Rylands	Ward, Clifford

*June, 1911**Part I*

Gozney, Charles Marsh
 Hesterlow, Edward
 King, William Douglas Anderson
 Wright, John

Part II

Anderton, William Dinsdale	King, William Douglas Anderson
Chadwick, Richard Henry	Lockwood, Herbert Sinclair
Clarke, Digby Arthur Pebody	Menon, Kesava
Cohen, Sam Nathaniel	Robinson, Henry Whitterton
Digges La Touche, John James	Seville, Charles Heywood
Foxton, Hartas	Shochet, Harry
Hebblethwaite, Arthur Stuart	Wilkinson, John
Hesterlow, Edward	Wilson, Colin
King, Frank	

First M.B. and Ch.B. Examination*September, 1910**Part I*

Clarke, Digby Arthur Pebody
 Digges La Touche, John James
 Drake, William Allison
 King, Frank

Part II

Castelow, Benjamin William

*March, 1911**Part I*

Castelow, Benjamin William	Lockwood, Herbert Sinclair
Chadwick, Richard Henry	Rosencwige, Jacob
Franklin, Hyman	Smith, Jessie
Hebblethwaite, Arthur Stuart	Topham, Richard Stanley
Holt, Harry Mainwaring	Umanski, Augusta
Leake, Charles Edward	Walton, Francis
Liberman, Israel	

June, 1911

Part II

Bamford, Jane	Rosencwige, Jacob
Franklin, Hyman	Smith, Jessie
Holt, Harry Mainwaring	Topham, Richard Stanley
Hutchinson, Miriam	Umanski, Augusta
Leake, Charles Edward	Walton, Francis

Diploma in Public Health (D.P.H.)

December, 1910

Ashmore, Patricius Wallace
Hitchins, William Mayne
Mason, John Harold

June, 1911

Smith, Charles Nixon

Diploma in Dental Surgery (L.D.S.)

Preliminary Examination in Science

March, 1911.

Clubb, Douglas Bailey
Pullan, William Greaves
Rogerson, Ernest Arthur
Williamson, Norman Tetlow

First Professional Examination

June, 1911

Waddington, Horace Victor

Final Examination

December, 1910

Part II (carrying Diploma)

Howden, Ernest

REGISTERED STUDENTS

Session 1910-11.

Faculties of Arts (including Commerce and Law),
Science and Technology*The names of deceased students are printed in italics.**(m)—Signifies also in attendance in the Faculty of Medicine.*

- | | |
|--|---|
| Ackroyd, Louis | Barker, James Percival |
| Adams, Emily | Barker, John Shaw |
| Airey, Cecil Philip | Barker, May |
| Aldersley, Arthur Howard | Barker, Wilfred Pease |
| Allott, Cecil Bertram Scott, B.A.,
B.Sc. | Barnsbee, John Ephraim |
| Allott, Wilfrid | Barrett, John Douglas |
| Ambler, John Walter | Bastiman, Arthur Charles |
| Anderson, Elizabeth | Batey, (Rev.) John Hall, B.Litt. |
| Anderson, Jessie Gilchrist | Battle, Alfred Ernest |
| Anderson, Mabel Maud | Beahan, James Patrick |
| Anderson, Robert Hutchison | Bean, William Harold |
| Anson, Jane Ridsdale | Bearder, Ernest Arthur, B.Sc.,
<i>Clothworkers' Dyeing Scholar</i> |
| Appleyard, Alfred, B.Sc. | Beech, Frank |
| Ark, Harry, B.Sc. | Beevers, Sydney |
| Armitage, Catherine | Bell, Jane |
| Armstrong, Percy Towns | Bell, John Scott |
| Armstrong, William Leslie | Bennett, John |
| Arnold, Edith | Bennett, Percy |
| Ashford, Faith | Bennett, William Gordon |
| Aspey, Urban | Bentley, Edith |
| Aston, Marion Gladys Stewart | Bentley, Owen |
| Atkin, Charles Herbert | Best, Thomas Edward |
| Atkin, William Rearden, <i>Brown
Scholar</i> | Bevan, Albert Edward |
| Atkinson, Elsie May | Beynon, William |
| Atkinson, George | Bingham, Alfred Cecil |
| Atkinson, Joseph Albert | Binns, Frank Greenham |
| Atkinson, Norman Evans | Binns, Harold |
| Atkinson, Thomas Cyril | Birch, Edward Charters |
| Atkinson, Vincent Henry | Birtles, Arthur, B.A. |
| Auty, Clifford Marshall | Blackburn, Clarice Lawton |
| | Boden, Cecil Arthur |
| Bailey, Marion | Bolton, Ethel Addison |
| Bales, Sidney Hartley | Bonhomme, Jean Raymond |
| Balme, Sam | Botterill, Percival |
| Bamford, Jane | Bottomley, Edwin Hainsworth |
| Banks, John Cook | Bowker, Benjamin |
| Banks, Reginald Scaife | Boyle, Douglas Jackson |
| Bannister, Walter | Brace, Clarice Ethel |
| Barber, Benjamin Teal | Bradley, Jonas |
| Barber, Clifford | Bradley, William |
| Barker, Frank | Briggs, John James |
| | Briggs, Margery Haining |

- Briggs, Reginald Martin Curren
 Bright, Alfred
 Broadley, Mary Anne
 Brock, Stella Caborn
 Brook, Elsie
 Brooke, Gilbert Henry
 Brooke, Harold William
 Brooks, Eric Sydney Clifford
 Brooksbank, Ethel
 Brown, Cyril Graham
 Brown, Florence Margaret
 Brown, George Arthur
 Brown, George Frederick
 Brown, George Gilbert
 Brown, Henry Oswald
 Brown, Thomas
 Brujas-Planas, Mariano
 Bucknall, Paul Damien
 Bull, Walter
 Burrows, John
 Burton, Donald
 Butler, Allan
 Butler, Charles
 Butler, Gloxinia, B.A.
 Butler, John Lawrence

 Caldwell, Sarah Jane, B.A.
 Carr, May
 Carstairs, James Ruthven
 Carter, John Wilfrid, *William*
 Summers Scholar
 Casson, George
 Castelow, Ben William (*m*)
 Castle, Clara Jane
 Caukill, Francis
 Chadwick, Richard Henry (*m*)
 Chambers, John
 Chaplin, Ursula, M.D.
 Chapman, Sarah Elizabeth
 Charlton, Henry Buckley
 Charlton, Thomas Currie
 Cheevers, Florence
 Chester, Richard
 Chrystal, George
 Clifton, Norris
 Clark, Tom
 Clarke, Archibald Douglas
 Clarke, Charles Dougan
 Cleaver, John
 Clegg, Cyril Charles
 Clubb, Douglas Bailley (*m*)
 Cobbold, Hazen Nevill Herbert

