University College, London.

SESSION 1878–79.

FACULTY OF ARTS AND LAWS.

Dean.—Professor HENRY MORLEY.
Vice-Dean.—Professor ALFRED GOODWIN, M.A.

FACULTY OF SCIENCE.

Dean.—Professor ALEX. B. W. KENNEDY, C.E.
Vice-Dean.—Professor OLAUS HENRICI, PH.D., F.R.S.

Prospectus.

INTRODUCTORY LECTURE, in the Botanical Theatre, on Wednesday, October 2nd, at 3 P.M., by Professor HENRY MORLEY. Subject, "University College, London: 1828–1878."

Terms and Vacations.

The Session is divided into three Terms, as follows:

First Term, from Wednesday, October 2nd, until Saturday, December 21st;

Second Term, from Tuesday, January 7th, 1879, till Saturday, March 22nd;

Third Term, for Lectures, from Wednesday, April 16th, till Wednesday, June 18th: all the above dates being inclusive.

The Christmas vacation will begin on Monday the 23rd of December, and end on Monday the 6th of January. The Easter vacation will begin on Monday, March 24th, and end on Tuesday April 15th. All the above dates are inclusive. Whit Monday also is a Holiday.

Admission of Students.

The Deans and Vice-Deans will attend in the Council-Room, from 10 A.M. to 2 P.M., on Tuesday and Wednesday, October 1st and 2nd, for the purpose of giving advice and information to Students entering the College. Students are admitted without previous examination, to any Class or Classes that they may select. Before finally selecting their Classes, Students are strongly recommended to consult the Professors of the subjects they propose to study.

Classes in all subjects of instruction within the Faculties of Arts and Laws and of Science are open to both men and women, who are taught in some Classes together and in others separately.

Students, on applying to enter a class belonging to either of these Faculties, are required to sign an engagement, that they will conform to such regulations as have been or may be made for the maintenance of order in the College, and in the Classes which they attend.

All fees are to be paid in advance (*i. e.* at the beginning of the Session or Term on account of which they are due), at the Office of the College. Drafts should be drawn in favour of Mr. Harry Brown, Assistant Secretary and Accountant.

Within the first fortnight of attendance at any Class each Student is required to present to the Professor either a ticket for that class or a written statement from the Office, showing the reason why delay in taking out such ticket has been allowed.

Record of Attendance.

In most of the Classes belonging to the Faculties of Arts and Laws and of Science a record is kept of the attendance of the Students in the Lecture Rooms, and an abstract of these records is sent, soon after the end of every Half-term, to the parents or guardians of all Students under the age of 19 years. Similar abstracts are sent in the case of older Students, if specially asked for.

Class-Examinations and Prizes.

There is at the end of the Session an Examination in every Class by printed questions, to which written answers are given; from these answers it is determined to whom Prizes and Certificates of Honour shall be awarded. The questions set each year at these Examinations, together with those set at the various Examinations for Scholarships or other special Prizes, are published in the College Calendar for the following Session.

In addition to the above, there will be such other Examinations as the several Professors may judge to be necessary for aiding or ascertaining the progress of their pupils.

No Student is entitled to compete for a Prize or Certificate in any Class (except the Class of Analytical Chemistry) unless he has attended the Sessional Course of Lectures in the Class; or for any Prize which he has obtained in a previous Session.

A Student who has attended during the Session a higher and a lower Class on the same subject, may compete for a Prize or Certificate in the higher only of those Classes, unless the Session be the first in which he has attended the lower of the two Classes; in which case he shall be at liberty to compete in either Class.

Examinations for Degrees.

The Examinations for Degrees in Arts, Laws, Science, and Literature, and for Honours, Exhibitions, and Scholarships, conferred by the UNIVERSITY OF LONDON, take place annually as follows:—For Matriculation, in January and June; For B.A. and B.Sc., the First Examination in July and August, the Second in October and November; For M.A. in June; For LL.B., First and Second Examinations, and for LL.D., in January; For D.Sc. in June; For D.Lit., the First Examination in June, the Second in October.

Library.

The General Library is open to Students on week days throughout the Session from 9 A.M. till 5 P.M., except on Saturdays, when it closes at 2. During the Vacation it is open from 10 to 4 (Saturdays 10 to 1) except when closed for cleaning. Students are allowed, on certain conditions, to take books out of the Library for use at home. (For Regulations, see the College Calendar.)

Residence of Students.

UNIVERSITY HALL, adjoining the College, is designed for the residence of Students of University College, to whom it offers a Collegiate life analogous in some measure to that of the older Universities. Students residing in it are under the superintendence of Professor Beesly, Principal of the Hall. Particulars may be obtained on application.

A Register of persons who receive Boarders into their families is kept in the Office of the College; among these are some of the Professors and several medical gentlemen. The Register affords information as to terms and other particulars.

Refreshments.

A Steward is appointed to provide refreshments for Students, on his own account, at fixed prices.

Ladies' Common Room.

Separate accommodation and attendance are provided for the female Students in a Ladies' Common Room.

Occasional Visitors.

Occasional visitors are admitted to any Class, on sending in their names to the Professor.

During the Session, the office is open from 9 to 4 o'clock, except on Saturdays, when it closes at 1. During the Vacations it is open from 11 to 3 [on Saturdays 11 to 1].

Communications should be addressed to TALFOURD ELY, M.A., Secretary to the College.

PRIZES and SCHOLARSHIPS.

I. ANDREWS PRIZES.

(A) *Prizes for New Students.*

(i) Three Prizes of £20 each will be awarded annually upon examination, as follows:—

One for Classics.

One for any two of the three subjects, Mathematics, Physics, Chemistry.

One for Three Languages: (*a*) English, (*b*) either Latin or Greek, (*c*) French, or German, or Italian.

(ii) The competition is limited to those who have not previously been Students of the College; and no Competitor can obtain more than one Prize.

(iii) Candidates must send written notice of their intention to compete, stating in what subjects they intend to present themselves for examination, with certificates of age and good conduct, to the Secretary, on or before the 24th of September in each year.

(iv) The next Examination will take place at the College on the 26th and 27th of September, 1878.

Prizemen, 1877:—E. P. JACOBSEN. F. KNIGHT.

(B) *Prizes for Students of One Year's Standing.*

At the end of each Session, two Prizes of £30, and one Prize of £20 will be awarded to those first-year Students who shall be recommended to the Council by the Faculties of Arts and Laws and of Science as having distinguished themselves most by their answers at the Sessional Examinations of the Classes, and by their good conduct during the Session.

Prizemen, 1878:—E. P. JACOBSEN. M. W. RICHMOND.

(C) *Prizes for Students of Two Years' Standing.*

At the end of each Session, one Prize of £50, and one of £40, will be awarded to those second-year Students who shall in the same way have been recommended to the Council by the aforesaid Faculties.

Prizemen, 1878:—L. H. EDMUNDS. D. S. MACCOLL.

General Regulations applicable to the above Prizes.

1. Should none of the Competitors for any Prize evince sufficient merit, the Examiners may recommend that such Prize be not awarded.

2. No student is eligible to receive an Andrews Prize who was more than 18 years of age on the 1st of October in the year in which such Student first entered the College Classes.

3. Every Student who receives an Andrews Prize will be required to attend during the ensuing Session at least three courses, consisting altogether of not less than 200 Lectures.

4. The Prizes will be paid at the end of the Session succeeding the examinations at which they are gained; but on a Student's application to the Committee of Management, the whole or any part of his or her Prize may be taken out in Class Tickets at the beginning of the Session.

II. MALDEN MEDAL AND SCHOLARSHIP.

For Students of Three Years' Standing.

III. JEWS' COMMEMORATION SCHOLARSHIP.

£15 a year, tenable for two years.

Scholars { 1877:—W. S. Meyer.
1878:—E. P. Jacobsen.

IV. RICARDO SCHOLARSHIP IN POLITICAL ECONOMY.

This Scholarship, of £20 a year, tenable for three years, will be competed for in November 1878.

Scholar, 1875:—W. N. Woods.

V. JOSEPH HUME SCHOLARSHIPS.

A Scholarship in Jurisprudence, of £20 a year, tenable for three years, will be competed for in November 1879.

Scholar, 1876:—Eliza Orme.

A Scholarship in Political Economy, of £20 a year, tenable for three years, will be competed for in November 1880.

Scholar, 1877:—J. G. Schurman.

VI. HOLLIER SCHOLARSHIPS, ONE FOR GREEK AND ONE FOR HEBREW.

These are tenable for one year only; and their value is at present about £60 each.

Scholars, 1878:—W. S. Meyer (Greek). Wolf Defries (Hebrew).

VII. CLOTHWORKERS' COMPANY'S EXHIBITIONS FOR CHEMISTRY AND PHYSICS.

The Company have founded in University College two Exhibitions of £50 a year, tenable for two years, for proficiency in the above subjects.

Exhibitioners { 1877:—H. E. Harrison.
1878:—L. H. Edmunds.

VIII. MAYER DE ROTHSCHILD EXHIBITION.

This Exhibition, of the annual value of £50, is awarded as the highest Prize in the Classes of Pure Mathematics.

Exhibitioner, 1878:—G. W. von Tunzelmann.

IX. FIELDEN SCHOLARSHIPS IN GERMAN AND FRENCH.

At the close of every Session, two Scholarships, one of £15 and one of £10, will be given in the Junior Classes of German and French respectively, and one Scholarship of £25 in the Senior Class of each of those subjects.

Senior Scholars, 1878:—

ALEXANDER MITCHELL (German). D. S. MACCOLL (French).

X. HEIMANN MEDAL.

A Silver Medal in memory of the late Professor Heimann, founded by his children, will be awarded annually as the first Prize in the Senior Class of German.

Medallist, 1878:—ALEXANDER MITCHELL.

XI. WEST SCHOLARSHIP IN ENGLISH.

£30 for one year.

XII. TUFFNELL SCHOLARSHIPS.

A Tuffnell Scholarship of £100, tenable for two years, will be awarded annually, alternately for distinction in Analytical and Practical Chemistry and in General Chemistry.

XIII. JOHN STUART MILL SCHOLARSHIP IN PHILOSOPHY OF MIND AND LOGIC.

A Scholarship of £20, tenable for one year, will be awarded annually.

The detailed Regulations applicable to the above Scholarships &c., together with the Examination Papers on which the last awards were made, are printed in the College Calendar. Separate copies of the Regulations concerning the several Scholarships &c. may also be had on application at the Office of the College.

SUBJECTS AND TIMES OF LECTURES.

Classes that are not open to both Men and Women are specially indicated.

LATIN.

Professor ALFRED GOODWIN, M.A., Fellow of Balliol College, Oxford.

I. CLASSES FOR STUDENTS PROCEEDING TO THE MATRICULATION AND B.A. EXAMINATIONS OF THE UNIVERSITY OF LONDON.

A. For Matriculation.

Tuesday and Thursday, from 10 to 11 (*Room* 1); Friday, from 12 to 1 (*Room* 2).

SUBJECTS:

On Tuesday and Thursday { CÆSAR, De Bello Gallico, Books III. and IV., *in the First Term.* / CICERO, De Senectute and In Catilinam I., *alternately, in the Second and Third Terms.*

On Friday, Latin Grammar and Exercises.

The Lectures on October 3 *and January* 7 *will be introductory to the general work of the Class.*

Students are required to construe in Lecture; and written examinations on the Bookwork of the Class are held fortnightly.

Fees:—for one Term, £2 2*s.*; for the Second and Third Terms together, £3 13*s.* 6*d.*

B. For 1st B.A. Pass Examination.

Monday and Wednesday (*Room* 1); Friday (*Room* 2): from 12 to 1.

SUBJECTS:

On Monday and Wednesday { HORACE, Satires; and CICERO, De Divinatione, II., alternately.

On Friday, Grammar; Translation of English passages into Latin.

The Lecture on October 3 *will be introductory to the general work of the Class.*

Students are strongly recommended to use the Text-editions of the Teubner series, procurable from any foreign bookseller. The same rule as to construing and examinations is observed in this as in the Matriculation Class.

Fees:—for one Term, £2 12*s.* 6*d.*; for the Session, £6 6*s.*

For Combination-fees, to Students desirous of taking this and the following Class together, see next page.

C. For 1st B.A. Honours and 2nd B.A. Pass and Honours Examinations.

Monday, Tuesday, Wednesday, Thursday, Friday, from 11 to 12. *Room* 2.

SUBJECTS:

In the First Term:—

On Monday and Wednesday: TERENCE, Hecyra.
On Tuesday and Thursday: LIVY, Book IX.

In the Second Term:—

On Monday and Wednesday { VIRGIL, Eclogues and part of Æneid VI.
On Tuesday and Thursday: CICERO, Pro Cluentio.

In the Third Term:—

On Monday and Wednesday { VIRGIL, remainder of Æneid VI.; HORACE, Epistles.
On Tuesday and Thursday: CICERO, De Oratore, I.
On Friday, throughout the Session, Latin Composition.

The Lectures on October 3, *January* 7, *and April* 16, *will be introductory to the general work of the Class.*

Fees:—for one Term, £3 3*s*.; for the Session, £7 7*s*.

Students desirous of attending both this and the preceding Class can do so on payment of the following Combination-fees:—

	For a Term. £	*s*.	*d*.	For the Session. £	*s*.	*d*.
For all Lectures in both Classes	5	5	0	11	11	0
For all Lectures in B and half the Book Lectures in C	3	13	6	9	9	0

II. ELEMENTARY CLASS. *Room* 1.

Monday and Wednesday, from 10 to 11.

In this Class, no previous knowledge of Latin being assumed, the Language will be taught from the beginning on the basis of Comparative Philology and Grammar.

It is expected that the acquirements of the Class at the end of the Session will be adequate to the standard of Matriculation in the University of London; and the Latin subjects for that Examination in June 1879 will be read in this Class during the latter part of the Session.

Fee for the Session, £3 13*s*. 6*d*.

III. HISTORY OF ROMAN LITERATURE.

Tuesday, from 12 to 1. *Room* 1.

The Period to be treated of this Session will be thus divided:—

In the First Term: The Beginnings of the Literature: Hymns, Laws, Inscriptions.

The Early Drama, Epos, Satire.

In the Second Term: Early Oratory and History.
The Ciceronian Age.

In the Third Term: The Ciceronian Age continued.
The Augustan Age.

Fees:—for one Term, £1 11*s.* 6*d.*; for the Session, £3 3*s.*

For Combination-fees, see next page.

IV. LATIN PHILOLOGY.

Thursday, from 12 to 1. *Room* 1.

In the First Term: The Place of Latin in the Indo-Germanic Family.
Latin and the Italian Dialects.
The Latin Alphabet in Form and Pronunciation.
Accent.
Formation of Words.
Nouns.

In the Second Term: Nouns continued.
Gender, Number, Case, Declension.
Adjectives.
Pronouns.
Verbs.

In the Third Term: Verbs continued.
Conjugation, Mood, Tense, Person-endings.
The Infinitive.
Suffixes.

Fees:—for one Term, £1 11*s.* 6*d.*; for the Session, £3 3*s.*

For Combination-fees, see next page.

V. TRANSLATION AT SIGHT.

Friday, from 9.30 to 11. *Room* 2.

Copies of a moderately difficult extract from a Latin author (prose and verse alternately) are distributed to the Class, who then employ an hour, with the help of a dictionary, in writing a translation of the piece. The returning of this translation, with corrections and remarks, occupies the half hour from 9.30 to 10 at each subsequent meeting.

Fees:—for one Term, £1 11*s.* 6*d.*; for the Session, £3 3*s.*

For Combination-fees, see next page.

VI. EXTRA CLASS.

Wednesday, from 1 to 2. *Room* 2.

The Lectures in this Class will deal with Questions of Higher Scholarship and Criticism, and Topics of collateral interest.
In the first Term, the initial subject will be "Roman in relation to Greek Mythology."