 Cockcroft, Clement Randolph
 Colbeck, William Henry
 Colbert, Thomas Henry, B.Sc.
 Coldbeck, Malcolm Stanley
 Collins, Evelyn Hilda
 Collinson, James Arthur
 Conyers, Fred Gofton
 Cooper, William Stanley
 Corson, Olive
 Coultas, Harold Wilberforce
 Coulthirst, Gordon
 Cowling, George Herbert
 Cox, William
 Coxon, George Robert
 Cramp, Amy Winifred
 Craven, Ben
 Craven, Herbert Harrison
 Craven, Thomas Ernest
 Crockatt, Arthur John
 Croft, George Henry
 Cross, Ernest
 Crossland, Arthur
 Crossland, Elsie
 Crowley, Frederick Hugh
 Crowther, Florence
 Crowther, Fred
 Crowther, Stephen
 Cryer, Joseph
 Cunningham, Jean Orme, B.Sc.
 Curtis, Horace

 Das, Biraj Mohan, M.A.
 Davey, John Milton
 Davis, Helen Coleridge
 Davison, Florence Mary
 Dawidar, Abdel Mawgood Khalil
 Dawson, Thomas Henry
 Dawson, Thomas Rayner
 Day, Harold
 Dearden, Gladys May
 Dennison, Joseph Philip
 Dewhurst, Godfrey Jefferson
 Dickinson, Tom
 Dimond, Sydney George
 Dinsdale, Edward James
 Dircks, Hugh Douglas
 Dixon, Clifford Cedric
 Dixon, Leslie
 Dobson, Donald Frederick,
 M.B., B.S.
 Dobson, Joseph Stanley
 Dodson, Alice Wood

- Domann, Albert Karl Ernst
 Dossor, Emily
 Dougill, George
 Douglas, Frank, *Akroyd Scholar*
 Drake, Harry (*m*)
 Dransfield, Henry Ewart Stanley
 Dransfield, John William
 Driver, John William
 Duang, Nai
 Duffin, Joseph Francis, B.Sc.,
University Scholar
 Duthie, Charles Sydney
 Dyson, Fred
- Eaton, Marjorie Hawthorne
 Ebbage, Edith Mabel, B.Sc.
 Edwardes, Henry Fred Edgecumbe
 Edwards, Norman Claud Hampden
 Effron, George Henry
 Elgie, Thomas Henry
 Elliott, Ruth
 Ellis, George Ronald
 Ellis, Henry Carl Noel, *Leighton Scholar*
 Ellis, Percival Clement
 Emsley, Edith
 Eurenjy, Kegham
 Evers, William
 Exley, Cyril James Gozney
- Fairley, Duncan
 Faizuddin, Syed
 Farmer, George
 Farnell, Maurice
 Fawcett, Geoffrey
 Fawcitt, Edwin Henry
 Fearnside, Marion Campbell
 Finch, William Arthur
 Firth, Frank
 Firth, John Rupert
 Firth, Maurice
 Firth, Thomas
 Fisher, Constance Naden
 Fletcher, John
 Foad, Mohammed
 Foggitt, Ida
 Foreman, Jeanie Christine
 Forman, Florence
 Forrest, Harold Stillings
 Forsell, Francis Meadows
 Forster, John Baker
 Foulkes, Albert David
- Fourgeaud, Marcel
 Fox, Arthur
 Franklin, Hyman (*m*)
 Freistedt, Sven Hjalmar
- Gabriel, William Lawson Mabson
 Galpine, Dorothy
 Garratt, Herbert Edward
 Garton, Ida Mary
 Gaunt, Philip
 Gawthorpe, Wilfred
 Gee, Silas
 Gerard, Inglis Joseph, *Craven Scholar*
 Gibson, George William
 Gilham, Edith Maude
 Gill, John Edgar (*m*)
 Gill, Joseph
 Gill, Richard
 Gilliat, Robert Vincent
 Glick, Nathan Bernard
 Glover, Joseph Rene
 Goldman, Philip
 Goldstone, Cecilia, *Leighton Scholar*
 Goode, Charles William
 Goodman, Ralph Morris
 Goss, Francis Hennessey
 Goss, Joseph Aloysius
 Gctoh, Siki
 Gray, Margaret Elizabeth
 Green, Arthur Eatough
 Green, Benjamin Cecil
 Green, Thomas Edwin
 Greenwood, Emily Maud
 Greenwood, Josémeé Marguerite,
Charles Wheatley Scholar
 Gregson, Annie
 Grimshaw, Vernon Ewart
- Habberjam, Charles
 Haigh, Guy Rhodes
 Hamilton, Andrew
 Hamilton, Thomas
 Hancock, Barbara
 Harding, Reginald
 Hardy, William Evelyn
 Harper, Francis William
 Harris, Will Smith (*m*)
 Harrison, Muriel Kate
 Harrison, Sophy
 Hartley, John Alfred, *Akroyd Scholar*
 Harwood, Wright

- Hayes, Robert Andrew
 Hazard, John de Vaus
 Heaton, Herbert
 Hebblethwaite, Arthur Stuart (*m*)
 Hebblethwaite, William Murray
 Hebron, Arthur
 Hedley, John Forster
 Hegemann, Joe
 Heidrich, Leonard
 Helliwell, Hamlet
 Hepton, Marguerite Roberts
 Hesselgrave, Joseph Clifford
 Hewitt, Percy George
 Hey, Minnie
 Hickson, Bernard
 Hill, Norman Hammond
 Hilton, Frank
 Hinckley, Philip
 Hirst, Beatrice May
 Hobson, Kathleen
 Hogg, Edmund Bernard Oscar
 Hole, Herbert Wray
 Holgate, James
 Hollings, Dorice Mary Clotilda
 Hollings, Harold
 Holroyd, Thomas Arthur
 Holt, Henry Mainwaring (*m*)
 Holt, Willie
 Hoppenstadt, Isaac
 Horne, Mary Osyth
 Horne, William Mackenzie
 Hosking, John
 Hou, Yen Ping
 Houldsworth, Hubert Stanley
 Howcroft, Frederick
 Hoyle, Harold
 Hudson, Edwin Chetwynd
 Hudson, John
 Huffington, Thomas
 Huggan, William
 Huggins, John
 Hughes, Frederick Cleaton
 Hunter, George Suart
 Hunter, Nelson Ackroyd
 Hunter, Reginald Watt
 Hutchinson, Herbert Stafford
 Hutchinson, Miriam
 Hutton, Arthur Norman
 Hutton, Louise
 Ibbetson, Fred
 Ibbetson, Sarah Sybil
 Ineson, Donald Gordon
 Ingham, William Leslie
 Irish, Edward
 Irvin, Constance Guendolen
 Jackson, Frederick Keith
 Jackson, George Godfrey
 Jackson, Percy Gladstone
 Jagger, Mary Elizabeth Marguerita
 Anne
 James, Frederick Ernest
 James, Gladys
 James, Gwynne Lewis Broadhurst
 Jameson, Margaret Ethel
 Jay, Arthur Johnson
 Jemison, Charles
 Jenkins, Elsie Mary
 Jenner, Theodora
 Jessop, George Edward
 Jessop (Mrs.), Margaret Ritchie
 Johnson, Dorothy
 Johnson, Laurence Alfred,
 M.R.C.S., L.R.C.P. (*m*)
 Johnson, William
 Jones, Anne Elizabeth
 Jones, Caroline
 Jones, Stanley
 Jordan, George Jefferis
 Jubb, Archie Armitage, M.D., B.Sc.
 Judd, Harold Arthur
 Judge, (Mrs.) Constance Mary
 Kaminski, Rebecca
 Kay, Emily
 Kay, Stanley Burnett
 Kaye, Sidney Herbert
 Keller, Hans Rudolf
 Kendall, Percy Fry
 Kennedy, William
 Kent, Leslie Harcourt
 Kerr, Harold
 Kershaw, Richard Greenwood
 Keswick, Joseph Daniel Leonard
 King, Arthur
 King, Walter Edward
 Kirk, Leonard Bertram
 Kirtland, Dorothy Mary
 Kitchingman, Mary Emma
 Kitson, Fanny Edith
 Kitson, Mary Ellen
 Knapton, Ruth
 Knowles, Geoffrey, LL.B.

- Krishna, Raj
 Kyle, John William

 Lane, Elsie
 Langstaff, Bilton, B.A., B.Sc.
 Lavington, Mabel Jessie
 Law, Francis Reginald
 Lawson, Edward Ingleson
 Lawson, Quintin Young
 Lawson, Tom
 Layzell, Stanley Charles
 Leach, William
 Leake, Charles Edward, *Medical Scholar (m)*
 Leber, Walter
 Ledoux, Jean
 Lee, Elsie, B.Sc.
 Lee, Fang Tsung
 Lee, Harry, *Leighton Scholar*
 Leech, Dorothy Edith
 Lees, Arnold
 Lees, Frank Priestman
 Levitt, George
 Levy, Sissie Emma
 Libbish, Barnet, *Leighton Scholar*
 Liberman, Israel (*m*)
 Lieberman, Reuben
 Lingard, Jonas Hartley
 Linley, Herbert Hawthorne
 Lishman, Arthur Vincent
 Lister, Albert
 Littlewood, Rowland Whitelaw
 Livingston, Janet Agnew
 Lloyd, Ebenezer
 Lloyd, Ivor
 Lochore, Beatrice
 Lockwood, Elsie
 Lodge, George Arthur
 Lodge, Samuel Durham (*m*)
 Longstaff, Annie
 Lord, George
 Lumb, Arthur
 Lupton, Margaret Ella
 Lupton, Mildred
 Lyons, William Campbell,
 M.B., Ch.B.

 Mabire, Maurice Leon Pierre
 Mackay, Kenneth
 Mackie, Alec Coleman
 Maddock, William
 Major, Irene Carlotta

 Makinson, Nora Isabel
 Mallin, Patrick Hubert
 Mallinson, Eric
 Mao, Shen Shan
Marriner, Bertie
 Marriott, Edward
 Marriott, John Harland
 Marshall, Francis, M.Sc.
 Marshall, Harold
 Marshall, Herbert
 Martin, Alice Walford, B.A.
 Martin, George Christopher
 Martin, Ismae Knox
 Mason, James Payne
 Masterman, Dorothy
 Mather, John Wyld
 Mather, Thomas Henry
 Maude, Edgar Ringrose
 Mawson, Bertha
 Mawson, Constance, *Edward Baines Scholar*
 Mawson, Frank
 May, Eliza Nonaria
 McEntegart, Mary Jane
 McErvell, William Alfred
 McGrath, Catherine Mary
 McKay, Annie Armstrong
 McKee, Sarah Mary
 McMillan, Mary McWhirter
 Mellor, Herbert
 Meredith, David Francis
 Metcalfe, William
 Middleton (Mrs.) Margaret J.
 Midgley, Harry
 Midgley, James
 Midgley, Michael Mortimer
 Miller, Eric Julius
 Miller, Florence Clark
 Miller, Solomon
 Milner, David William
 Milner, Geoffrey
 Milner, James
 Moffat, William Ian Grant
 Mohun, Norman Henry
 Moody, Sydney
 Moorhouse, Herbert
 Morgan, Owen
 Morrell, George Norman Maurice
 Mukerjee, Kshitish Chandra
 Mulcahy, Ellen
 Mullett-Ward, Annie
 Musson, Glenn Fowler (*m*)