Fees:—for one Term, £1 11*s.* 6*d.*; for the Session, £3 3*s.*

Students desirous of attending two or more of the Classes III., IV., V., VI., can do so on payment of the following Combination-fees:—

	For a Term. £	s.	d.	For the Session. £	s.
For Classes III., IV., V., and VI. together	5	5	0	9	9
For any three of them	3	13	6	7	7
For any two	2	12	6	5	5

GREEK.

Professor The Rev. W. WAYTE, M.A.

I. SENIOR CLASS. *Room* 6.

Monday and Friday, from 1 to 2; Tuesday, Wednesday, and Thursday, from 10 to 11.

First Term: HERODOTUS, Book VII.
Second Term: EURIPIDES, Hippolytus.
Third Term: DEMOSTHENES, Oration on the Embassy.
Composition weekly.

Fees:—for the Session, £8 8*s.*; for a Term, £3 3*s.*

The subjects for the First and Third Terms are selected from the Honours List of the University of London. That for the Second Term is the Greek subject for Second B.A.

II. JUNIOR CLASS. *Room* 6. [*Men.*]

Monday, Tuesday, Wednesday, Thursday, and Friday, from 11 to 12.

First Term: ODYSSEY, Book XIV.
Second Term: ILIAD, Book XXIV.
Third Term: XENOPHON, Anabasis, Book III.
Composition weekly.

Fees:—for the Session, £8 8*s.*; for a Term, £3 3*s.*

The subject for the First Term is that set by the University of London for the January Matriculation; for the Second Term, that for the First B.A. Examination; for the Third Term, that for the June Matriculation.

III. EXTRA CLASS. *Room* 6. [*Men.*]

Monday and Wednesday, from 3 to 4.
Subjects arranged each Term with the Class.

Fees:—for the Session, £3 3*s.*; for a Term, £1 11*s.* 6*d.*

In the Junior Class the subjects and the mode of treatment are regulated by the examinations of the University of London. In the Senior and Extra Classes, while these examinations are taken into account, Philology and the History of Greek Literature will be included, and the requirements of students reading the higher Classics with other objects will, as far as practicable, be consulted.

ADVANCED COURSE. *Room* 6. [*Women.*]

Tuesday and Thursday, from 3 to 4.

The subjects will be selected from those set in the Public Examinations open to Women; and it is hoped that, after a time, the students may be able to join the ordinary Senior Class.

Fees:—for the Session, £4 4*s.*; for a Term, £1 11*s.* 6*d.*

ELEMENTARY COURSE. *Room* 6. [*Women.*]

Tuesday and Thursday, from 4 to 5.

It is expected that those who go through this Course will be able to begin Xenophon before the end of the Session.

Ladies who wish to learn Greek are invited to attend the first meeting of this Class, which they can do without eventually joining it. The method of instruction to be adopted will then be explained.

Fees:—for the Session, £4 4*s.*; for a Term, £1 11*s.* 6*d.*

SANSKRIT.

Professor ERNST HAAS, PH.D.

I. SENIOR CLASS. *Room* 23.

Tuesday and Thursday, 4 to 5.

Explanation of Pân'ini, or of selected Hymns of the R'igveda, with Sâyan'a's commentary.

Fees:—for the Session, £5 5*s.*; for a Term, £2 2*s.*

II. JUNIOR CLASS. *Room* 23.

Monday, Wednesday, and Friday, 4 to 5.

Grammar; The Hitopades'a; and Selections from the Mahâbhârata, and the Institutes of Manu.

Fees:—for the Session, £8 8*s.*; for a Term, £3 3*s.*

HEBREW.

GOLDSMID PROFESSORSHIP.

Professor The Rev. D. W. MARKS.

SENIOR CLASS. JUNIOR CLASS.

A lower Junior Class will be formed, if required, for beginners.

Subjects to be determined and hours fixed when the Classes meet.

Fees:—for each Class: for the Session, £4 4*s.*; for a Term, £1 11*s.* 6*d.*

A Course on Hebrew Literature from the close of the Hebrew Canon till the beginning of the Fifth Century will be delivered should a sufficient number of Students wish to attend it. Days and hours to be arranged hereafter. Fee, £3 3*s.*

ARABIC LANGUAGE AND LITERATURE.

Professor CHARLES RIEU, Ph.D.

I. JUNIOR CLASS.—Monday and Thursday, from 4 to 5. *Room* 2.

SUBJECTS:—Grammar (Grammar of the Arabic Language, by Dr.

William Wright. Lond. 1859); Dr. Forbes's Arabic Reading Lessons; Alf Lailah wa-lailah.

II. Senior Class.—Tuesday and Friday, from 9 to 10 A.M. *Room* 3.
Subjects:—Kalīlah wa-Dimnah; Mufākahat ul-Khulafā; Makāmāt al-Harīri; the Hamāsah of Abu Tammām.

Fee for each Class, £6 6*s*.

PERSIAN.

Professor Charles Rieu, Ph.D.

I. Junior Class.—Wednesday and Saturday, from 4 to 5. *Room* 2.
Subjects:—Grammar and extracts (Dr. D. Forbes's Grammar); the Gulistān of Sa'dī.

II. Senior Class.—Monday and Thursday, from 9 to 10. *Room* 3.
Subjects:—Anwāri Suhailī; Yūsufu Zulaikhā; Diwan of Hāfiz.
Fee for each Class, £6 6*s*.

CHINESE.

Professor The Rev. Samuel Beal, B.A.

Professor Beal proposes to deliver two Lectures on "Chinese Buddhist Literature," on Tuesday, October 8th, and Thursday, October 10th, at 3 P.M.

The Public are invited to attend these Lectures.

After the second Lecture names will be received with a view to the formation of a Chinese Class.

Fees:—for the Session, £5 5*s*.; for a Term, £2 2*s*.

ENGLISH LANGUAGE AND LITERATURE.

Professor Henry Morley.

Assistant, Edward Arber, F.S.A.

LANGUAGE. *Room* 3.

I. History and Structure of the English Language.

A. Monday and Wednesday, from 4 to 5. [*Men.*]
This Course will connect a historical sketch of the development of English with an advanced study of English Grammar. Upon each question discussed an account will be given of the most recent teaching of English and foreign grammarians and philologists.

The Course is designed to continue education in English from the point at which school teaching usually ends; and although it will contain much more than is required by a Student who has to pass in English at the Matriculation Examination of the University of London, it will include all that is necessary for that purpose.

B. The same Course of instruction will be given separately to Women on Monday and Wednesday, from 10 to 11. *Room* 19.

II. First English (*Anglo-Saxon*).

Monday, from 5 to 6.

First Term: First English Grammar, with readings and some account of the Literature. *Second and Third Terms*: Beowulf.

III. The Relation of Icelandic to First English.

Tuesday, from 5 to 6.

First Term: Old Icelandic Grammar, with readings and some account of the Literature. *Second and Third Terms*: the Prose Edda.

IV. The Relation of Mœso-Gothic to First English.

Wednesday, from 5 to 6.

In the *Third Term* only. An elementary sketch of Mœso-Gothic Grammar, with some readings from Ulfilas.

Classes II., III., IV. are in aid of a more advanced study of English. Classes III. and IV. are open only to those who are, or have been, students in Class II. All Students of Language will find it useful to attend Class II. in their first year, during the First Term.

V. Early English.

Tuesday, from 12 to 1.

The Growth of English in the Fourteenth Century: illustrated by Sections I.–XI. of Morris and Skeat's Specimens of Early English from A.D. 1293 to A.D. 1393, and by Chaucer's Prologue and Nun's Priest's Tale, and Pierce Ploughman's Crede.

VI. English Composition.

A. Wednesday, from 1 to 2. [*Men.*]

This Class is for practice in Composition with regard only to Style, and for a study of its principles. The lectures will include a sketch of the History of Style in England.

B. The Composition Class for Women will meet on Tuesday, from 6 to 7. [*Mathematical Theatre.*]

LITERATURE. *Room* 3.

VII. Periods.

A. From the Accession of Edward VI. to the Death of Elizabeth. A.D. 1547 to A.D. 1603. Monday and Tuesday, from 3 to 4. [*Men.*]

B. From the Restoration to the Death of Queen Anne. A.D. 1660 to A.D. 1714. Tuesday, from 2 to 3. [*Men.*]

C. [*in Room* 19]. From the Accession of George III. to the Battle of Waterloo. A.D. 1760 to A.D. 1815. Monday and Wednesday, from 11 to 12. [*Women.*]

D. Characteristics of our Literature since 1815. Wednesday, from 3 to 4.

VIII. Single Works.

First Term: Shakespeare's Henry V. and Othello. *Second and Third Terms*: Milton's Areopagitica; Addison's Essays in the "Spectator." Tuesday, from 4 to 5.

IX. Teachers' Class of English Literature. *Mathematical Theatre.* [*Women.*]

This Class is designed especially for Teachers and Governesses. Its object is to assist Teachers of English by calling attention to main points in the History of our Literature, and to the different Methods

of Study. Masterpieces suitable for school or home use, and belonging to various periods of our Literature, are taken for critical examination, sometimes of their language, sometimes of their external history, and sometimes of their inner spirit. The topics of the Lectures are changed every year, and always include the books to be read by those who are preparing for Cambridge and Oxford Local, London University, and other Public Examinations open to Women. There is occasional discussion also of books written for the use of Students. Monday, from 6 to 7 P.M., beginning on the 8th of October.

X. EXERCISE CLASS. [*Men.*]

Mr. EDWARD ARBER will attend in the English Class Room every Thursday afternoon during the First and Third Terms, and every Friday in the Second Term, from 2 to 5, to give tutorial aid, by written and oral examination, conversation, and free answering of questions. From 2 to 4 attention will be paid to that part of the work of the English Classes which is required by Students preparing for the First B.A. Pass and Honours Examinations. From 4 to 5 the tutorial work will be planned to assist Students preparing for Matriculation. All written work produced during these hours will be read by Professor Morley, who will be enabled also, by a short weekly report, to assist Mr. Arber in removing difficulties.

An Exercise Class for Women will be formed if there should be demand for it.

Attendance at three Lectures a week counts as a Course in the examinations for the College Prizes, but any one of the above sections may be taken separately or combined with others. Proficiency in First English will be required of those who compete for the prize given by the Early English Text Society "to the best pupil in an examination in English before Chaucer."

Fees for the Session:—for one Lecture a week, £3 3*s.*; for two Lectures a week, £5 5*s.*; for Class VII. C, £3 3*s.*; Class IX., £1 1*s.*; for each additional Lecture a week, £1 1*s.*

Fees for a Term:—for one Lecture a week, £1 1*s.*; for two Lectures a week, £2 2*s.*; for Class VII. C, £1 11*s.* 6*d.*; for each additional Lecture a week, 10*s.* 6*d.*

Perpetual to all the English Lectures, £12 12*s.*

For the Exercise Classes:—for the Session, £2 2*s.*; for a Term, £1 1*s.*

FRENCH LANGUAGE, HISTORY AND LITERATURE.

Professor CH. CASSAL, LL.D.

I. JUNIOR CLASS: Monday 2 to 3; [*Men*]: Wednesday and Friday, 3 to 4.

II. SENIOR CLASS: Monday, Wednesday, and Friday, from 2 to 3.

III. FRENCH LITERATURE AND COMPOSITION [*Women*]: Monday, 3 to 4.

IV. FRENCH LANGUAGE [*Women*]: Saturday, 12.30 to 1.30.

All in Room 18.

The groundwork of the French studies will be a COMPLETE COURSE OF FRENCH GRAMMAR (on Monday, from 2 to 3), treated historically and scientifically with ample illustrations. These lectures, based upon, and keeping pace with the progress of the science of Language, will be delivered on Mondays to all the Classes; they are essential for

all Students who wish to obtain a thorough practical and theoretical knowledge of the French Language.

The other Lectures (Wednesdayand Friday) will be divided as follows:—

JUNIOR CLASS. [*Men.*]

Wednesday and Friday, from 3 to 4.

Application of the rules explained in the Lectures on Grammar; Reading aloud; Pronunciation; Translating from some of the best prose writers; Conversation; Exercise in written and oral translation into French; Composition; Dictation; Principles of Etymology; Idiom.

This Course meets the requirements of Students preparing for the Matriculation and First B.A. Examinations in the University of London, but it includes more than is actually required.

SENIOR CLASS.

Wednesday and Friday, from 2 to 3.

Reading, translation, and critical study of the most remarkable French authors in prose and poetry (principally from the works treated in the Lectures on Literature); Advanced Course of Translation into French; Practice in free Composition on Historical and Literary subjects; Application of rules; Speaking; Explanation of the Grammatical and Idiomatic Difficulties of the language; Lectures on the History of France and of French Literature.

Students who wish for a higher degree of proficiency in French, or who are preparing for the higher public Examinations, should attend this Class.

The Lectures on History and Literature are delivered in French, and can easily be followed by moderately advanced pupils, and by such as have attended regularly for some time the Exercise and Grammar Classes. The Class is entirely conducted in French as soon as it is sufficiently advanced.

The extent of the Subjects will be regulated in each Class by the previous attainments of the Students. The preparation for public Examinations, especially those of the University of London, will be taken into account, as well as the wishes of those who are studying French for purposes of general culture or with a view to its practical employment in business.

The Students are requested to ask the Professor's advice as to the Class they should attend. Both Classes will, from time to time, be examined, orally and by papers, with a view to ascertaining their progress and to preparing them for public examination.

III. FRENCH LITERATURE AND COMPOSITION. [*Women.*]

Monday, 3 to 4.

Subject for the Session 1878-79. The History of French Literature at the time of the RENAISSANCE (16th Century); and during the CLASSICAL PERIOD, from *Malherbe* to the death of Louis XIV. (1600-1715), with special study of the best writers—Montaigne, Rabelais, Ronsard, and the *Pléiade*, Corneille, Racine, Molière, Lafontaine, Boileau, Descartes, Pascal, Bossuet, Fénelon, La Bruyère, &c.

Ladies attending the Class will be invited to write out compositions

(in French) on the subjects treated; and the Lectures will from time to time be followed by explanations of grammar and style, as exemplified by the compositions.

The Lectures will be delivered in French. The explanations of grammatical and idiomatic difficulties &c. will, so long as it is found necessary, be given in English.

IV. FRENCH LANGUAGE. [*Women.*]

Saturday, 12.30 to 1.30.

Translation from English into French and from French into English. Exercises in Oral Translation and Conversation. Dictation. Application of the rules explained in the Lectures on grammar. Reading and translating from some of the best French writers. Explanation of Idioms.

The requirements of Public Examinations will be taken into account.

Fees:—for Junior or Senior Class, including the Course of Grammar (three Lectures a week), for the Session, £6 6*s*.; for a Term, £2 12*s*. 6*d*.

For the Monday Course of Literature separately, for the Session, £3 3*s*.; for Students attending three other Lectures weekly, £1 1*s*.; for a Term, £1 11*s*. 6*d*.

For the Literature (Monday, 3 to 4), Grammar (Monday, 2 to 3), and Saturday Special Classes, for the Session, £6 6*s*.; for a Term, £2 12*s*. 6*d*.

GERMAN LANGUAGE AND LITERATURE.

Professor FRIEDRICH ALTHAUS, Ph.D.

I. JUNIOR CLASS. *Room* 18. [*Men.*]

Monday and Friday, from 10 to 11, and Thursday, from 4 to 5.

The studies carried on in this Class embrace a complete course of Grammar, illustrated by written and *viva voce* Exercises, together with the reading and explanation of some of the easier works of the best German authors. In its general character the course meets the requirements of Students preparing for the *Matriculation* and the *First B.A. Pass Examination* in the University of London.

II. SENIOR CLASS. *Room* 18.

Monday, Wednesday, and Friday, from 9 to 10.