- Musson, John Percy, M.B.,
 Ch.B. (*m*)
 Myers, Marion
 Nara, Ryoze
 Naylor, Charles
 Neale, Charles Sidney
 Needham, Clyde
 Newstead, Cecil
 Newton, Harry
 Nichol, Agnes
 Nixon, Dora
 Nodding, George William
 Normanton, Fred Garside
 North, Kate Victoria
 North, Neville Marriott
 Ogden, Herbert
 Omar, Abdel Fattah Hamdy
 Padgett, Wilfred Wood
 Palfreeman, Edwin
 Palmer, Margaret Elizabeth, B.A.
 Papworth, Harold Charles
 Parker, Allan Foggitt
 Parker, Frank
 Parkinson, Ben
 Parkinson, Harold Shaw
 Parr, Thomas Alfred
 Parry, Clarise Hilda
 Partridge, Hugh Roger (*m*)
 Pay, Thomas Wilfrid
 Paynter, Edward Ernest William
 Peacey, Basil William
 Peacock, Louise Mary
 Peacock, Oswald Raper
 Pearson, Albert
 Pearson, William (Bradford)
 Pearson, William, *Akroyd Scholar*
 (Liversedge)
 Peniston, Annie
 Penlington, Harry Napier
 Penlington, Herbert William
 Pennington, Charles
 Perry, Robert
 Pettitt, Herbert
 Phillips, Charles Kendall
 Phillips, David Seymour
 Phillips, Dorothy, B.A.
 Phillips, Samuel, *Salt Scholar*
 Pickard, Miriam
 Pickering, Jessie
 Pickett, Bertram Arthur
 Pickles, Clifford Crawshaw,
 M.R.C.S., L.R.C.P. (*m*)
 Pickles, Harold Dobson (*m*)
 Pickstone, Frederick
 Pighills, Harold Norman, B.Sc.
 Pilgrim, Daisy Sophia
 Pilley, John Sydney
 Pilsbury (Mrs.), Lucy, B.Sc.
 Pollard, Mabel
 Pope, Phebe Ann
 Potter, Hilda
 Pounder, Benjamin William
 Powis, Frank, B.Sc., *University
 Scholar*
 Priestman, Kenneth Mallorie
 Pullan, William Greaves (*m*)
 Pybus, Dora
 Quinn, Edward Hodgekins
 Race, Ida Cunninghame
 Radford, Conrad William Rich
 Raisman, Abraham
 Raistrick, Harold
 Rakisson, Maurice
 Ralphs, Arthur
 Ramos, Samuel Edward
 Randall, William
 Rankin, Thomas Thomson, M.D.
 (*m*)
 Rashid, Mohammed Abdur
 Rawling, Arthur, *Akroyd Scholar*
 Rawling, Francis George, B.Sc.,
 Akroyd Scholar
 Reddy, Venkat Lakshman
 Redfearn, Florence Mary, *Charles
 Wheatley Scholar*
 Redfearn, George Richard
 Reynolds, Carrie
 Rhodes, Alfred Irving
 Rhodes, Arthur Henry
 Rhodes, Arthur Wellesley
 Richardson, Charles Richard Sugden
 Richardson, Hedley
 Richardson, James Rowling
 Richardson, William Rowson
 Riley, Sarah Annie
 Rintoul, William
 Roberts, Edwin
 Robertson, Adam
 Robinson, Milton

- Rodwell, John Arthur
 Roebuck, Henry
 Rogers, Simeon
 Rogerson, Ernest Arthur
 Rose, George Angus, B.A.
 Rosencwige, Jacob (*m*)
 Ross, Percival Howard
 Rowe, Annie Jane
 Rowe, Edmund Charles Murchison
 Rowe, Frederick Maurice
 Rowntree, Maurice Lotherington,
 B.A.
 Rudd, John
 Rusby, John Elvin

 Sagar, James William A.
 Sampson, Catherine Ruby
 Sanderson, Tom
 Sariüvanov, Dimitre
 Savin, Constantine
 Scallan, Thomas Edward
 Schneider, John Frederick
 Scholefield, Harry, M.B., B.S. (*m*)
 Scott, Julia Penketh
 Sen, Jagendranath
 Senior, Alan
 Senior, George
 Seville, Robert Ockleston, *Brown*
 Scholar
 Shackleton, Arthur Percival
 Shafi, Mohamad
 Sharpe, George Clifford
 Shaw, Stanley
 Sheldon, Clara
 Shepherd, Reginald Vernon
 Sherwin, Walter
 Shillito, Jabez
 Shippam, Sidney Percival
 Shout, Leonard West
 Shulman, Isaac
 Siddall, Ernest
 Silcock, Edward Hewson
 Simpson, John William
 Simpson, Thomas Cooper
 Sissons, Roland Edward
 Sizer, Nelson
 Slade, Frank
 Smiles, Percy
 Smith, Ambrose Tristram
 Smith, Arthur
 Smith, Constance
 Smith, Frank Wadsworth

 Smith, Geoffrey Belasyse
 Smith, George White
 Smith, Jane Elizabeth
 Smith, Jessie (*m*)
 Smith, John Rider
 Smith, Laurence Butler
 Smith, (Mrs.) Monimia Hitchen
 Smith, Sydney Archbold
 Smith, William Foster
 Smithells, Colin James
 Sourreya, Hassaki Zadé
 Sowden, Alan
 Speight, Rose
 Spencer, Ernest
 Spencer, George William
 Spencer, Harry
 Spencer, John Aldersley Craven
 Spink, Edward Holt
 Standing, Christine
 Stansfield, Harry, M.B., Ch.B.
 Staveley, John, *Akroyd Scholar*
 Stead, Lilian Mary
 Stephenson, Cyril Richard William,
 Edward Baines Scholar
 Stephenson, William, *Clothworkers'*
 Textile Scholar
 Stillwell, Samuel Thomas Cryer
 Stobart, Ralph Forester
 Stockdale, Guy Nelson
 Stocks, Herbert Holroyd, *Brown*
 Scholar
 Stones, Norman
 Storr-Best, Gertrude Morfydd
 Stowell, Harry
 Stringer, Cuthbert Henry
 Sugden, Reginald
 Sutcliffe, (Mrs.) Amelia
 Swale, Ernest Roberts
 Sweeting, Charles Proctor
 Swift, Edgar Allan
 Swinbank, John
 Swire, Frank (*m*)

 Talbot, Rupert Kershaw
 Taylor, Arthur, *Leighton Scholar*
 Taylor, Bertha
 Taylor, Dora
 Taylor, Ernest, *Akroyd Scholar*
 Tempest, Mabel Dorothy
 Thirkill, Henry, B.Sc.
 Thistlethwaite, Hilda
 Thistlethwaite, May

Thomas, Frederick, M.Sc.
 Thomas, William Calvert
 Thompson, Frederick Charles
 Thompson, George Casburne
 Thompson, Harold Stead
 Thompson, Henry Wilberforce
 Thornton, Edward
 Thornton, Ernest Thompson
 Thornton, Frank
 Thornton, Harold, B.Sc.
 Thorpe, Hugh Stanley
 Tomlinson, John Lansdowne
 Topham, Richard Stanley (*m*)
 Trigle, Sidney Edward
 Turner, Ernest
 Turner, Lillian Sarah
 Twitchin, Elizabeth Edwards

 Uberoi, Iqbal Singh
 Uddin, Syud Mohammad Amin
 Umanski, Augusta (*m*)

 Vallow, Harold, M.B., Ch.B.
 Varey, Mary
 Varley, Annie
 Varley, Bessie
 Varley, Harold Fay Fleetwood
 Vaughan, John David
 Vause, John Gilbert
 Vince, Eva Mary, B.Sc.