This Class is so arranged as to suit Candidates for the *First and Second B.A. Honours Examination* in the University of London.

SUBJECTS:—General repetition and study of the higher branches of Grammar; written and *viva voce* Translations from English prose-writers; Exercises in Free Composition on given themes; Reading of the more difficult works of some of the best German Authors; and Lectures on the History of German Literature, special attention being paid to those parts required for the Second B.A. Honours Examination in the University of London. German is generally spoken in this Class, and occasional conversations and examinations are held with reference to the subjects treated in the Lectures.

Fees for each Class:—for the Session, £6 6*s*.; for a Term, £2 12*s*. 6*d*.

III. GERMAN LITERATURE. *Room* 19. [*Women.*]

Wednesday, from 3 to 4.

Eighteen Lectures on the Romantic School (1800–1830).

The brothers Schlegel, Tieck, Novalis, Arnim, Brentano, Hoffmann, Werner, Fouqué, &c.

These Lectures will be given during the First and Second Terms, beginning on October 23rd and on January 15th. They will be delivered in German, and be accompanied by readings from the works of the Poets.

Ladies desirous of writing compositions, in German, on the subjects treated in the Lectures, will have their work corrected and returned to them, with occasional explanations on points of Grammar and style.

Fees:—for the Course, £2 2*s.*; for one Term, £1 11*s.* 6*d.*

ITALIAN LANGUAGE AND LITERATURE.

Professor Cav. GIROLAMO VOLPE.

I. JUNIOR CLASS.

Eton Italian Grammar by Volpe; Biaggi, Prosatori Italiani. *Third Term*: Tasso, Gerusalemme Liberata.

II. SENIOR CLASS.

FIRST COURSE.—Translation *viva voce* from English into Italian, with copious grammatical explanations. Prose Reading: Manzoni's 'I Promessi Sposi.' Composition.

SECOND COURSE.—Studies on Dante (La Divina Commedia), and on Tasso (La Gerusalemme Liberata). Times to be arranged.

As soon as the Class is competent, the instruction will be given in Italian.

Fees:—for either Course, for the Session, £2 12*s.* 6*d.*; for a Term, £1 1*s.* For both Courses, for the Session, £4 4*s.*; for a Term, £1 11*s.* 6*d.*

Students wishing to enter any of the Classes are requested to meet the Professor at the College on Monday, October 7th, at 3.30, in order to enable him to fix the days and hours of the Lectures.

BARLOW LECTURES.

A course of Lectures on Dante's 'Divina Commedia,' open to the Public without payment or tickets, will be given; probably in the Third Term.

ANCIENT AND MODERN HISTORY.

Professor EDWARD SPENCER BEESLY, M.A.

I. **Ancient History.** *Room* 19.

Before Christmas a Course of about Ten Lectures on the Progress of Civilization in Primæval times.

II. **Modern History.** *Room* 19.

After Christmas a Course of about Fifteen Lectures on English History, from 1660 to 1714, being the subject for English Honours in the First B.A. Examination of the University of London in 1879. Text-book recommended, 'English History for Public Schools,' by J. F. Bright, vols. ii. and iii.

Saturday, from 12 to 1.

Fees:—for the First Course, £1 1*s.*; for the Second, £1 11*s.* 6*d.*; or for both Courses, £2 2*s.*

PHILOSOPHY OF MIND AND LOGIC.

GROTE PROFESSORSHIP.

Professor G. C. ROBERTSON, M.A.

I. GENERAL COURSE. *Room* 1.

First Term.

Philosophy of Mind.—

Lectures: Monday, Tuesday, Wednesday, Thursday, from 4 to 5, beginning on Monday, October 7th.

Exercises: Tuesday and Thursday, from 2 to 3.

Second Term.

Logic.—

Lectures: Monday, Tuesday, Wednesday, Thursday, from 4 to 5.

Exercises: Tuesday and Thursday, from 2 to 3.

Third Term.

History of Philosophy.—

Lectures: Tuesday and Thursday, from 4 to 5.

Ethics.—

Lectures: Wednesday, from 4 to 5.

Fees:—for the Session, £6 6*s.*; for the First or Second Term, £3 3*s.*; for the Third Term, £2 2*s.*

The Lectures on PHILOSOPHY OF MIND will be mainly *psychological*, aiming at the exposition of a strictly scientific doctrine of Mind, as including Sense, Intellect, Emotion and Will.

The Lectures on LOGIC will embrace both Deduction and Induction, with the general doctrine of Scientific Method.

The fundamental questions of General Philosophy, opened up in the earlier parts of the Course, will be more expressly treated in the Lectures on HISTORY OF PHILOSOPHY. Attention will chiefly be given to the Modern Period (beginning with the 17th century).

In the Lectures on ETHICS, the chief Moral Theories will be subjected to critical review, with the object of disengaging the central questions of ethical science.

The GENERAL COURSE is intended primarily for Elementary Students, including Candidates for the B.A. and B.Sc. Degrees of the University; but the higher requirements of Candidates for Honours

and for the special Degree of M.A. (Branch III.) will be kept in view throughout, and their reading will be specially directed.

Students will be expected to attend the (oral and written) Exercises as regularly as the Lectures; but exemption from this part of the work may be asked for at the beginning of a Term. In the Third Term no hours are set apart for Exercises, but subjects belonging to the work of the first two Terms will be prescribed from time to time to be written upon at home.

II. ADVANCED COURSE. *Room* 1.

Third Term.

History of Philosophy.—

Lectures: Tuesday and Thursday, from 2 to 3.

Fee, £2 2*s.*; to Students who enter for the whole Session, £1 1*s.*

This Course is intended for the higher class of Students, including Candidates for B.A. and B.Sc. Honours, and for the M.A. Degree. The subject of the Lectures in 1879 will be that prescribed in History of Philosophy for the M.A. Degree (Branch III.) in that year: HUME AND KANT.

Perpetual Fee for admission to *both* Courses, £10 10*s.*

POLITICAL ECONOMY.

Professor W. STANLEY JEVONS, LL.D., M.A., F.R.S.

Room 6.

A Course of about Forty Lectures will be given on Mondays and Wednesdays, from 5 to 6, commencing on Wednesday, 9th October.

HISTORY OF POLITICAL ECONOMY.—During the present Session special attention will be paid to the history of the doctrines and literature of the science. The Lectures will include an elementary exposition of the doctrines; but the progress of knowledge in respect to the principal points will afterwards be traced in special historical lectures interposed at suitable intervals.

SUBJECTS:—Definition, relations, and divisions of the science. The theory of utility; the laws of consumption. Definition of wealth.

Production of wealth; labour, natural agents, and capital. The division of labour.

Capital; fixed and circulating capital.

Distribution; the theories of wages, interest, and rent; criticism of the wage-fund theory.

Value and its relation to labour and utility, including a critical review of the principal doctrines concerning the nature of value, with special reference to the opinions of Say, Ricardo, Senior, Mill, Cairnes, Walras. Exposition of the mathematical theory of value.

Money, banking, the foreign exchanges.

Commercial fluctuations, manias, and crises.

The mercantile theory; free trade, and the advantages of commerce.

The functions of government; taxation.

Fees:—for the Course, £3 3*s.*; for either Term, £2 2*s.*

MATHEMATICS.

Professor Olaus Henrici, Ph.D., F.R.S.

Assistant, Percy J. Harding, M.A.

I. LOWER JUNIOR CLASSES (Mr. Harding).

A. Arithmetic, Algebra, and Geometry. *Room* 5. [*Men.*]

Monday, Wednesday, and Thursday, from 1 to 2.

A Course of Lectures and Exercises, with occasional Examinations in Arithmetic, Algebra, and Geometry. The Course will be adapted to Students who are beginning Algebra and Geometry, and will include all the Mathematical subjects of the Matriculation Examination of the University of London.

First Term: Geometry.

Second Term: Arithmetic and Algebra.

Third Term: A continuation and revision of all the preceding work.

Fees:—for the Session, £6 6*s*.; for a single Term, £2 12*s*. 6*d*.

B. Arithmetic. *Mathematical Theatre.* [*Women.*]

Thursday, from 6.30 to 7.30 P.M.

Beginning on October 10th; recommencing after Christmas on January 23rd.

A Course of twenty Lectures on Arithmetic, chiefly dealing with the more advanced parts of the subject.

Fees:—for the Course, £1 11*s*. 6*d*.; for either Term, £1 1*s*.

II. JUNIOR CLASSES.

A. Elementary Mathematics. *Mathematical Theatre.* [*Men.*]

Lectures: Tuesdays, Wednesdays, and Thursdays, from 10 to 11.
Exercises: Mondays, Wednesdays, and Fridays, from 9 to 10.

Subjects. *First Term*:—The Elements of Plane Geometry; Similar Figures; Mensuration of the Circle.

Second Term:—The Principles and Operations of Arithmetic and Algebra, including the nature and use of Logarithms; Algebraical Fractions; Ratio and Proportion; Permutations and Combinations; Progressions; Simple and Quadratic Equations; Factors; Plane Trigonometry, including the solution of Plane Triangles. Determination of Heights and Distances.

Third Term:—Elements of Plane Coordinate Geometry, as far as the equations to the Line and the Circle.

Elements of Solid Geometry, including the elementary properties of the Sphere.

The Mensuration of the simpler Solid Figures, including that of the Sphere, the Cylinder, and the Cone.

The subjects treated in this Class will include the Mathematics required for the First B.A. and the First B.Sc. Examinations at the University of London.

Students who enter this Class are expected to know the elementary rules of Algebra, and to have some facility in the ordinary operations of Algebra, as far as they are required for the Matriculation Examination, or as far as they are taught in the Lower Junior Class.

Fees:—for the Session, £10 10*s*.; for a Term, £4 4*s*.

B. **Elementary Mathematics** (Mr. HARDING). *Room* 23.
[*Women.*]

Tuesday, Thursday, and Friday, from 11 to 12.

A Course of Lectures and Exercises on Elementary Mathematics adapted to beginners.

Students joining this Class should be familiar with the principles and practice of Arithmetic; but no previous knowledge of Algebra or Geometry will be necessary.

Some Lectures after Easter will be on Trigonometry, if the Class has made sufficient progress.

Fees:—for the Session, £6 6*s*. for a single Term, £2 12*s*. 6*d*.

III. SENIOR CLASSES. *Mathematical Theatre.*

A.—Algebra, Differential and Integral Calculus.

LECTURES: Tuesday and Thursday, from 1 to 2.
EXERCISES: Tuesday and Thursday, from 11 to 12.

SUBJECTS:—*First Term*: Elementary Functions. Definition and Notation of the Differential and Integral Calculus. Differentiation of Functions of one Variable: Taylor's and Maclaurin's Theorems; Indeterminate Forms; Maxima and Minima. Applications to Tangents and Normals of Plane Curves. Euler's Theorem of homogeneous Functions.

Second Term: Theory of complex Numbers. Determinants and linear equations by aid of alternate numbers. Theory of Equations and of algebraical Functions.

Third Term: Integral Calculus as far as the integration of simple Functions of one Variable. Geometrical Applications.

B.—Coordinate Geometry.

LECTURES: Monday and Friday, from 10 to 11.
EXERCISES: Monday and Friday, from 11 to 12.

First Term: PLANE GEOMETRY.

Cartesian and Polar Coordinates. Homogeneous Point and Line Coordinates. Determinants of third order. Lines and Conics.

Second Term: COORDINATE GEOMETRY OF THREE DIMENSIONS.

Cartesian and Polar Coordinates. Angles between Lines and Planes. Spherical Trigonometry. Homogeneous Point and Plane Coordinates. Planes, Lines, and Quadric Surfaces.

Third Term: GENERAL METHODS OF COORDINATE GEOMETRY IN TWO AND THREE DIVISIONS.

Principal of Duality. Projection. Abridged Notation. Invariants and Covariants of Quadrics. A few Examples of Curves and Surfaces of a higher Order, especially plane bicircular Quartics and twisted Cubics.

Fees:—for the Session, for each division, £7 7*s*.; for both combined, £12 12*s*.; for the Term, for each division, £3 3*s*.; for both combined, £5 5*s*.

IV. HIGHER SENIOR CLASS.

For the present Session this Class will, probably, be held only during the Second and Third Terms. Particulars of the Course will be announced early in the Session.

V. MODERN GEOMETRY AND GRAPHICAL STATICS.

A. First Course. *Mathematical Theatre.*

LECTURES:—*First and Third Terms*: Monday, Wednesday, and Friday, from 1 to 2. *Second Term*: Monday and Friday, from 1 to 2.

In this Course Geometry will be treated by modern as distinguished from Euclidian methods, and previous knowledge of Euclidian Geometry will not be necessary in order to follow the Lectures. All Students who desire to become acquainted with the Theory of Conics and Quadric surfaces, and with the higher branches of Geometry, are strongly recommended to attend this Course.

One of the great advantages of the purely geometrical methods as compared with Coordinate Geometry is that the Student learns to realize figures in space; whilst in Coordinate Geometry the geometrical meaning of the algebraical operations is too easily lost sight of. The full benefit of this will be obtained only if the theorems and methods given in the lectures are practically applied on the drawing-board to the solution of geometrical problems. This applies especially to the methods of the graphical calculus, and their application to graphical statics. Students attending this Class are therefore strongly recommended to join the Class of GEOMETRICAL DRAWING, which will be conducted throughout in connexion with it, thus making a special Exercise Class unnecessary.

In order still further to promote this object facilities are provided in the WORK-ROOM (see below, p. 49) for the construction of Geometrical Models.

SUBJECTS:—*First Term*: METRICAL PROPERTIES OF PLANE FIGURES.

Congruent and Symmetrical Figures; Points, Lines, and Circles. Equal and Skew-symmetrical Figures; Areas. Graphical Addition of Segments, Areas, Vectors, and Rotors in a Plane by aid of Vector- and Link-Polygons; with Applications to Graphical Statics. Similar Figures; Ratio and Incommensurable Quantities. Graphical Multiplication and Integration. Transformation of Areas.

Second Term: METRICAL RELATIONS IN THREE DIMENSIONS.

Planes and Lines in Space, Desargues's Theorem; Perpendiculars. The Sphere. Central and Parallel Projection; Conics as Projections of Circles. Orthographic Projection, with Application to Geometrical Drawing. Graphical Addition, Multiplication, and Integration in Space. Determination of Volumes and of Centres of Gravity. Amsler's Planimeter.

Third Term: PROJECTIVE FIGURES.

Projective Rows and Pencils; Cross-Ratios. Principle of Duality. Theory of Conics, Cones, and Ruled Quadric Surfaces. Involution; Imaginary Elements and Circular Points in the Plane. Application to Moments of Inertia.

Fee:—for the Session, £7 7*s.*; for a Term, £3 3*s.*

Combination Fees:—Modern Geometry and one division of the Senior Class, for the Session, £12 12*s.*; for a Term, £5 5*s.*

Modern Geometry and the second Term of the Junior Class, £10 10*s.*

Modern Geometry first Term and Junior Class second and third Terms, £9 9*s.*

B. Second Course. *Mathematical Theatre.*

LECTURES: Tuesday and Thursday, from 2 to 3.

SUBJECTS:—Projective Figures in three dimensions: Quadric Surfaces; the Null-System, with its application to Statics; Geometrical Optics; and selected parts of Higher Geometry.

Fee:—for the Session, £5 5*s.*; for a Term, £2 2*s.*

VI. GEOMETRICAL DRAWING. *Room* 8.

This Class will be conducted conjointly by the PROFESSORS OF MATHEMATICS and ENGINEERING, in connexion with the Course of Modern Geometry and Graphical Statics.

The Drawing-Room will be open daily after 10 o'clock. One or both of the Professors will be present during the following hours:—

Monday and Thursday, from 2 to 4.

SUBJECTS:—*First Term*: Construction of Plane Geometrical Figures, especially Symmetrical, Skew-symmetrical, and Similar Figures. Transformation of Areas. Graphical Addition of Segments, Areas, Vectors, and Rotors in a Plane. Graphical Multiplication and Integration. Composition and Resolution of Forces; Diagrams of Stresses in simple Structures.

Second Term: Projection of Plane Figures. Conics as Projections of Circles. Orthographic Projection, with Applications. Graphical Addition, Multiplication, and Integration in Space, with Applications to Mensuration of Volumes, Determination of Centres of Gravity, and to the Composition and Resolution of Forces in Space. Construction of some plane and twisted Curves of special interest, such as Cycloids, Bicircular Quartics, Sinuous Curves, Helices, and others.

Third Term: Construction of Harmonic Rows and Pencils, and of corresponding elements in Projective Figures. Construction of Conics, Cones, and Ruled Quadric Surfaces. Graphic Determination of Moments of Inertia.

Fee:—for the Session, £6 6*s.*; for a Term, £2 12*s.* 6*d.*

VII. TRAINING OF TEACHERS.

The Professor is prepared to train future teachers of Mathematics by entrusting them with actual teaching work in the Exercise Classes.

In general it will be necessary that Students availing themselves of this opportunity should have attended during a previous year the lectures in the respective Classes.

APPLIED MATHEMATICS AND MECHANICS.

Professor W. K. CLIFFORD, M.A., F.R.S., late Fellow of Trinity College, Cambridge.

I. DYNAMICS. *Room* 23.

This Class will, for the present Session, be conducted by OLIVER J. LODGE, D.Sc.

LECTURES: Tuesday, Wednesday, and Thursday, from 10 to 11.

In this Class no more knowledge of Mathematics will be assumed than such as may have been acquired by attending the Junior Mathematical Course.

The Lectures will embrace the subjects required for the Second B.Sc. Pass Examination in *Mixed Mathematics*, as well as the mechanical subjects of the Second B.A. Pass Examination.

1. KINEMATICS of a point and of an extended body.

Rectilinear, curvilinear, and harmonic motions. Velocity and acceleration, uniform and variable. Composition and resolution of motions. Translation. Rotation. Twist. Angular velocity and angular acceleration. Constrained motion.

2. DYNAMICS of a particle and of a rigid body.

Force. Inertia. Impulse. Momentum. Laws of motion. Curvature. Centripetal force. Projectiles. Composition of forces. D'Alembert's principle. Moment of force. Moment of inertia. Couples. Centre of inertia. Radius of gyration. Momental ellipsoid. Pendulums. Impact. Work. Energy, kinetic and potential, conservation and degradation.

3. STATICS of particles, of rigid bodies, and of elastic bodies.

General conditions of equilibrium. Degrees of freedom. Resolution and composition of forces and couples. Principle of virtual velocities. Laws of statical friction. Stresses and strains. Elasticity. Compression. Distortion. Shear. Application of principles to the solution of statical problems and to the determination of stresses in jointed structures.

4. STATICS OF FLUIDS.—Equilibrium of incompressible fluids. Pressure of gravitating fluids. Equilibrium of a floating body.

5. RUDIMENTS OF FLUID DYNAMICS.—Rectilinear motion in fluid media.

6. RUDIMENTS OF ASTRONOMICAL MECHANICS.—Principal phenomena connected with the rotatory and orbital motions of the earth. Aberration. Precession &c. Kepler's laws of planetary motion. Law of gravitation. Determination of the mass and size of the earth, and of other dimensions in the solar system.

No separate Exercise Classes will be held distinct from the Lectures, but Exercises will be given to the Class whenever desirable and convenient.

Fees:—for the Session, £7 7*s.*; for one Term, £3 3*s.*

II. MATHEMATICAL PHYSICS.

This Class will, for the present Session, be suspended.

PHYSICS.

Professor G. CAREY FOSTER, B.A., F.R.S., Fellow of the College; assisted by OLIVER J. LODGE, D.Sc.

I. JUNIOR CLASS. *Physical Theatre.* [*Men.*]

Division A.—**Elementary Mechanics.**

LECTURES: Monday and Friday, during the First and Second Terms, from 10 to 11.

EXERCISES: Monday and Friday, from 12 to 1. *Room* 5.

DYNAMICS AND STATICS.—Velocity, Acceleration, Inertia, Momentum, Force, Work, Energy. Methods of estimating the combined effect of two or more forces acting simultaneously. Composition and Resolution of Forces. Application of foregoing principles to the "Mechanical Powers" and other simple cases.

HYDROSTATICS AND PNEUMATICS.—General properties of Fluids; distinction between Liquids and Gases. Equilibrium of pressure in Fluids.—*Liquids*: Effects of pressure due to the weight of liquids; Equilibrium of Immersed and Floating bodies, application to measurement of Volumes of solids and of Specific Gravities of solids and liquids.—*Gases*: Compressibility and Weight. Pressure due to weight of gases; Barometer, Siphon, Pumps. Variation of atmospheric pressure with elevation.

Division B.—**Experimental Physics.**

LECTURES: Tuesday and Thursday, from 12 to 1, throughout the Session; also, during the Third Term, Monday and Friday, from 10 to 11.

EXERCISES: Monday and Friday, from 3 to 4; during the Third Term an additional hour will be arranged for with the Class. *Room* 5.

I. HEAT.—Temperature. Expansion. Specific Heat. Latent Heat. Fusion and Solidification; Evaporation and Condensation. General account of the Steam-Engine. *Conduction* of Heat. *Radiation* of Heat.

II. LIGHT.—Reflexion and Refraction. Action of Prisms and Lenses. Chromatic Dispersion. Physical conditions of unaided Vision. Microscope; Telescope.

III. SOUND.—Production and Propagation. Velocity. Transmission of Vibrations. Period and Wave-length. Pitch. Organ-pipes. Vibration of Strings. Harmonic Tones. Musical Intervals.

IV. MAGNETISM.—Characteristic properties of Magnets. Magnetic substances; properties of iron and steel. Magnetic induction. Methods of magnetisation. Law of magnetic attraction and repulsion. Comparison of magnetic moments. Terrestrial Magnetism.

V. ELECTRICITY.—(*a*) *Statical.* Conditions under which electrical effects are produced. Positive and Negative electricity. Conduction and Insulation. Law of Electrical Force. Induction. Accumulation. Discharge; effects of the discharge of accumulated electricity.

(*b*) *Dynamical.* Conditions for the production of continuous electric currents. Galvanic and Thermoelectric batteries. Elec-

tromotive force; Strength of Current; Resistance. Heating and Chemical effects of currents. Relations between Currents and Magnets, and between Currents and Currents. Magneto-electric and Volta-electric induction.

II. JUNIOR CLASS. [*Women.*]

Similar Courses of Lectures will be delivered to Ladies as follows: Division A, Monday and Friday, from 12 to 1 (First and Second Terms); Division B, Tuesday and Thursday, from 2 to 3, and also, during the Third Term, Monday and Friday, from 12 to 1.

No previous knowledge of the subject is required for entering either Division of the Junior Class of Physics. The treatment is, as far as possible, experimental and descriptive, only a rudimentary knowledge of mathematics being presupposed on the part of Students, especially in the first Term; as the Session advances, mathematical methods, but always of an elementary kind, are used somewhat more freely.

Fees:—For the Lectures: Division A, for two Terms, £3 13*s.* 6*d.*; for one Term, £2 2*s.*; for Division B, for the Session, £6 6*s.*; for the First or Second Term, £2 2*s.*; for the Third Term, £3 13*s.* 6*d.*; for both Divisions together, for the Session, £9 9*s.*, for a Term, £3 13*s.* 6*d.*

For the Exercise Classes: for the Session, Division A, £1 11*s.* 6*d.*; Division B, £3 13*s.* 6*d.*; for the First or Second Term of either Division, £1 1*s.*; for the Third Term of Division B, £1 11*s.* 6*d.*; for both Exercise Classes together, for the Session, £4 4*s.*, for a Term, £1 11*s.* 6*d.*

III. SENIOR CLASS. *Physical Theatre.*

LECTURES: Monday and Friday, from 3 to 4; Wednesday, from 4 to 5.
EXERCISES: Monday and Friday, from 4 to 5.

Students entering this Class are assumed to have a general knowledge of the leading phenomena of Physics, and of the elements of Geometry, Algebra, and Plane Trigonometry. Some degree of practical acquaintance with experimental methods is also extremely desirable; students are therefore strongly recommended to attend the class of Practical Physics either before, or, if that be impracticable, at the same time as the Senior Course of Lectures. The Lectures are devoted to parts of Physics which require a somewhat more mathematical treatment than would be suitable in the Junior Class, and especially to a discussion of the experimental methods employed and of the results obtained in investigating the quantitative relations of physical phenomena. The subjects of the Course are treated in the following order, namely:—

I. MOLECULAR PHYSICS.—Elasticity. Capillarity.
II. HEAT.—Quantitative study of the most important thermal phenomena. Dynamical theory of heat and its principal applications.
III. MAGNETISM.—Quantitative study of magnetic phenomena.
IV. ELECTRICITY.—Methods of measuring the most important electrical magnitudes, as Quantity, Potential, Capacity, Specific

Inductive Capacity; Electromotive force, Strength of Current, Resistance; Coefficient of Induction,—and discussion of their mutual relations.

V. SOUND.—Calculation of Velocity. Phenomena due to the coexistence of two Simple Vibrations: Stationary Vibrations (application to the indirect measurement of Velocity of Sound, Pitch, and Elasticity), Interference, Beats, Resultant tones. Overtones. Quality of Musical Sounds. Nature of Consonance and Dissonance.

VI. LIGHT.—Velocity. Illustrations of the Wave Theory of Light by the phenomena of Interference, Polarisation, and Double Refraction.

Fees:—For the Lectures: for the Session, £8 8*s.*; for a Term, £3 3*s.*

For the Exercise Class: for the Session, £2 12*s.* 6*d.*; for a Term, £1 1*s.*

EXERCISE CLASSES.

In connexion with each of the above Courses of Lectures, an EXERCISE CLASS is held for the purpose of supplementing the instruction given in the Lectures by affording to Students assistance and direction in working Exercises, revising their Notes of Lectures, and, generally, by giving them such additional instruction as may be found desirable.

The Exercise Classes are conducted by Dr. O. J. LODGE with the cooperation of Professor Foster. For days, hours, and fees, see above.

The requirements of Students preparing for the Examinations of the University of London are kept in view in the Lectures on Physics, as far as practicable. The Classes recommended for some of the chief Examinations are as follows:—For *Matriculation*, Junior Class, Division A, 1st and 2nd Terms, and Division B, 1st Term; for *Prel. Sci. M.B.*, or *First B.Sc. Pass*, Junior Class, Division A, 1st and 2nd Terms, and Division B, Session; for *Second B.Sc. Pass*, or *First B.Sc.* or *Prelim. Sci. M.B. Honours*, Senior Class and Practical Class, or Physical Laboratory; for *Second B.A. Pass* (Acoustics and Optics), Senior Class, 3rd Term; for *Second B.Sc. Honours*, Senior Class and Physical Laboratory.

IV. PRACTICAL PHYSICS. *Physical Laboratory.*

Wednesday, from 12 to 2, throughout the Session.

The instruction given in this Class will consist of a Course of Practical Lessons, in which the fundamental experiments of the chief branches of Physics will be performed by the Students, and simple methods of constructing Physical Apparatus will be indicated. Students may obtain direction and assistance in following out this latter part of the instruction by availing themselves of the WORK-ROOM (see p. 49).

Fees:—for the Session, £5 5*s.*; for a Term, £2 2*s.*

N.B.—In the case of any injury to Apparatus, the same regulations are applicable to this Class as to the Physical Laboratory (see next page).

V. PHYSICAL LABORATORY.

For Practical Instruction in Experimental Physics.

The Physical Laboratory is open to Students on Monday, Tuesday, Wednesday, Thursday, and Friday throughout the Session from 10 to 5.

The special object of the teaching in the Physical Laboratory—in addition to enabling Students to become practically acquainted with the use of physical apparatus and with the conditions needed for the production of the most important phenomena of the various branches of physics—is to afford instruction in the methods of obtaining the numerical data which form the basis, not only of all accurate reasoning upon physical phenomena, but also of all the applications of the principles of Physics to Engineering and other practical purposes.

Students are not allowed to enter the Physical Laboratory, unless they have previously attended satisfactorily both Divisions of the Junior Class of Physics or can produce evidence of having obtained elsewhere a fair knowledge of the principles of Physics. The instruction in the Laboratory being for the most part individual, Students can enter at any period of the Session.

Beginners are taught how to perform the chief experiments in the different branches of Physics, and especially how to measure physical properties and effects with accuracy. Those who are sufficiently advanced are encouraged to undertake independent investigations.

Fees:—for the Session, £22 1*s.*; six months, £17 17*s.*; three months, £10 10*s.*; one month, £4 4*s.*

N.B.—By special arrangement Students can be admitted to work in the Laboratory on selected days in each week.

The above payments entitle Students to the use of the apparatus belonging to the Physical Cabinet of the College, under such regulations as the Professor may prescribe; but in the case of any apparatus receiving an injury which, in the judgment of the Professor, amounts to more than legitimate wear and tear, the Student in whose charge the apparatus is at the time must make good the injury, or, if required, replace the apparatus at his own expense.

CHEMISTRY.

Professor Alex. W. Williamson, Ph.D., F.R.S.

I.—GENERAL COURSE. *Chemical Theatre.* [*Men.*]

Lectures: Daily, except Saturday, from 11 to 12, up to the last week in March.

Exercises on Tuesday, Wednesday, Thursday, and Friday, from 9 to 10. [*Room* 23.]

Fees:—for the Course, £7 7*s.*; Perpetual, £9 9*s.*; for the Half Course, £4 4*s.*; for the Organic Course alone, £2 2*s.*

Fee for the Exercise-Class, £2 2*s.*

The instruction in this Class is of two kinds, consisting partly of Experimental Lectures by the Professor, partly of Exercises and personal instruction on the subject of the Lectures by an Assistant.

Students cannot profit duly by attendance on the Lectures, unless they work at the subject of each Lecture so as to make it their own.

Attendance on the tutorial part of the Class enables Students to do their work more effectually and rapidly than they can do it by themselves.

A. **The first half** of the Course, to Christmas, includes those parts of Chemistry which are required for the Matriculation Examination of the University of London.

The following order of subjects is adopted in it, viz. :—

Heat:—Instruments for measuring temperature. Decompositions produced by heat. Expansion. Tension of vapours. Conduction. Convection. Calorimeters. Specific heat. Latent heat. Evolution of heat by chemical action; by mechanical action. Mechanical equivalent of heat.

Light:—Photometry. Refraction and dispersion of Light. Study of Spectrum. Heat-rays. Chemical rays. Construction of common optical instruments. Double refraction. Polarization. Chemical applications of phenomena of polarization. Combinations and decompositions produced by light and actinic rays. Photography.

Electricity and Magnetism:—Simple magnetic instruments. Magnetic and diamagnetic bodies. Electrical machine, electrophorus, &c. Positive and negative electricity. Electrometers. Conduction. Induction. Leyden jars, &c. Discovery of galvanism. Various forms of battery. Study of the chemical action of galvanic batteries. Galvanometers, &c. Thermo-electricity. Rheostat, &c.

Oxygen. Theory of combustion. Hydrogen. Nitrogen. Composition and chief changes of the atmosphere. Carbon, Chlorine, Bromine, Iodine, Fluorine, Sulphur, &c. Phosphorus. Boron. Silicon. The chief compounds of these non-metallic elements among themselves are studied in relation to their production, properties, and decompositions. The proportions by weight and by volume in which they combine are explained and illustrated in connexion with the atomic theory.