 Waddington, Horace Victor (*m*)
 Wagner, Elizabeth
 Wainwright, Margery Irene
 Walbank, Alec David Robert
 Walker, Albert George
 Walker, Algernon Stanley
 Walker, Cecil
 Walker, Emily Ethel
 Walker, Evelyn
 Walker, George Rollo Selborne
 Walker, James, B.Sc.
 Walker, Roger Beverley
 Wallace, Dorothy Kate
 Walter, William Guy Ardagh
 Walton, Francis (*m*)
 Ward, Edith
 Warren, Albert Edmund
 Watson, Albert
 Watson, Alfred Herbert
 Watson, Arthur Donald
 Watson, Edwin Roy, M.A., B.Sc.

Watson, Graham Lauder
 Watson, Lionel Cassels
 Washington, Thomas
 Webster, Herbert
 Webster, Thomas
 Weir, Henry Keith Chrichton
 Werquin, Charles Louis Joseph
 West, Evangeline
 Wharram, Charles Etherington
 Wheatley, Arnold Herbert Maurice
 Wheatley, Kate
 Whincup, Harry Haynes, *L.C.C.*
 Scholar
 Whitaker, Henry
 Whitaker, Jennet Isabelle
 White, Edward John, B.A.
 Whitehead, Arthur Hinton
 Whiteley, Ada
 Whitley, Arthur
Whillow (Junr.), Henry
 Whitwam, Harold Ernest
 Widdowson, George Ambler
 Wilkinson, Eric Fitzwater
 Wilkinson, Ernest
 Wilkinson, Harold
 Williamson, Norman Tetlow
 Wilson, Alexander William
 Wilson, Eric Western
 Wilson, Ernest Percival
 Wilson, John Harry
 Wilson, Muriel Margaret, B.A.
 Wilson, Norman
 Wilson, Otto Bob
 Wilson, Thomas William
 Wimpenny, May
 Wither, Winifred Grace
 Wolfe, Harold Maurice
 Wolff, Solomon, M.Sc.
 Womack, Oswald Cedric
 Womersley, Rosa
 Wood, Charles Bertram
 Wood, George
 Wood, Henry Stanley
 Wood, Herbert
 Wood, James Herbert
 Wood, Lawrence
 Woodman, Herbert Ernest
 Woodroffe, David, *L.C.C. Scholar*
 Worsnop, Harry
 Wrathall, Alice
 Wray, John Lamport
 Wright, Annie

Wright, Beatrice Hilda
 Wright, Bertha Helen
 Wright, Charles
 Wright, Elizabeth
 Wright, Ernest Francis
 Wright, Fred
 Wright, Palmer Howard

Wurzal, Joseph, *Emsley Scholar*
 Wylde, Jessie Irene

Yang, Shao Nan
 Yelagin, Sergius
 Young, Constance Evelyn
 Yturbe, Francisco de

Faculty of Medicine

(s)—*Signifies also in attendance in the Faculty of Science.*

Anderton, William Dinsdale
 Angel, Harry
 Arbuckle, Donald

Bastable, Arthur Langford
 Bernstein, Isaac Barnett
 Blackburn, John Holliday
 Bleasdel, John Tydesley
 Briggs, Norman
 Broughton, John Frederick, M.B.,
 B.S. Lond.

Brown, Charles Suffield
 Brown, Herbert Horan
 Brown, John Perrin
 Butler, Leonard Henry

Caplan, Harry
 Castelow, Ben William (s)
 Cattley, Robert, B.Sc., M.B.
 Chadwick, Richard Henry (s)
 Clarke, Digby Arthur Pebody
 Clarke, Thomas
 Clubb, Douglas Bailley (s)
 Cocker, James Percy
 Cohen, Sam Nathaniel
 Cooper, F. S.
 Crosby, John
 Crowther, William Edmund, B.Sc.

Digges La Touche, John James
 Dolan, Stephen Ormond
 Drake, Harry (s)
 Drake, William Allison
 Dunbar, Leslie
 Dwyer, Maurice

Elliott, Thomas
 Ellis, William Francis, M.B., Ch.B.

Farrer, Robert Noel
 Ferguson, John

Fischer, Ilse
 Fisher,² John Barugh
 Foord, James Maurice
 Foxton, Hartas
 Franklin, Hyman (s)
 Frobisher, James Hebblethwaite
 Martin, M.B., Ch.B. (Leeds)

Garland, Geoffrey
 Gill, John Edgar (s)
 Gillies, John Cruickshanks
 Gozney, Charles Marsh
 Greaves, Samuel Sowray
 Green, Stanley Willoughby
 Griffith, Frank

Harris, Will Smith (s)
 Hart, Walter Sidney
 Harvey, Reginald Simpson
 Hebblethwaite, Arthur Stuart (s)
 Hesterlow, Edward
 Hodgson, Gordon Alexander
 Holt, Harry Mainwaring (s)

Iles, George Denis
 Ingham, Harold Norman

Johnson, Laurence Alfred, M.R.C.S.
 L.R.C.P. (s)

Kenworthy, Tom Ramsden
 Keswick, John Barton Thompson
 King, Frank
 King, William Douglas Anderson
 Kirk¹, George William Lister
 Kitson, Frederick Hubert
 Knowles¹, Henry Rylands

Lambert, John Vollans
 Leake¹, Charles Edward (s)

¹ Medical Scholar.

² Infirmary Scholar.

Liberman, Israel (s)
 Little¹, Cuthbert Joseph Harwood
 Lockwood, Herbert Sinclair
 Lodge, Samuel Durham (s)
 Ludolph, Henry Guy

Macvie, George Ernest
 Magoveny, Edward, M.B., Ch.B.,

Glasgow

Mason, William Fidler
 Mawson, Harold Woodhead
 Medhurst, Norman Hastings
 Mellis, George Pickard
 Menon, M. P. Kesava
 Metcalfe², John Clifford
 Mitton, Norman Vernon
 Musson, Glenn Fowler (s)
 Musson, John Percy (s)

Nunneley, Francis William

Parker, Harold
 Partridge, Hugh Roger (s)
 Pearson, Lionel Glover
 Peto, Morton
 Pickles, Clifford Crawshaw,
 M.R.C.S., L.R.C.P. (s)

Pickles, Harold Dobson (s)
 Pickles, John Jagger
 Percy, Bernard Charles
 Pinder, John
 Pope, Herbert Barrett
 Prendergast, John Arnoux
 Pullan, William Greaves (s)

Rabagliati, Andrea Francis
 Honyman, M.D. *Edinburgh*
 Rankin, Thomas Thornton, M.D.