B. **The second half** of the Course, from January to March, includes the following subjects:—

1. Preparation and properties of the chief METALS, including their characteristic reactions and most important salts. Detection of Metallic Poisons. Quantitative estimation of metals. Principles of classification. Monatomic, diatomic metals, &c.

A weekly *viva voce* examination is held during the First Half Course and the commencement of the Second Half Course.

2. ORGANIC CHEMISTRY

commences in the second week in February, and occupies five Lectures weekly till about the end of March. It includes a study of the characteristics and metamorphoses of the chief organic acids, bases, alcohols, ethers, colouring-matters, &c. Methods of ultimate and proximate analysis. Determination of molecular weights. Theory of types; of compound radicals. Phenomena of fermentation, &c.

TRAINING OF TEACHERS.

Teachers of Chemistry are trained in the theory and practice of their profession. A two years' Course is absolutely requisite for this purpose; but Students will with advantage devote a longer period to it.

The first year is occupied with attendance on the Courses of Chemistry and of Analytical Chemistry. In the second year the Student again attends the Course of Chemistry, and is entrusted with teaching-work in conjunction with the Tutors of the Class. At the same time he continues to work in the Laboratory at analysis and original research.

In order to qualify themselves for rising to the higher ranks of the Profession, gentlemen remain for a further period, in which case they may obtain remunerative work in teaching through the recommendation of the Professor.

It must not, however, be supposed that a study of Chemistry alone, however complete, is sufficient to qualify a man to teach the Science effectively. A competent knowledge of Physics, Mathematics, and either French or German must necessarily be acquired at some period of the Student's Course.

II.—ANALYTICAL AND PRACTICAL CHEMISTRY.

A. **Birkbeck Laboratory.** [*Men.*]

Chief Assistant, C. A. BELL, B.A., M.B.

The instruction in the Laboratory is intended for beginners as well as for more advanced students. It includes practice in the construction and use of apparatus for preparing the common gases, acids, bases, salts, &c.; study of the qualitative methods of detecting and separating mineral or organic bodies from one another; also quantitative analysis in the wet way, organic analyses, vapour-densities, &c.; instruction in gas-analysis.

More advanced students are instructed in the methods of original research, especially in Organic Chemistry.

When accompanied or preceded by attendance on the lectures on Chemistry, the Laboratory Course qualifies Students in the application of Chemistry to the Manufacturing Arts, Metallurgy, Medicine, or Agriculture, &c. Instruction is given in the principles and processes of gas-analysis.

The Laboratory and offices are fitted up completely with the most improved apparatus and utensils for experimental research, both for beginners and for advanced Students. They are open daily from 9 A.M. to 4 P.M., from the 3rd of October until the middle of July, with a short recess at Christmas and at Easter. Saturday, from 9 to 2.

Fees:—for the Session, 25 guineas; six months, 18 guineas; three months, 10 guineas; one month, 4 guineas; exclusive of the expense of materials.

A Gold Medal and Certificates of Honour are competed for by Students entered for the Session.

ELEMENTARY CHEMISTRY. *Chemical Theatre.* [*Women*].

LECTURES:—Wednesday and Friday, from 4 to 5.

A Class of Elementary Chemistry, including the subjects required for Matriculation, will be given during the Winter Session by C. A. Bell, B.A., M.B., Chief Assistant in the Chemical Laboratory.

The instruction will consist partly of Lectures, partly of Laboratory Experiments performed by the Students.

Fees:—for the Course, including use of apparatus and materials, £4 4*s*.

B. Summer Practical Courses. *Chemical Theatre.*

1. Elementary Course. [*Men.*]

About Forty Lessons, of one hour each, on Tuesday, Wednesday, Thursday, and Friday, from 11 to 12, commencing in the first week of May. Students are taught the construction and use of apparatus for the preparation of the most important gases, acids, &c.; the characteristic tests for the presence of the common acids and bases, including the chief metallic and other poisons; also the processes for separating these bodies from one another.

Solutions are frequently given to the Class for investigation.

The first six weeks of the Course are occupied by the study of the chief non-metallic elements and their simple compounds. Metallic salts, &c. are subsequently studied.

Fees:—including the cost of materials and apparatus: for the Course, £5 5*s.*; for a Second Course, £3 3*s.*

2. Senior Course. [*Men.*]

This Course consists of Twenty Lessons of two hours each, on Mondays and Saturdays, from 10 to 12, commencing in the first week in May.

The first half of the Course includes tests for fixed and volatile organic acids, nitrogenized acids, sugars, glycerine, alkaloids, &c.

The second half of the Course includes tests for mineral poisons in organic mixtures; also tests for organic bodies, such as the alkaloids, when mixed with other organic substances.

Volumetric methods of the quantitative analysis of sugar and urea, chlorides, phosphates, hardness of water, alkalimetry, are practised.

Analysis of milk and ashes of blood.

Fees:—including cost of materials and apparatus: for the Course, £5 5*s.*; for a Second Course, £4 4*s.*

III.—SUMMER MATRICULATION COURSE. [*Men.*]

C. A. Bell, B.A., M.B.

This Course includes those parts of Chemistry which are required for the Matriculation Examination of the University of London.

The Course consists of about Twenty Lessons in Practical Chemistry, and of an equal number of oral lessons. The practical lessons include the preparation of the common gases and acids, &c., and the study of their characteristic properties in relation to the elementary laws of combination.

The other lessons are chiefly devoted to those parts of the subject which require fuller oral explanation than is given in the practical lessons. They include numerous exercises and questions to which answers in writing are given by the Students. These lessons will begin on April 16th, 1879, at 11.

The Class will meet on Tuesdays, Wednesdays, Thursdays, and Fridays, from 11 to 12, and some other meetings will be announced when the Class has assembled.

Fee, including cost of materials and apparatus, £4 4*s.*

CHEMICAL TECHNOLOGY.

Professor CHARLES GRAHAM, D.Sc., M.I.C.

The Course of instruction in this Department is designed to afford to Students who propose to devote themselves to industrial pursuits in which Chemistry plays an important part, or to prepare themselves for the profession of Consulting Chemist, the instruction essential for their success in their future line of work. It will also be found of great value in two of the branches (Organic and Inorganic Chemistry) in which the Degree of Doctor of Science can be taken at the University of London, and also an essential training for those Students who propose to qualify themselves for Membership of the Institute of Chemistry of Great Britain and Ireland.

It must be remembered that the study, however ample, of Pure and Applied Chemistry is not sufficient for the successful carrying out of manufacturing operations, even when these are chiefly chemical in character. A fair knowledge of Mathematics, Pure and Applied, of Physics and Mechanics, and of Mechanical Drawing is necessary for all engaged in manufacturing operations. The further study of other branches of science, pure and applied, will depend upon the object each individual Student may have in view; and as it would be inconvenient to attempt here to lay down a prescribed course of study for all Students, with aims and objects necessarily so varied, the Professor will gladly advise with each Student at the beginning of his College career as to the subjects of study essential in his particular case.

The Student's College training will usually occupy three years. This, however, will greatly depend upon the previous knowledge acquired, and on the particular circumstances of each case.

Assuming that the Student enters for a three years' study, the following will give an idea of the nature of the work during the period:—

In the first year the Student will attend Lectures on Theoretical Chemistry, and work at Analytical Chemistry in the Chemical Laboratory, and will also attend Lectures on Mathematics, Mechanics, and Physics. The Mechanical Drawing Class should also be attended during the first year by all Students. Those who can afford the time will find it of great advantage in after life if during their College career they can acquire a sufficient knowledge of French and German to enable them to consult scientific and technical works in those languages.

In the second year, the Student will again attend the Lectures on Theoretical Chemistry, and will begin his study of Applied Chemistry by attendance on the Lectures in this subject, and by practical work in the Laboratory on the applications of Chemistry.

The third year will also be chiefly occupied with attendance on the Lectures on Chemical Technology, and in practical work connected therewith in the Laboratory.

In the second and third years the Student will, in addition to the foregoing subjects, which are common to all, attend Lectures and work at such other branches of Pure and Applied Science as may be deemed advisable after consultation with the Professor. Some of these subjects of study have already been referred to.

Students entering the College with more advanced scientific know-

ledge will be able to shorten the Course described to two years, or even one year, as may be found advisable.

For the convenience of those already engaged in business, and of those from other causes prevented from entering for a longer period of study, it is arranged that they can attend a Course of Lectures upon any *one* subject of Applied Chemistry, without being required to attend any other Lectures either in Applied Chemistry or in other subjects.

COURSES OF LECTURES. *Chemical Theatre.* [*Men.*]

Course A.	Monday, from 4 to 5.	During the First Term.
„ B.	Thursday, from 4 to 5, beginning Oct. 10th.	
„ C.	Tuesday, from 4 to 5.	During the Second Term.
„ D.	Thursday, from 4 to 5.	

Fees:—for each Course, £2 2*s.*; for the four Courses together, £5 5*s.*

A.—Chemistry of Brewing.

The properties of Cellulose, Starch, Dextrine, Dextrose, Cane- and Invert-Sugar, and the Sugars arising from the hydration of Starch.

Malting. The changes produced in the process. Examination and comparative valuation of Malts; estimation of Soluble Extract, Albuminous Matters, Acidity, Ratio of Glucose to Dextrine, &c.

Brewing-water. Analytical Examination; Purification and Burtonizing.

Mashing. Examination of the process and of the effects produced by alteration of mashing heats; time of infusion and amount of water employed, and application of the data obtained to various malts.

Boiling. Hops, composition and use. Hop-substitutes. Changes produced in the copper.

Fermentation. The Yeast-organism. Microscopic Examination of Ferments. Their Chemical Functions examined. The Union, Stone Square, Pontoon, and Skimming Systems. Storing; Bottling.

Analysis of Beer. Original Gravity of the Wort, and examination of the organisms in Beer.

Summary, including remarks on the use of Bisulphite, Finings, Lime, Chloride of Lime, and other chemicals.

B.—Chemistry of the Alkali Trade.

The manufacture of Sulphuric Acid, Hydrochloric Acid, Bleaching Powder, Chlorate of Potash. The manufacture of Carbonates of Soda, and the processes of Le Blanc, Longmaid, Weldon, Hargreaves, Young, and others examined. Caustic Soda. The various suggestions for the recovery of Sulphur, the regeneration of the Manganese, and other matters will be examined.

The Course will include a description of the best processes for the Analytical Examination of the raw materials used and the final products obtained.

C.—Soap, Glass, Pottery, Cements.

Composition of Fats, Saponification, Hard, Soft, and Fancy Soaps. Examination of Soaps, Adulteration.

Glass: Window, Flint, Bottle, &c.

Pottery: Chinese and English Clays, Painting, Glazing.

Cements: Artificial Stone, Brick-making, &c.

D.—Agricultural Chemistry.

The Origin and Composition of Soils. Mechanical and Chemical examination of Soils. Composition of the Ashes of Plants.

Rotation of Crops and Management of Land.

Draining, ploughing, and their influence on the soil.

Lime, examination of its action.

Farmyard manures. Artificial manures, their manufacture and analytical examination and valuation.

Carbonic Acid, its place in agriculture.

The feeding of Cattle: Feeding Stuffs; Chemical examination of various artificial food materials.

Unexhausted improvements.

Adulteration of Seeds &c.

In the Session 1879–80, it is proposed to treat of the following subjects:—

(1) Heating and Lighting: Gas, Fuel, Furnaces.

(2) Metallurgical Chemistry.

(3) Dyeing and Calico Printing.

(4) Paints, Oils, Varnishes; or Distilling, Vinegar-making, Bread- and Biscuit-making.

Should a sufficient number of Students desire a Course of Lectures on some subject of Applied Chemistry other than those above mentioned, the Professor will be glad to give such either in lieu of, or in addition to those mentioned.

Students desirous of working at subjects not included in the foregoing Courses, such as Photography and Photographic materials, Paper-making, Gas-tar products, the products of the Distillation of Wood, Tanning, and other Chemical industries, will receive individual instruction in the Laboratory.

CHEMICAL LABORATORY.

The instruction in the Laboratory in Chemical Technology, under the direction of the Professor, will consist of the examination and valuation of raw materials used, and of the final products obtained, in various manufacturing industries, and of experimental examination of the processes employed in the arts and manufactures.

The Laboratory is supplied with apparatus and utensils for such investigations.

Each Student works independently, and the Professor will arrange the course of practical work according to the requirements of the individual Student.

The Laboratories are open daily from 9 A.M. to 4 P.M., from the 2nd of October until the middle of July, with a short recess at Christmas and at Easter. Saturday, from 9 to 2.

Fees:—for the Session, 25 guineas; six months, 18 guineas; three months, 10 guineas; one month, 4 guineas; exclusive of the expense of materials.

GEOLOGY AND MINERALOGY.

GOLDSMID PROFESSORSHIP.

Professor The Rev. T. G. BONNEY, M.A., F.R.S., Fellow of St. John's College, Cambridge.

Geological Museum.

A. General Lectures.

Eighteen Lectures in each Term. Tuesday and Thursday, from 12 to 1.

1*st Term*: Mineralogy and Lithology, commencing October 10.

2*nd Term*: Physical Geology and Geography, commencing January 7.

3*rd Term*: Stratigraphical Geology, commencing April 17.

B. Catechetical Lectures and Papers.

This Class is intended more especially to prepare Students for the B.Sc. Examination. Thursday from 3 to 4.

1*st Term*: Commencing October 10.

2*nd Term*: Commencing January 9.

3*rd Term*: Commencing April 17.

C. Lectures and Demonstrations.

This Class is intended for students who have already a fair knowledge of Geology.

Tuesday from 3 to 4.

1*st Term*: Nine Lectures on Microscopical Lithology, commencing October 15.

2*nd Term*: Nine Demonstrations on Palæontology, commencing January 7.

FIELD EXCURSIONS.—During the Course, demonstrations in the field are given, with a view to affording the Student means of acquiring a practical acquaintance with the method of Geological Surveying, and of describing the sections presented by quarries, road-cuttings, &c.

The Lectures will be fully illustrated by the collection of Rocks, Fossils, and Minerals in the MUSEUM.

Fees:—for Course A, £4 4*s*.; for a Term, £1 11*s*. 6*d*.; for Course B, £3 3*s*.; for a Term, £1 1*s*.; for Course C, £2 2*s*.; for a Term, £1 1*s*.

BOTANY.

Professor D. OLIVER, F.R.S., F.L.S.

I. GENERAL COURSE. [*Men.*] *Botanical Theatre.*

Daily, except Saturdays, during the months of May, June, and July, from 8 to 9 A.M. Fee for the Course, £3 13*s*. 6*d*.; Perpetual, £5 5*s*.; or including attendance at the Microscopical Demonstrations, on alternate Saturdays throughout the Course, from 2 to 5 P.M., £4 4*s*.; Perpetual £6 6*s*. Admission to the Microscopical Demonstrations alone, £2 2*s*.

The Class will be supplied daily with fresh Specimens for examination, and it is particularly urged that use be made of these in filling up the various Exercises recommended by the Professor.

The Lectures will be illustrated by a very extensive series of Drawings and Diagrams, and by an abundance of specimens, &c.

II. ELEMENTARY COURSE. [*Women:*]

An Elementary Course of Evening Lectures on Botany will be given in the months of March and April, on Mondays, Wednesdays, and Fridays, from 5.30 to 6.30.

ZOOLOGY AND COMPARATIVE ANATOMY.

Professor E. RAY LANKESTER, M.A., F.R.S.

I. GENERAL COURSE. *Museum of Comparative Anatomy.* [*Men.*]

LECTURES: Wednesday, Thursday, and Friday, from 1 to 2, during the First and Second Terms.

This Course consists of about sixty Lectures, commencing on Wednesday, October 2nd. The Lectures before Christmas are chiefly devoted to the lower types, those after Christmas to the Vertebrata.