Glasgow (s)

Reinhardt, Cecil Goodwin
 Richardson, Cyril Brian
 Richardson, Gerald Sidney
 Riddett, Stanley Alfred
 Riley, Arthur
 Roberts, Warren Longtoft
 Robinson, Henry Clifford
 Robinson, Henry Whitterton
 Robinson, William
 Rosencwige, Jacob (s)

Rushton, Irvine
 Samuel, Samuel
 Scargill, Henry Edwin
 Scholefield, Harry, M.B., B.S. (s)
 Scott, Samuel Robert, M.R.C.S.,
 L.R.C.P.

Seville, Charles Heywood
 Shackleton, Herbert Park
 Sharpe, Claudius Galen Kaye
 Shochet², Harry
 Shoesmith, Harold Percy
 Sinson², Harry Abram
 Sinson², Julius Barnet
 Slocombe, Bernard Atkinson
 Smith, Jessie (s)
 Stockdale, George Vincent
 Swire, Frank (s)
 Sykes, Frank
 Symons, Hubert Wallace

Tasker, Robert Bertram
 Taylor, Herman Louis
 Taylor, John Edgar
 Thomas, John William
 Topham, Harold
 Topham, Richard Stanley (s)

Umanski, Augusta (s)

Waddington, Charles Grimshaw
 Waddington, Horace Victor (s)
 Walker, John Perry
 Walker, Thomas Lockwood
 Walton, Francis (s)
 Ward, Clifford
 Ward, Rowland
 Watson, George William
 Weber, Frederick William, M.D.

Germany

White, Leslie Gordon
 Wigglesworth, Frank
 Wilkinson, John
 Wilks, Harry
 Willans, Esmond Tetley
 Wilman, Joseph Burnett
 Wilson, Colin
 Wood, Bertram William Francis
 Wright, John

¹ Medical Scholar.

² Infirmary Scholar.

Number of Students

The following table shows the number of Students of different classes who attended the University of Leeds during the last two Sessions :—

Registered Students :	1909-10.	1910-11.
In Faculty of Medicine (including students who were also in attendance in the Faculty of Science) *** *** *** ***	138	151
In Faculties of Arts (including Commerce and Law), Science and Technology (including students also in attendance in the Faculty of Medicine) *** *** *** ***	817	778
	<hr/>	<hr/>
	955	929
Less deducted for students who attended in both the Faculties of Medicine and Science ***	22	28
	<hr/>	<hr/>
Total number of Registered students ... **	933	901
Occasional Students :		
In Faculties of Arts, Science, and Technology	50	55
Evening Students :		
In Faculties of Arts, Science, and Technology (excluding those who only attended short courses of lectures) *** *** ***	220	207
	<hr/>	<hr/>
	<u>1,203</u>	<u>1,163</u>

ENTRANCE SCHOLARSHIPS

The papers set for Entrance Scholarships will be found in the Matriculation Calendar.

DEGREE EXAMINATIONS

The Examination papers set at Degree Examinations are issued annually in volume form in September, and may be obtained from the Registrar by application, price 1s., or by post to any address in the United Kingdom, price 1s. 5d.

UNIVERSITY SOCIETIES, 1911-12

The sanction of the Senate is required to the Rules and Regulations of any new Society which it is proposed to establish.

The University Union. The University Union comprises the Cricket, Football (Rugby and Association), Hockey, Tennis, Lacrosse and Fives Clubs, and undertakes the management of the Gymnasium, the Fives Court, and the Debating Society. The Union has also the management of the University Athletic Ground, and undertakes the arrangement of the Athletic Sports, the *Conversazione*, and other entertainments.

The governing body of the Union consist of an Honorary President, Honorary Vice-Presidents, a Staff representative, an Hon. Treasurer, and a Committee of twenty-three students (*i.e.* thirteen men students from College Road departments, three women students from the Women's Representative Committee, and seven men students from the School of Medicine) elected annually.

The subscription to the Union is 10s. 6d. annually. It is payable to the Registrar of the University at the beginning of the session, with the class fees, and is compulsory on each registered student attending for more than six hours per week, with certain exceptions.

Membership of the Union carries with it membership of the various athletic clubs under its control, membership of the Debating Society, and the right of using the Common Rooms and the Gymnasium.

Handbooks, containing all information concerning the Union, its Rules, Officers, Athletic Clubs, and also the various Societies, are issued *gratis* to all members of the Union. They may be had on application to the Hon. Secretary or the Hall Porter.

Further information may be obtained from the Hon. Secretary of the Union.

Hon. President—His Grace the Duke of Devonshire, LL.D. *Hon. Vice-Presidents*—A. G. Lupton, LL.D., Pro-Chancellor; The Vice-Chancellor; Professor Grünbaum, M.D., Dean of the Faculty of Medicine. *President and Chairman of Committee*—F. M. Rowe.

Hon. Secretary—A. Sowden. *Hon. Treasurer*—Professor Connal. *Staff Representative*—Mr. Gillespie. *Committee*—Miss M. H. Briggs, Miss M. E. Jameson, Miss B. Taylor; Messrs. G. Atkinson, J. C. Banks, H. W. Coultas, G. H. Cowling, E. Cross, A. D. Clarke, H. Dircks, J. Huggins, L. Heidrich, G. L. B. James, W. G. A. Walker, and seven representatives from the Students' Representative Council of the School of Medicine.

The Women's Representative Committee. This Committee is annually elected by the Women Students. It has control of the Women's Common Rooms and appoints representatives on the University Union Committee and sub-committees.

President—Miss M. H. Briggs. *Hon. Secretary*—Miss M. E. Jameson. *Union Representative*—Miss B. Taylor. *Committee*—Misses G. Dearden, E. Jenkins, S. Levi, H. Thistlethwaite, and M. Varey.

The Debating Society. This Society meets at 5.15 p.m. on alternate Mondays in the first and second terms.

Every student who has paid the Union Fee is *ipso facto* a member of the society, no other subscription for election being necessary. *President and Chairman*—Professor Garstang. *Vice-President*—Professor Macgregor. *Hon. Secretary*—Mr. H. M. Holt. *Union Representative*—Mr. J. C. Banks. *Committee*—Messrs. C. P. Sweeting, W. C. Thomas and —. Wilson.