The Lectures are illustrated by a very large series of diagrams specially prepared for this Course, and by the valuable series of dissections, skeletons, and models which have been recently acquired by the Museum of Comparative Anatomy.

Fees:—for the Course, £5 5*s.*; Perpetual, £7 7*s.*

II. PRACTICAL CLASSES (for Dissection and work with the Microscope). [*Men.*]

A. **Junior.**

After Christmas a Junior Class will be formed for the dissection and microscopic study of the following types:—1. Gregarina; 2. Vorticella; 3. Hydra; 4. Cordylophora; 5. Alcyonium; 6. Earthworm; 7. Leech; 8. Tænia; 9. Crayfish; 10. Cockroach; 11. Centipede; 12. Swan-mussell; 13. Snail; 14. Whelk; 15. Perch; 16. Frog; 17. Rabbit.

This Class will meet, from 2 to 5, on Wednesday, Thursday, and Friday during the Second Term, in the Zootomical Gallery, and will be under the immediate superintendence of Professor Lankester.

Fees:—for the Junior Practical Class (exclusive of 5*s.* for specimens) £4 4*s.*; for Junior Practical Class and Perpetual General Course £10 10*s.*

N.B.—This Course is arranged so as to meet the requirements of Candidates for the Preliminary Scientific Examination for M.B. of the University of London so far as *practical* work *only* is concerned.

B. **Senior.**

During the Summer Session the Zootomical Laboratory is open under the superintendence of the Professor for the use of such Students only as have already gone through the Junior Practical Course, or the Course of Elementary Biology. Facilities are given to such Students for the dissection of additional types, such as the Tortoise, Newt, Skate, *Amphioxus*, *Ascidia*, Cuttle-fish, *Aplysia*, &c.

Each Student works independently, and the Professor will arrange the course of practical work in each case according to the requirements of the individual.

The Laboratory is open daily from 9 A.M. to 5 P.M. (on Saturdays till 2 P.M.).

Fee, for six days a week, £9 9*s.*; for three days, £5 5*s.*; apparatus and reagents are included in the fee, but a separate charge is made for specimens.

III. ELEMENTARY BIOLOGY.

During the months of October, November, and December Professor Lankester will deliver a Course of about thirty-five Lectures on "Elementary Biology, or the general phenomena of organic structure and function as exhibited in a typical series of living forms." The Lectures will be followed by practical work, in which each Student will, as far as possible, examine for himself the structure and life-history of the following organisms:—Amœba, Yeast, Bacterium, Protococcus, Gregarina, Vorticella, Hydra, Blue Mould, Chara, Fern, Bean-plant, Earthworm, Crayfish, Cockroach, Swan-mussell, Frog. The Lectures will more especially treat of the phenomena which are common to both Plants and Animals, of their common structure and laws of form, the properties of living matter, the adaptations of form to function in the various types above enumerated, the microscopic characters of the tissues, and the chief physiological processes in the Frog and in the Bean-plant, the differences between Plants and Animals, the Origin of Species, and the Distribution of Organic Forms in space and time.

The Lectures and practical work will be given from 2 till 5 on Wednesdays, Thursdays, and Fridays during the First Term, commencing Wednesday, the 2nd of October.

Fees for the whole Course (exclusive of a small charge for specimens) £5 5*s.*

Until more space is available for the practical work, ladies can only be admitted to the Lectures of this Course. Fee, £3 3*s.*

N.B.—This Course is arranged so as to embrace the subjects specified under the heading "Biology" in the schedule of the University of London relating to the First B.Sc. Examination.

PHYSIOLOGY.

JODRELL PROFESSORSHIP.

Professor J. Burdon Sanderson, M.D., LL.D., F.R.S.
Assistant Professor Edward A. Schäfer, F.R.S.
Assistant F. J. M. Page, B.Sc.

I.—GENERAL COURSE OF PHYSIOLOGY. [*Men.*]

Lectures daily, except Saturday, from 10 to 11, during the First and Second Terms.

This Course is divided into two parts, of which one relates to General Anatomy and Histology, including Development, the other to Physiology proper. In the one part, by Mr. Schäfer, an account will be given of the structure of the textures and organs of the human

body; in the other part, by Dr. Sanderson, a systematic exposition of the phenomena which present themselves in the living body, and of the general principles or laws by which they are regulated.

The Course is arranged with a view to the requirements both of Medical Students and of those preparing themselves for the examinations in science of the Universities.

Fees:—for the entire Course, £8 8*s.*; Histology alone, £3 3*s.*; Physiology alone, £5 5*s.*; Perpetual, £10 10*s.*

II.—PRACTICAL PHYSIOLOGY AND HISTOLOGY. [*Men.*]

This Course consists of practical lessons in Histology and the use of the Microscope, and in Chemical Physiology.

The Class will be divided into two equal parts, which will meet on alternate days in the Microscope-room, during the Summer Session, from 12 to 2 P.M.

Fee:—for the entire Course of Practical Physiology and Histology, £8 8*s.*; for each additional Course, £2 2*s.*

III.—COURSE OF EMBRYOLOGY. [*Men.*]

A Course of Lectures on Embryology will be given during the Summer Session by the Assistant Professor of Physiology. The Lectures will be from 3 to 4 P.M., on Mondays and Tuesdays throughout the Session.

In addition, a series of practical Lessons will be given in the Laboratory on the subjects treated of in the lectures.

Fees:—for the Lectures alone, £2 2*s.*; for the Practical Course alone, £3 3*s.*; for both Courses combined, £5 5*s.*

IV.—ADVANCED COURSE OF PRACTICAL PHYSIOLOGY. [*Men.*]

A Course of Practical Instruction, adapted to meet the requirements of Candidates for the Second B.Sc. Examination of the University of London, will be given during the Summer Session. The Class will meet every Friday, from 10 to 12 A.M. Complete information as to the subjects comprised in the Course will be given in a special Syllabus.

V.—COURSE OF PHYSIOLOGY AND HISTOLOGY. [*Women.*]

The plan of this Course will be the same as that of the "General Course of Physiology" (see I. p. 37). It will consist of about forty Lectures, which will be delivered by the Professor and Assistant-Professor of Physiology.

LECTURES:—Tusdays and Thursdays, from 5 to 6.

Fee, £3 3*s.*

VI. THE PHYSIOLOGICAL LABORATORY.

Persons desirous of engaging in original investigations in Physiology or Histology may be admitted to the Laboratory as workers on the nomination of the Professor. Further information may be obtained on application at the Office of the College.

Laboratory fees (exclusive of expense of materials):—£2 2*s.* for the first month, and £1 1*s.* for each succeeding month.

HYGIENE AND PUBLIC HEALTH. [*Women.*]

Professor W. H. CORFIELD, M.A., M.D., late Fellow of Pembroke College, Oxford.

Wednesday, from 3 to 4, during the First and Second Terms, beginning on the 24th of October.

(1) The Physiological Standards of Health and the Predisposing Causes of Disease; the Hygienic Management of the Body during the various periods of life, with special reference to childhood.—(2) The Influences exercised by various conditions of the Air, Water, and Soil, and by Food, Baths, Exercise, &c. upon Health, including the Hygienic Study of Localities (climate, &c.), and of Dwelling-houses (warming, lighting, ventilation, &c.)—(3) Matters relating to the Public Health, especially as regards the salubrity of towns and the prevention of epidemic and endemic diseases.

Questions will be given from time to time for home exercises, the answers being corrected by the Professor, and returned to the writers.

The Lectures will be illustrated by Models, Diagrams, &c., from the Parkes Museum.

Fee for the Course, £2 2*s.*; for Michaelmas Term, £1 1*s.*; Lent Term, £1 11*s.* 6*d.*

LAW CLASSES.

The Course of Instruction in these Classes is specially adapted for Students preparing for the LL.B. degree in the University of London, and for the Indian Civil Service Examinations.

ROMAN LAW.

Professor W. A. HUNTER, M.A., Barrister-at-Law.

Senior Class. Monday and Wednesday, from 7.30 to 8.30.

A Course of Lectures will be delivered in *the First Term*, 1878, beginning on Monday, October 21st, on:—

THE ROMAN LAW OF PROCEDURE.

The Text-books will be the Digest, Book XLVI., "*De Solutionibus et Liberationibus*," and the corresponding parts of the Institutes of Gaius and Justinian. The Lectures are intended specially as preparatory to the Second LL.B. Examination (Jan. 1879) of the University of London.

Junior Class. Monday and Wednesday, from 6.30 to 7.30.

This Class begins on Monday, October 28th. It is preparatory to the First LL.B. Examination in the University of London. The subjects of the Lectures will be:—

I. FIRST TERM.

Customary Law. The Laws of the XII. Tables. The Roman Jurisconsults. Prætorian Equity. Popular and Imperial Legislation.
THE ROMAN FAMILY.—Marriage. Property of Married Women. Disabilities of Women generally. Rights of Fathers over Children. Adoption. Slavery. Comparison of the Roman Law on these subjects with the Hindoo Law and other remains of Ancient Law.

II. SECOND TERM, commencing Monday, January 20th, 1879.

THE LAW OF PROPERTY.—Tribal Ownership. History of Private Property. *Dominium ex jure Quiritium.* Possession in relation to Ownership. Pledge and Mortgage.
THE LAW OF CONTRACT.—Forms of Contract. Capacity to contract. Particular Contracts:—Sale, Hire, Partnership, Deposit, &c.

III. THIRD TERM, commencing Monday, April 21st, 1879.

THE LAW OF WILLS AND INHERITANCE.—History of the Roman Will. Comparison of Roman and Hindoo Law.
The Roman Civil Procedure.
Relations of Roman to Modern European Law.

Fees:—for either Class, for a single Term, £2 12*s.* 6*d.*; for the Session, £6 6*s.*

CONSTITUTIONAL LAW AND HISTORY, AND ENGLISH LAW.

Professor J. W. Willis Bund, M.A., LL.B., Barrister-at-Law.
Lectures: Tuesday and Thursday, from 6.30 to 7.30

All in Room 18.

I. CONSTITUTIONAL LAW.

A. *First Term.*

Ten Lectures, commencing Tuesday, November 5, 1878, on the following **points of Constitutional Law**:—

1. The Crown.
2. The Royal Prerogative.
3. The House of Lords.
4. The House of Commons.
5. The Executive Government.
6. Taxation.
7. The Liberty of the Subject.
8. The Liberty of the Press.
9. The Military Forces.
10. The Law of Treason.

B. *Second Term.*

Ten Lectures, beginning Tuesday, January 21, 1879, on the Constitutional History of England from the Conquest to the Accession of Henry VII.

C. *Third Term.*

Ten Lectures, beginning Tuesday, April 22, 1879, on the Constitutional History of England from the Accession of Henry VII. to the Revolution of 1688.

II. ENGLISH LAW.

Lectures: Tuesday and Thursday, from 5.30 to 6.30.

A. *First and Second Terms.*

A Course of twenty Lectures on the Law of Real Property, beginning Tuesday, November 5th, 1878. [*Men.*]

B. *Third Term.*

A Course of ten Lectures on the Law of Evidence, beginning Tuesday, April 22nd, 1879. [*Men.*]

Fees:—for either Course, £6 6*s.*; for a single Term, £2 12*s.* 6*d.*

III. CONSTITUTIONAL HISTORY OF ENGLAND.

A. Twenty-eight Lectures, on Wednesdays, from 5.30 to 6.30 P.M., beginning on Wednesday, October 23rd, 1878. [*Women.*]

B. Sixteen Lectures on the period of which a detailed account is required at the Cambridge Higher Local Examination for 1879, on Fridays, from 5.30 to 6.30 P.M., commencing Friday, January 10th, 1879. [*Women.*]

These Lectures are especially intended for Governesses and Teachers.

Fees:—for both Courses, £2 2*s.*; for either, £1 11*s.* 6*d.*; for a Term, for both, £1 11*s.* 6*d.*; for either, £1 1*s.*

JURISPRUDENCE.

Professorship vacant.

It is expected that the Lectures on Jurisprudence will be resumed in January 1879. Particulars of the Course will be announced as early as possible.

ARCHITECTURE AND CONSTRUCTION.

Professor T. HAYTER LEWIS, F.S.A., F.I.B.A.

The treatment of this subject is divided into two separate Courses :—

A. ARCHITECTURE as a FINE ART.—B. ARCHITECTURE as a SCIENCE.

Each Course consists of Thirty Lectures in the year, divided into Two Series of Fifteen Lectures each, one of which will be delivered every week; viz.—A. Every Tuesday, from 7.10 to 8.10. B. Every Tuesday, from 6 to 7.

The First Series of each Course will commence on October 8th, and the Second at the beginning of February. Thus a Student wishing to go through the whole of the Series in one year would commence with the history of the earliest period of Art or Construction, and follow it down, in regular gradation, to the latest period.

In order to avoid the loss of time occupied by the students in taking detailed notes of the lecture, a list of the chief points to be referred to, such as the names and dates of buildings, the analyses and other details, will be given, where required, to each student, so that he will have to take only occasional notes as the lecture proceeds.

Fees:—for one Series in either A. or B., £3 13*s.* 6*d.*; for both, £6 6*s.* For both Series in either A. or B., £6 6*s.*; or for two Series in both, £11 11*s.*

Prizes. At the end of the Session Examinations will take place, and the following prizes will be given :—

For the best answers to questions relating to the Lectures of the First Series in either Art or Science, a Prize in Books.

For ditto, of the Second Series, the Donaldson Silver Medal.

The same Student cannot take a Prize in both Series.

The Council reserve to themselves the right of withholding any or all of the above mentioned prizes should the answers not be sufficiently satisfactory.

A. Architecture as a Fine Art. *Room* 18. [*Men.*]

First Series. Description and review of the several distinctive features and details of the Styles of Architecture used in ancient times, and of the changes which took place in the forms of the public and other structures under different nations, and at various dates: describing the chief general outlines of plan, elevation, and section of the different structures, forms of mouldings, ornamentation, and other details, and the circumstances under which changes of form took place, so as to explain the formation of the various styles found in ancient art.

Second Series. Architecture of the Byzantines, and of the Romanesque period in Italy and France; of the Normans in France and Britain, and of the Pointed style through its several varieties in Britain, France, &c., to the Renaissance in Italy, the various changes in the main outlines and in the details being noted as in the First Series.

All illustrated by numerous drawings of the finest examples. These drawings will be lent to the Students to be copied by them if wished.

WOMEN'S CLASS. *Room* 18.

A Course of Twelve Lectures will be given on Fridays, from 3 to 4, beginning on January 10th, 1879.

The subject will be treated in such a way as to give the history and details of Architectural Art, without entering into technical minutiæ. The distinctive characteristics of the several national styles will be pointed out, and the Lectures illustrated by a large number of drawings, which will be lent to the Students for copying, if required.

B. **Architecture as a Science.** *Room* 18. [*Men.*]

Materials used in Construction; History of the Manufacture of the various building materials made out of clay, &c. for walls, drainage, pavements, &c., with explanation of the methods adopted in ancient times and of those now used, any recent improvements being noted.

Composition of mortars, cements, and concrete, their several properties, the best means of using them, and the way of calculating their cost.

Foundations. Data for calculating the cost of excavating in different soils, &c. The precautions necessary to be taken in respect of drainage and ventilation connected therewith. Construction of walls of brick, rubble, &c., in ancient times, and thence, through the Middle Ages, to the present day.

Best methods of construction now adopted, and their cost.

The way in which timbers, deals, &c., are prepared for the market; the best methods of preventing the cracks (shakes) in them, and other practical rules. The use of timber in roofs, floors, &c. Dry rot. Shoring, needling, underpinning, &c. Arches of bricks, tiles, stones, &c. Groining, construction of domes. Manufacture of cast iron, wrought iron, steel, &c. Wrought-iron girders, ornamental iron work, &c. The properties of iron, strength of girders, &c.