The Literary and Historical Society. This Society meets at 5 p.m. on alternate Mondays during the first and second terms for the reading of papers and discussions on literary and historical subjects. The annual subscription is 4s.

President—Mr. G. H. Cowling. *Vice-Presidents*—Miss D. M. Kirtland, Mr. A. Raisman. *Treasurer*—Miss Robertson. *Secretaries*—Miss I. Foggitt, Mr. W. Allott. *Committee*—The above and Miss G. M. Dearden, Miss C. R. Sampson, Messrs. E. Cross and T. Huffington.

The Society for Social Study. This Society has been formed for the purpose of obtaining a good understanding of social questions and schemes of social reform by means of lectures, discussions and other methods. The meetings of the society are open to all members of the University.

President—Mr. W. H. Perkins. *Vice-Presidents*—Miss Cooke, Miss M. E. Jameson, Professor Cohen. *Secretaries*—Miss A. W. Cramp, Mr. R. Harding. *Committee*—Misses G. M. Dearden, J. Greenwood and C. Levy, Messrs. W. Allott, C. P. Sweeting, and W. C. Thomas.

The Cavendish Society. The object of this Society is to promote the study of Chemistry, Pure and Applied, and Physics. The meetings are held during the first and second terms. Members take tea together at 5 p.m., after which papers are read and discussions take place. Any present or past student of the University is eligible for membership. Other persons, not eligible for Ordinary membership, may become Associate members subject to the discretion of the Committee. The

subscription for Ordinary and Associate members is 4s. ; for Life members, £1 1s. During the session excursions are made to neighbouring chemical works, dyehouses, &c.

President—Professor Green. *Vice-Presidents*—Messrs. A. Seymour-Jones, A. Appleyard. *Hon. Treasurer*—Mr. H. E. Woodman. *Hon. Secretary*—Mr. H. S. Houldsworth. *Committee*—Miss Walker, Messrs. W. R. Atkin, F. G. Rawling and J. H. Wilson.

Natural History Society.—All members of the University, past or present, interested in any branch of Natural History are eligible for membership. Papers on any subject connected with Botany, Geology or Zoology will be given and discussed, and objects of interest will be exhibited. The meetings (preceded by tea at 5.15 p.m.) will be held in the Botanical department at 5.45 p.m. on the first Friday in each month. One of the main aims of the Society is to effect a closer bond between past and present students. Excursions will be arranged during the summer term. The subscription is fixed at 2/6 per annum.

President—Prof. Garstang. *Vice-Presidents*—Prof. Kendall, Miss A. Peniston. *Hon. Secretaries*—Miss M. Hey, Mr. L. Holt. *Committee*—Misses M. H. Briggs, S. E. Chapman, S. M. McKee, E. M. Atkinson, Mr. F. W. Dry, and Mr. W. Stiles.

The Education Society. This Society holds two meetings in each of the first and second terms. At each of these meetings there is a lecture followed by discussion on some topic of interest to those who are, or likely to be, engaged in educational work. Professor Adams, of the London University, and the Rev. Father Woodlock are amongst those who have kindly promised to give lectures during the current session. The annual subscription is 2/6.

President—Mr. A. J. Monahan. *Vice-Presidents*—Professor Welton, Mr. Welpton, Mr. Turner, Miss Robertson, Miss Blackburn, Miss Parry. *Hon. Secretaries*—Miss C. Goldstone, Mr. J. H. Wilson. *Committee*—Miss Pickering, Miss M. Anderson, Mr. W. Gawthorpe and Mr. T. Pay.

The Engineering Society. This Society has for its object the discussion of subjects bearing upon Engineering and Applied Sciences, the visiting of works and other places of engineering interest, and the promotion of a friendly intercourse amongst its members. It consists of Ordinary, Associate, and Honorary Members and Associates. Any past or present day or evening student of the University is eligible for ordinary membership. Any person not eligible for ordinary membership, but who shall have been actively engaged in engineering for a period of not less than five years, or who shall have passed through an engineering training at any University or University College, is eligible as an Associate Member. Any person may be elected an Honorary Member. Any person is eligible as an Associate who is recommended by the Committee as a fit and proper person. Members are elected by ballot at the ordinary meetings. The ordinary meetings are held fortnightly at the University, the chair being taken at 7.30 p.m. Each Ordinary and Associate member pays an annual subscription of 5s.

(except present day and evening students, who pay 2s. 6d., and receive no notices of meetings), and each Associate not less than 10s. per annum.

President—Professor Goodman. *Vice-Presidents*—The Vice-Chancellor, Dr. Stroud, Professor A. Barr, Mr. Wilson Hartnell, Col. T. W. Harding, Mr. G. D. Aspinall Parr, Mr. Ewing Matheson, Mr. Hy. McLaren, Professor G. R. Thompson, Mr. E. J. Silcock, Mr. J. Gilchrist, and Mr. J. H. Wicksteed. *Hon. Secretary*—Mr. W. Rintoul. *Assistant Hon. Secretary*—Mr. E. H. Silcock. *Hon. Treasurer*—Mr. W. Gardner. *Assistant Hon. Treasurer*—Mr. G. W. Smith. *Committee*—Messrs. W. Bannister, H. W. Coultas, T. Hebblethwaite, L. Heidrich, A. Sowden, W. G. H. Walter, R. Stoltenhoff, H. McLaren, W. B. Odgers, S. J. Rayner, F. H. Walker, and A. Towler.

The Textile Society. The objects for which the Society is established are :

(a) To provide meetings for the discussion of all textile subjects ; (b) to stimulate interest among students, manufacturers, and others in all questions relating to textile industries, whether of a scientific, mechanical, or an artistic character ; (c) to provide textile journals for the use of members. The subscription of Members is 5s., Day students 3s. 6d., Evening students 1s. a year. Honorary and Life members one payment of £3 3s. Honorary members must be gentlemen who have distinguished themselves in the advancement of textile industries. Former and present students of the University, and gentlemen connected with textile trades generally, may be elected Life members.

Hon. Secretary—Thomas Hollis. *Hon. Treasurer*—J. W. Nixon.

The Agricultural Society. This Society exists for the purpose of fostering the social spirit among students of the Agricultural Department. Meetings are held at 6.30 p.m. on alternate Wednesdays during the winter session, when papers are read or debates take place on agricultural topics. Students of the University and other persons interested in the development of agriculture are eligible for membership. The minimum annual subscription is 1s.