Memoranda as to specifications, contracts, ancient and modern.

Stonework.—Description of the several kinds of stone; the method of quarrying them. Construction of stone walls, piers, columns, traceried windows, and other masonry in ancient, mediæval, and modern times both in Britain and in other countries.

During the Session, some of the buildings in London, as the British Museum, or Westminster Abbey, as also one of the chief builders' workshops, are visited by the Classes.

The attention of the Students of Architecture is particularly requested to the opportunity offered for instruction in Mathematics, Applied Mechanics, Physics, Chemistry, Civil and Mechanical Engineering, &c., particulars of which are contained in this Prospectus.

DEPARTMENT OF ENGINEERING.

The course of instruction in this Department is designed to afford to young men who intend to devote themselves to Engineering, the instruction in the methods and facts of science and the training in habits of scientific thought and observation which are every day becoming more essential for success in Engineering practice. It should be understood, however, that the course is not in any way intended to supersede a pupilage under a Civil or Mechanical Engineer. On the contrary, it is recognized that such a pupilage is the only means by which a Student can obtain any thorough knowledge of the practical details of his profession; the theoretical teaching given in the College, however, will be found to be of value not only directly, but by enabling those who have gone through it to take fuller advantage of the opportunities afforded during a professional pupilage.

Courses of Instruction.

There is an unrestricted admission of Students, without previous examination, to any Class or Classes which they may select. It is in all cases advisable, however, that a Student should consult the Dean or Vice-Dean of the Faculty of Science, or one of the Professors, before arranging his work. This is especially necessary in those cases in which, from want of time or other reasons, the Student deviates from one or other of the Curricula recommended below. These Curricula have been arranged so as to enable a Student to obtain as much benefit as possible from the instruction given in the Engineering Department, and in all cases where it is possible a Student is advised to attend one or other of them.

The complete Curriculum for a student intending to become a Civil or Mechanical Engineer extends over three Sessions; for a Student of Telegraphic Engineering it extends over four Sessions. These Courses are arranged as follows:—

(A) CIVIL ENGINEERING.

1st year: Modern Geometry; Junior Mathematics, Second Term (Algebra and Trigonometry); Junior Physics; Chemistry; Surveying; Geometrical Drawing.

2nd year: Senior Mathematics: both Divisions, or Division A and 2nd Course of Modern Geometry; Dynamics; Practical Physics; Practical Chemistry; Theory of Machines; Engineering Drawing.

3rd year: Senior Physics; Geology; Architectural Construction; Civil Engineering and Engineering Design; Engineering Drawing; Engineering Laboratory.

(B) MECHANICAL ENGINEERING.

1st year: Modern Geometry; Junior Mathematics, Second Term (Algebra and Trigonometry), Junior Physics, Chemistry, Surveying and Geometrical Drawing.

2nd year: Senior Mathematics: both Divisions, or Division A and 2nd Course of Modern Geometry; Dynamics, Practical Physics, Practical Chemistry, Theory of Machines, Engineering Drawing.

3rd year: Senior Physics, Geology, Mechanical Engineering and Engineering Design, Engineering Drawing, Engineering Laboratory.

Those Students who are far enough advanced at the end of their second Session may find it advisable to attend the Classes of Higher Senior Mathematics and Mathematical Physics in their third year. It is often advisable, too, that they should attend both Civil and Mechanical Engineering instead of only one of these Classes. Where a Student has time, he may, with great advantage, take up the study of some modern language in addition to his scientific work in his third year.

(C) TELEGRAPHIC ENGINEERING.

1st and 2nd years:—as for Mechanical Engineers, with the addition of Senior Physics in the 2nd year.

3rd year: Higher Senior Mathematics and Mathematical Physics, Physical and Engineering Laboratories.

4th year: devoted chiefly to electrical work in the Physical Laboratory, with the continued study of Mathematical Physics.

Either in the 3rd or 4th year the Student may with advantage attend one of the Higher Engineering Classes with the Drawing Class. During both of these years he should give some time to the study of modern languages.

General Certificate of Engineering.

To those Students who have attended Classes in the Engineering Department for not less than two consecutive Sessions, and whose attendance and conduct is considered satisfactory by the Faculty of Science, the College grants a General Certificate of Engineering. This Certificate contains a list of all the Classes in the full Engineering Course, and shows which of them the Student has attended, and the Class Certificates or other Honours which he has taken in each. It mentions, also, any Scholarship or special Prize obtained by the Student and any special work done by him (in Laboratories or otherwise) during his stay at the College. Those Students who attend the whole Engineering Course in either of its branches, and obtain Certificates of Honour in all their Classes, will obtain on their General Certificates a special endorsement to that effect.

CIVIL AND MECHANICAL ENGINEERING.

Professor Alex. B. W. Kennedy, C.E.

I. THEORY OF MACHINES.

Lectures: Tuesday and Thursday, from 12 to 1.

Strength of materials. Stress and strain. Behaviour of metals under stress. Fatigue of metals.

Practical design of the constructive elements of machines,—plummer-blocks, connecting-rods, shafts, pistons, valves, joints of various kinds, &c.

Constrained motion. Instantaneous centre and axis,—centroids and axoids. Kinematic elements, links and chains,—inversion of chains,—mechanisms. Kinematic notation and analysis of mechanisms and machines.

Statics and kinetics of mechanism and machines, treated chiefly by graphical methods, with practical applications. Friction—efficiency and counter-efficiency of pairs of elements and of mechanisms.

Fees:—for the Course, £5 5*s*.; for a single Term, £2 2*s*.

II. CIVIL ENGINEERING.

LECTURES: Tuesday and Thursday, from 9 to 10.

Sketch of the manufacture of Iron and Steel,—constructive processes in these metals.

Strength and stability of structures,—fixed and moving loads. Tests and testing-machines.

Characteristics of the principal types of bridges and roofs,—arches, suspension-bridges, continuous girders.

Theory of braced structures. Methods of calculation of stresses in the principal types of bridges and roofs. Computation of stresses in solid web girders and in continuous girders.

Practical design of the chief constructive details in iron bridge and roof work.

Foundations, piers and abutments—submerged foundations, caissons, cofferdams.

Railway engineering. Surveying and setting out a line, earthwork, retaining walls, tunnels. Permanent way and rolling stock. Signalling arrangements. The Locomotive. Train resistance.

Fees:—for the Course, £5 5*s*.; for a single Term, £2 2*s*.

III. MECHANICAL ENGINEERING.

LECTURES: Monday, Wednesday, and Friday, from 9 to 10.

Boilers,—design, construction and evaporative efficiency. Furnaces and fuels; economy of fuel.

The steam-engine,—characteristics and advantages of the principal types,—design and arrangement of the different parts (valve-gear, pumps, condenser, governor, &c.).

Theory of heat-engines in general. Air- and gas-engines. Steam,—theory of its action in the engine, expansion, condensation, the steam-jacket, &c.

Coefficients of performance and efficiency of the steam-engine,—methods of testing steam-engines.

Marine engines and propellers. Elements of the theory of propulsion and of the resistance of vessels.

Dynamometers and brakes.

Pumps and pumping engines,—hydraulic engines and turbines.

General characteristics of a few principal direct-acting machines;—machine-tools, hoisting machinery.

Fees:—for the Course, £7 7*s*.; for a single Term, £3 3*s*.

IV. ENGINEERING DESIGN.

LECTURES: Wednesday, from 10 to 11.

In this Class the Professor will enter in detail into the design of a few simple and important machines and structures, the calculations and working drawings for which will then be made by the Students in the Engineering Drawing Class. Its object will be to enable the Students, as far as is possible, to work out problems of the same kind as those which they will meet with in the everyday work of Engineers' drawing offices.

Fees:—for the Course, £3 3*s*.; for a single Term, £1 11*s*. 6*d*.

V. ENGINEERING DRAWING.

INSTRUCTION from 2 to 4 on Tuesdays and Thursdays.

The work of this Class is conducted in direct connexion with that of the Classes of Engineering and of the Theory of Machines. It is arranged so as to be, as far as possible, a progressive course of Engineering design, in which the Students apply practically the instruction they receive in the classes above named. It includes, therefore, the making of working drawings of machine details and of complete machines, as well as of the details of girder and roof-work, and the construction of diagrams of stresses, valve-motion diagrams, &c.

The hours mentioned above are those at which the Professor gives instruction in the Class. The drawing room is open every day from 10 to 5 o'clock to Students who wish to work in it, and the Professor is generally there for a short time after 10 o'clock, as well as at other hours, in order to give any help that may be required.

Fees:—for the Session, £6 6*s*.; for a single Term, £2 12*s*. 6*d*.

Students who are taking the Classes of Modern Geometry and of Engineering in the same year will be allowed to attend the Geometrical and the Engineering Drawing Classes, each for two hours a week, on payment of a single fee of £7 7*s*.

VI. SURVEYING AND LEVELLING.

LECTURES on Saturday from 9 to 10, during the Summer Term, and FIELDWORK on the same days from 10 o'clock. Instruction in the plotting of work done in the Field, the measurement of earth-work, &c., is given by the Professor at a special Drawing Class, which meets two hours a week during the Summer Term. The hours will be fixed to suit the convenience of the Students.

Theory and use of the principal instruments employed in surveying and levelling operations. Plotting surveys and levels. Ranging railway-curves. Measurement of earth-work and areas of land, &c.

Fees:—£5 5*s*. for the entire Course; £4 4*s*. for the Lectures and Fieldwork alone.

ENGINEERING LABORATORY.

A Laboratory in connexion with the Engineering Department of the College will be opened at the commencement of the Session. At the date at which this prospectus goes to press the arrangements in relation to this matter are not sufficiently advanced to allow any detailed announcements respecting it to be made; a special prospectus containing these will be issued later. It may be said here, however, that it is hoped to place in the Laboratory a large testing-machine, an experimental steam-engine and boiler and a few machine-tools, along with specially designed apparatus for conducting experiments upon various matters of interest and importance to engineers. Students working in the Laboratory will be instructed in the methods of testing the strength and elasticity of materials, of conducting steam-engine trials under various conditions, and generally in the accurate observation and measurement of phenomena having special bearing upon their future professional work. The Laboratory work will be arranged, as far as may be possible, so as not only to be of value as a means of education, but also so as to give results of intrinsic value in relation to many matters about which engineers still require accurate experimental determinations.

WORK-ROOM.

A Work-room is fitted up for the use of Students in the Classes of Mathematics, Physics, Engineering, and Drawing. It is opened about a fortnight after the commencement of the Session, and remains open from 10 to 5 on each day from Monday to Friday inclusive, and from 10 to 2 on Saturdays. Students joining it are at liberty to work there during whatever hours are most convenient to them. The work is superintended by M. PAUL ROBIN, M.Sc., under the direction of Professors HENRICI, FOSTER, and KENNEDY.

The description of work done in the Work-room is as follows:—

Mathematical Section.—The mechanical description of curves,—the construction of models of surfaces and of mathematical models in general, especially those connected with the work of the Class of Modern Geometry.

Physical Section.—The construction of models illustrative of various physical phenomena,—the construction of simple physical apparatus, and the performance of experiments with it. Students attending the Class of Practical Physics (page 27) are recommended to enter this Section of the Work-room.

Engineering Section.—The construction of models of pairs of elements, kinematic chains and mechanisms, models illustrating the formation of wheel teeth, the distribution of stress in bridges, roofs, and other structures, the arrangement of different types of valve-gear, &c.

Students attending more than one of the Classes mentioned can place themselves in *either* of the corresponding Sections in the Work-room.

The Fee for the Work-room—giving the right of attendance there for the whole or any part of the time during which it is open—is £2 12*s.* 6*d.* for the Session, or £1 1*s.* for a Term.

TABULAR STATEMENT

OF THE

FEES FOR THE ENGINEERING COURSES.

	Engineering, Civil.			Engineering, Mechanical.		
First Year.	£	*s.*	*d.*	£	*s.*	*d.*
Mathematics	10	10	0	10	10	0
Jun. Physics, with Exercise Class	13	13	0	13	13	0
Chemistry, with Exercise Class	9	9	0	9	9	0
Surveying and Levelling	5	5	0	5	5	0
Geometrical Drawing	6	6	0	6	6	0
	£45	3	0	£45	3	0
Second Year.						
Sen. Mathematics, Divisions A and B, or Sen. Math., Div. A, and Mod. Geom., 2nd Course	12	12	0	12	12	0
Dynamics	7	7	0	7	7	0
Practical Physics	5	5	0	5	5	0
Practical Chemistry (Summer)	5	5	0	5	5	0
Theory of Machines	5	5	0	5	5	0
Engineering Drawing	6	6	0	6	6	0
	£42	0	0	£42	0	0
Third Year.						
Senior Physics, with Exercise Class	11	0	6	11	0	6
Geology, Classes A and B	7	7	0	7	7	0
Architectural Construction	11	11	0	—	—	—
Civil Engineering	5	5	0	—	—	—
Mechanical Engineering	—	—	—	7	7	0
Engineering Design	3	3	0	3	3	0
Engineering Drawing	6	6	0	6	6	0
Engineering Laboratory (not yet fixed)						
	£44	12	6	£35	3	6

CIVIL ENGINEERING.

	M.	T.	W.	Th	F.	S.
First Year.						
Jun. Mathematics, 2nd Term only	....	10–11	10–11	10–11	....	....
„ „ Exercises	9–10	....	9–10	....	9–10	....
Modern Geometry, 1st Course	1–2	....	1–2†	....	1–2	....
Geometrical Drawing	2–4	....	....	2–4	....	....
Jun. Physics, Div. A and B	10–11	12–1	....	12–1	10–11	....
„ „ Exercises	12–1 / 3–4	....	....	....	12–1 / 3–4	....
Chemistry, 1st & 2nd Term	11–12	11–12	11–12	11–12	11–12	....
„ Exercises, 1st & 2nd Term	....	9–10	9–10	9–10	9–10	....
Surveying, 3rd Term, Lectures	....	....	....	....	....	9–10
„ Field-work	....	....	....	....	....	10–3
Second Year.						
Sen. Mathematics, Div. A	....	1–2	....	1–2	....	....
„ „ Exercises	....	11–12	....	11–12	....	....
Sen. Mathematics, Div. B	10–11	....	....	....	10–11	....
„ „ Exercises	11–12	....	....	....	11–12	....
Modern Geometry, 2nd Course	....	2–3	....	2–3	....	....
Dynamics	....	10–11	10–11	10–11	....	....
Practical Physics	....	....	12–2	....	....	....
Practical Chemistry, from beg. of May	....	11–12	11–12	11–12	....	....
Theory of Machines	....	12 1	....	12–1	....	....
Engineering Drawing	....	2–4	....	2–4	....	....
Third Year.						
Sen. Physics	3–4	....	4–5	....	3–4	....
„ „ Exercises	4–5	....	....	....	4–5	....
Geology, Class A, Lectures	....	12–1	....	12–1	....	....
„ Class B	....	....	....	3–4	....	....
Architectural Construction	....	6–7	....	....	....	....
Civil Engineering	....	9–10	....	9–10	....	....
Engineering Design	....	....	10–11	....	....	....
Engineering Drawing	....	2–4	....	2–4	....	....

Engineering Laboratory. (Times to be announced at the beginning of the Session.)

* It is expected that Students will attend only two of these three Classes.
† First and Third Terms only.

MECHANICAL ENGINEERING.