President—Professor Seton. *Vice-Presidents*—Messrs. A. G. Ruston and H. Roebuck. *Hon. Treasurer*—Dr. Crowther. *Hon. Secretary*—Mr. G. B. Smith. *Committee*—Messrs. F. Barker, W. P. Barker, C. E. Goode, G. R. Haigh, A. D. R. Walbank.

The Christian Union (Men's Branch). Affiliated to the Student Christian Movement of Great Britain and Ireland. *President*—Mr. G. H. Cowling. *Secretary*—Mr. H. Hollings. *Assistant Secretary*—Mr. C. P. Sweeting. *Treasurer*—Mr. W. C. Thomas. *Bible Circle Secretary*—Mr. F. G. Conyers. *Missionary Study Secretary*—Mr. W. Gawthorpe. *Social Study Secretary*—Mr. R. Harding. *Prayer Meeting Secretary*—Mr. D. Woodroffe. *Foreign Students Secretary*—Mr. C. G. Brown. The Committee consists of the above.

The Christian Union (Women's Branch). Affiliated to the Student Christian Movement of Great Britain and Ireland. *President*—Miss C. Standing. *Secretary*—Miss M. Varey. *Treasurer*—Miss C. Armitage. *Bible Circle Secretary*—Miss A. Cramp. *Missionary Study*

Secretary—Miss H. Thistlethwaite. *Prayer Meeting Secretary*—Miss C. Reynolds. *Social Study Secretary*—Miss D. Kirtland. *S.V.M.U. Secretary*—Miss C. Mawson. *Magazine Secretary*—Miss M. Briggs.

Women's Discussion Society. This Society has been formed for the discussion of social, economic and political discussions affecting women. It aims at including all shades of opinion among its members and at giving an understanding of the conditions under which women work and of their economic position. The annual subscription is 1/-. *President*—Miss Cooke. *Secretary*—Miss G. M. Dearden. *Treasurer*—Miss A. W. Cramp. *Committee*—The above with Miss I. M. Garton and Miss D. Johnson.

The Leeds University Working Men's Club. The object of the club is to provide evening recreation for working lads who have left school. The club-rooms in Berking Avenue, York Road, are open every evening except Sundays, from 8 to 10. The rooms are under the supervision of a committee of the club, controlled by a committee of members of the University. In addition to various games, some intellectual occupation is usually afforded. The Secretary will be glad to furnish a copy of the annual report, and to supply additional information.

Hon. Secretary and Treasurer—Professor Cohen. *Committee*—The Vice-Chancellor, Professors Connal, Goodman, Grant, Hellier, and Smithells; Dr. Moorman, Messrs. E. Kitson Clark, T. H. Taylor and J. J. Wood.

Societies in School of Medicine

The Students' Representative Council.¹ Elected annually by the students of the Department of Medicine from amongst their own number.

It concerns itself with the affairs of the Medical Students, and appoints representatives to serve on the Committee of the University Union, a proportion of whose funds it has at its disposal.

The Secretary of the Council is *ex-officio* the Medical Secretary of the Union Committee.

The Council further appoints a sub-committee to manage the Students' Medical Society, and two of its number serve upon the Refectory Committee.

The Medical Society is managed by a Sub-Committee of the Students' Representative Council. Meetings are held on alternate Tuesdays during the first and second terms when papers dealing with subjects of medical interest are read and discussed. The session usually commences with an address, and there is an annual Prize Debate.

Royal Army Medical Corps Territorial Force (West Riding Division). Medical Students are invited to join this Corps. The active part of the drill season is from the beginning of May to the end of July. Camp is held usually during the first week in August. Instruction is given in First Aid to the wounded, nursing duties, cooking

¹ The Officers for 1911-12 are not elected in time for insertion in the Calendar.

for the personnel and sick, and water and sanitary duties with troops. For further information apply at the Headquarters, Harewood Barracks, Woodhouse Lane, at 8 p.m. any week-day, excepting Saturdays.

The following units are stationed in Leeds :—

1st West Riding Field Ambulance.

2nd „ „ „ „

No. 2 Northern General Hospital Nucleus.

A contingent of men for water duties.

A Territorial School of Instruction, for the R.A.M.C. (T.) of the West Riding Division Territorial Force, has its headquarters in Leeds.

Societies of Old Students

The Old Students' Association (Women). The aims of the Association are (1) to hold re-unions three times each session ; (2) to provide opportunities of communication between former students by means of a list of addresses to be put in a handbook containing also items of interest from former students, to be sent to all members every two or three years ; (3) to provide a loan fund (a) to enable any present student who is in need of pecuniary help to continue her course at College ; (b) to aid members of the Association who through illness are temporarily incapacitated from work. Subscriptions : life membership, 10s. ; annual, 2s.

President—Miss Robertson. *Secretary and Treasurer*—Miss E. M. Blackburn. *Assistant Secretary*—Miss K. L. Scholes. *Editor of Handbook*—Miss M. G. Findlay. *Committee*—Misses L. Allen, H. Coope, A. Crawshaw, F. Cuthbertson, M. S. Longstaff, M. Skinner.

The Leeds Day Training College Club. The objects of the Club are (1) to provide for a re-union in a social manner of the past students of the Training College, all of whom may become members of the Club ; (2) to supply the members with a means of communicating with each other privately, by the annual issue of a list of members and their addresses ; (3) to establish a fund which may be used at the discretion of the President for the relief of any past or present student of the Training College who may be in financial distress. Subscription—life membership 10s. ; annual, 1s.

President—Professor Welton. *Vice-Presidents*—Professors Connal, Kendall, Roberts, Rogers, Smithells, Stroud, Dr. Moorman, Dr. Derryhouse, Messrs. C. M. Gillespie, W. H. Davis, A. Greenwood, J. A. Lumbe, A. W. Priestley, A. J. Walker, W. P. Welpton, H. Hartley, H.M.I., J. Whaley, J. H. R. Appleyard, S. Feather. *Secretaries*—F. W. Turner, W. P. Welpton. *Treasurer*—W. P. Welpton. *Committee*—A. J. Walker, H. E. Rayner, W. S. Walbank, C. E. Moss, W. Ramshaw, A. Charlesworth, E. J. Edwards, H. Thompson, F. Horn, F. R. Townsend, J. W. Moulden, W. F. Fearnley, F. Hepworth, A. Hinchley, W. Hall.

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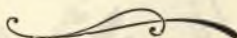
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