	M.	T.	W.	Th.	F.	S.
First Year.						
Jun. Mathematics, 2nd Term only	....	10–11	10–11	10–11	....	....
„ „ Exercises	9–10	....	9–10	....	9–10	....
Modern Geometry, 1st Course	1–2	....	1–2†	....	1-2	....
Geometrical Drawing	2–4	....	....	2–4	....	....
Jun. Physics, Div. A and B	10–11	12–1	....	12–1	10–11	....
„ „ Exercises	12–1 3–4	....	....	....	12–1 3–4	....
Chemistry, 1st & 2nd Terms	11–12	11–12	11–12	11–12	11–12	....
„ Exercises, 1st & 2nd Terms .	....	9–10	9–10	9–10	9–10	....
Surveying, 3rd Term, Lectures	....	....	....	....	....	9–10
„ Field-work	....	....	....	....	....	10–3
Second Year.						
*Sen. Mathematics, Div. A	....	1–2	....	1–2	....	....
„ „ Exercises	....	11–12	....	11–12	....	....
*Sen. Mathematics, Div. B	10–11	....	....	....	10–11	....
„ „ Exercises	11–12	....	....	....	11–12	....
*Modern Geometry, 2nd Course	....	2–3	....	2–3	....	....
Dynamics	....	10–11	10–11	10–11	....	....
Practical Physics	....	....	12–2	....	....	....
Practical Chemistry, from beg. of May..	....	11–12	11–12	11–12	11–12	....
Theory of Machines	....	12–1	....	12–1	....	....
Engineering Drawing	....	2–4	....	2–4	....	....
Third Year.						
Sen. Physics	3–4	....	4–5	....	3–4	....
„ „ Exercises	4–5	...	....	....	4–5	....
Geology, A Lectures	....	12–1	....	12–1	....	....
„ Class D	....	....	....	3–4	....	....
Mechanical Engineering	9–10	....	9–10	....	9–10	....
Engineering Design	....	....	10–11	....	....	....
Engineering Drawing	....	2–4	....	2–4	....	....
Engineering Laboratory. (Times to be announced at the beginning of the Session.)						

* It is expected that Students will attend only two of these three Classes.
† First and Third Terms only.

DEPARTMENT OF THE FINE ARTS.

SLADE SCHOOL

OF DRAWING, PAINTING, AND SCULPTURE.

N.B. In consequence of the insufficiency of the accommodation in the Fine-Art School, it has lately been necessary to limit the number of Students admitted to it, so that applications for admission should be made either before, or as soon as possible after, the beginning of each Term. The Fee must be paid within two days from the commencement of each Term.

Slade Professor, A. LEGROS.
Assistant, F. J. SLINGER.
Assistant in the Antique School, C. J. DURHAM.

GENERAL REGULATIONS.

1. The Studios are open for the Students from 9.30 A.M. to 5 P.M. except on Saturdays, when all the Schools are closed at 2 P.M.
2. Two models sit in the Life-Schools for five hours every day from 10 A.M.
3. The male and the female Students work together in the Antique School and from the Draped Model.
4. The College provides seats and easels; but the Students must furnish themselves with all the materials and with the other appliances that they may require.
5. A Refreshment Room and other accommodation, as well as a female attendant, are provided for the exclusive use of Ladies.
6. No fee less than that for a whole Term will be received.

COURSES OF STUDY.

All Students (except those specially exempted by the Professor) will, on entering the Schools, be required to draw from the Antique until judged sufficiently advanced to draw from the Life. They will also be allowed to paint from the Antique or the Life according to their proficiency.

Subjects for Composition will be given by the Professor from time to time.

The Students will also pursue such other studies as the Professor may direct, and will be required to work under his direction, from the Antique, from the Nude, or from the Draped Model, as he may think best for them, according to their degrees of proficiency.

GENERAL COURSE.

Fees:— for the Session, £19 19*s*., for each Term £7 7*s*.

Students entered to this Course will be entitled to work every day from the Nude or the Draped Model for five hours from 10 A.M., and

from the Antique or at other studies up to 5 P.M., except on Saturdays. Instruction in etching will be given by the Professor. A printer will attend every Friday to prepare the plates and take proofs of the Students' works.

ADDITIONAL COURSES.

I. Lectures on Anatomy.

Professor G. D. Thane, the Professor of Anatomy in the College, will deliver, during the Second Term, on Tuesdays and Thursdays at 4 P.M., commencing on Tuesday, January 21st, a Course of Lectures on Anatomy, with special reference to the requirements of Fine-Art Students.

The Course will consist of about twenty Lectures, treating chiefly of the Bones, Joints, and Muscles; and they will be illustrated by demonstrations on the Living Model.

At the end of the Course an examination will be held in the subjects of it, and a Prize will be awarded to the Student who in the examination displays the greatest proficiency.

Fee for the Course, £1 11*s.* 6*d.*

II. Lectures on Perspective.

Arrangements will be made for a Course of Lectures on this subject by Mr. Slinger. Students having entered for the *whole Session* will be admitted free to this Course. For other Students, Fee £1 1*s.*

Practical illustrations on the slate will be given from the first, and exercises to be done by the Students at home, as well as in the Class, will be set.

III. Lectures on Archæology.

A Course of Lectures on Classical Archæology, with special reference to the connexion between Art and Literature, may be delivered in the Summer Term should a sufficient number of Students enter their names for it.

LIBRARY.

The Fine-Art Library, which includes the "Field Memorial Library," will generally be open to all Students in the Fine-Art School from 2 to 5 o'clock.

SLADE SCHOLARSHIPS.

Under the Will of the late Mr. Felix Slade, six Scholarships of £50 per annum each, and tenable for three years, have been founded in the College, to be awarded to Students in Fine Arts not more than 19 years of age at the time of the award, for proficiency in Drawing, Painting, and Sculpture. Two of these Scholarships may be awarded every year.

Regulations.

1. The election to these Scholarships will be made at the first Meeting of the Council in June in each year*. Ladies as well as Gentlemen are eligible.

2. Competitors must produce certificates of birth, showing that they will not be more than 19 years of age at the date of the election.

3. Competitors must attend the day-classes in the Fine-Art School of the College during the Session preceding the date of election; and no one will be admissible to the competition who does not enter those Classes before the 16th of November in each year.

4. Competitors must also produce evidence of having passed an examination in general knowledge, such as the Matriculation Examination or the examinations for Women in the University of London, or some other equivalent examination that may be deemed satisfactory by the Council; or in default, must pass an examination of an elementary kind in the following subjects:—

(i.) The English Language.
(ii.) English History.
(iii.) Greek and Roman History.
(iv.) Ancient and Modern Geography.
(v.) The elementary processes of Arithmetic.
(vi.) One Foreign Language, to be chosen by the Candidate, or one Book of Euclid.

This Examination will be held at the College in the month of January in each year†.

5. The competition for the Scholarships will consist in various works of drawing and painting, or drawing and sculpture, including composition, to be prescribed by the Slade Professor from time to time; and the exact period during which the competition works must be executed will be announced every year.

6. The following conditions will be attached to the tenure of the Scholarships:—

(i.) The successful works in the competition for the Scholarships are to become the property of the College.

(ii.) The taking out of Tickets for, and attendance on, the General Course of Instruction in the Fine-Art Schools during the tenure of the Scholarships.

(iii.) Attendance on Courses of Lectures at the College on Anatomy and Perspective, or on any other subjects relating to Art, as may be required by the Slade Professor.

(iv.) The giving of assistance to the Slade Professor in the maintenance of order in the Schools, in superintending, under his direction, the younger students, and in taking charge of any Library and Collection of Works of Art which may be formed for the use of the Fine-Art Schools.

* That is, provided there be properly qualified Candidates of sufficient merit to be elected.

† Copies of the papers set at previous examinations may be had on application at the College.

The Council will have the right to withdraw a Scholarship at any time from a Scholar whose attendance and diligence are not satisfactory to the Slade Professor, or whose general conduct may make it desirable to remove him or her from the Schools.

SLADE PRIZES.

The following Prizes will be competed for during the Session, and will be open for competition to *those Students only* who have attended one at least of the Classes during the whole Session; their names being entered in the College Books before Nov. 16th. Students of the Fine-Art Department in the preceding Session will be admitted to these Competitions on attending during two Terms in the Session in which they compete, their names being entered before Feb. 16th.

The dates and other conditions of the competitions will be published in the course of the Session.

(i.) Prize and a College Silver Medal for the best painting from the life.

(ii.) Prize and a College Silver Medal for the best drawing from the life.

These Prizes may be taken, at the option of the successful Candidate, either in Money or in Books (to be selected by the Professor).

(iii.) Book-prize and a College Silver Medal for the best painting from an Antique Figure.

(iv.) Book-prize for the best drawing from an Antique Figure.

(v.) Book-prize for the best composition from a given subject.

(vi.) Book-prize for success in an examination in Anatomy held by Professor Thane at the end of his Course.

(vii.) Book-prize for the best drawings of the Skeleton and Anatomical figure done during the Session.

HENRY MORLEY,
Dean of the Faculty of Arts and Laws.

ALEX. B. W. KENNEDY,
Dean of the Faculty of Science.

TALFOURD ELY,
Secretary.

R. = Room; T. = Term.

LANGUAGE, PHI

Hour.	Monday.	Tuesday.	Wednesday.
9–10	Senior German. (R. 18.) Senior Persian. (R. 3.)	Senior Arabic. (R. 3.)	Senior German. (R. 18
10–11	Latin, Elementary. (R.1.) Junior German. (R. 18.)	Latin, Matriculation. (R.1.) Senior Greek. (R. 6.)	Latin, Elementary. (R.1. Senior Greek. (R. 6.)
11–12	Latin, 2 B.A. (R. 2.) Junior Greek. (R. 6.)	Latin, 2 B.A. (R. 2.) Junior Greek. (R. 6.)	Latin, 2 B.A. (R. 2.) Junior Greek. (R. 6.)
12–1	Latin, 1 B.A. (R. 1.)	Roman Literature. (R.1.) Early Eng. 1 B.A. (R. 3.)	Latin, 1 B.A. (R. 1.)
1–2	Senior Greek. (R. 6.)		Latin, Extra. (R. 2.) Engl. Composition. (R.3.)
2–3	Junior French. Senior French. } (R. 18.)	Phil. of Mind Ex., 1 T. Logic Ex., 2 T. Hist. Philos., adv., 3 T. } (R.1.) Eng. Lit. 1 B.A. Hon. (R.3.)	Senior French. (R. 18.)
3–4	Extra Greek. (R. 6.) English, 1 B.A. Pass. (R.3.)	English, 1 B.A. Pass. (R.3.)	Extra Greek. (R. 6.) Junior French. (R. 18.) Engl. Recent Lit. (R.3.)
4–5	Phil. of Mind, 1 T. Logic, 2 T. } (R. 1.) Junior Arabic. (R. 2.) Junior Sanskrit. (R. 23.) Engl. Language, Matric. and 1 B.A. (R. 3.)	Phil. of Mind, 1 T. Logic, 2 T. Hist. Philos., 3 T. } (R. 1.) Senior Sanskrit. (R. 23.) English, 1 B.A. Pass and Hon. (R. 3.)	Phil. of Mind, 1 T. Logic, 2 T. Ethics, 3 T. } (R. 1.) Junior Persian. (R. 2.) Junior Sanskrit. (R. 23.) English, Matric. and 1 B.A. (R. 3.)
5–6	Political Economy. (R.6.) Anglo-Saxon. (R. 3.)	Icelandic. (R. 3.)	Political Economy. (R.6.) Mœsogothic. (R. 3.)

Times for the Hebrew and Italian Classes will b

FOR MEN.

OPHY, HISTORY. Ex. = Exercise Class.

Thursday.	Friday.	Saturday.	Hour.
Senior Persian. (R. 3.)	Senior German. (R. 18.) 9.30. Latin, Translation at Sight. (R. 2.) Senior Arabic. (R. 3.)		9–10
Latin, Matriculation. (R. 1.) Senior Greek. (R. 6.)	Latin, Translation at Sight. (R. 2.) Junior German. (R. 18.)		10–11
Latin, 2 B.A. (R. 2.) Junior Greek. (R. 6.)	Latin, 2 B.A. (R. 2.) Junior Greek. (R. 6.)		11–12
Latin Philology. (R. 1.)	Latin, Matriculation. } (R. 2.) Latin, 1 B.A. }	History. (R. 19.)	12–1
	Senior Greek. (R. 6.)		1–2
Phil. of Mind Ex., 1 T. } (R. 1.) Logic Ex., 2 T. } Hist. Philos., adv., 3 T. Eng. 1 B.A. Ex. 1, 3 T. (R. 3.)	Senior French. (R. 18.) Eng. 1 B.A. Ex. 2 T. (R. 3.)		2–3
Eng. 1 B.A. Ex. 1, 3 T. (R. 3.)	Junior French. (R. 18.) Eng. 1 B.A. Ex. 2 T. (R. 3.)		3–4
Phil. of Mind, 1 T. } (R. 1.) Logic, 2 T. } Hist. Philos., 3 T. } Junior Arabic. (R. 2.) Senior Sanskrit. (R. 23.) Junior German. (R. 18.) Engl. Matric. Ex. 1, 3 T. (R. 3.)	Junior Sanskrit. (R. 23.) Engl. Matric. Ex. 2 T. (R. 3.)	Junior Persian. (R. 2.)	4–5
			5–6

arranged at the beginning of the Session.

R. = Room; Th. = Theatre.

Hour.	Monday.	Tuesday.	Wednesday.
9–10	Senior Persian. (R. 3.) Senior German. (R. 18.)	Senior Arabic. (R. 3.)	Senior German. (R. 18.)
10–11	Latin Elementary. (R.1.) History of English Language. (R. 19.)	Latin, Matriculation. (R.1.) Senior Greek. (R. 6.)	Latin, Elementary. (R.1.) History of English Language. (R. 19.) Senior Greek. (R. 6.)
11–12	Latin, 2 B.A. (R. 2.) English Literature (1760–1815). (R. 19.)	Latin, 2 B.A. (R. 2.)	Latin, 2 B.A. (R. 2.) English Literature (1760–1815). (R. 19.)
12–1	Latin, 1 B.A. (R. 1.)	Roman Literature. (R.1.) Early English. (R. 3.)	Latin, 1 B.A. (R. 1.)
1–2	Senior Greek. (R. 6.)		Latin, Extra. (R. 2.)
2–3	Senior French. (R. 18.)	Phil. of Mind, Ex. 1 T. Logic, Ex. 2 T. } (R. 1.) Hist. Phil., advan., 3 T. (R. 1.)	Senior French. (R. 18.)
3–4	French Literature. (R.18.)	Advanced Greek. (R. 6.)	Engl. Recent Lit. (R. 3.) German Literature. (R.19.)
4–5	Phil. of Mind, 1 T. Logic, 2 T. } (R. 1) Junior Arabic. (R. 2.) Junior Sanskrit. (R. 23.)	Phil. of Mind, 1 T. Logic, 2 T. Hist. of Philos., 3 T. } (R. 1.) Elementary Greek. (R.6.) Eng., Single Works. (R.3.) Senior Sanskrit. (R. 23.)	Phil. of Mind, 1 T. Logic, 2 T. Ethics, 3 T. } (R. 1.) Junior Persian. (R. 2.) Junior Sanskrit. (R. 23.)
5–6	Political Economy. (R.6.) Anglo-Saxon. (R. 3.)	Icelandic. (R. 3.)	Political Economy. (R.6.) Mœso-Gothic. (R. 3.) 5·30 } Eng. Constitutional 6·30 } History. (R. 18.)
6–7	Teachers' Class of Eng. Lit. (Math. Th.)	English Composition. (Math. Th.)	6.30 } Constitutional 7.30 } Law. (R. 18.)

Times for the Hebrew and Italian Classes will be

FOR WOMEN.

SOPHY, HISTORY. T. = Term; Ex. = Exercise Class.

Thursday.	Friday.	Saturday.	Hour.
Senior Persian. (R. 3.)	Senior German. (R. 18.) 9.30. Latin, Translation at Sight. (R. 2.) Senior Arabic. (R. 3.)		9–10
Latin, Matriculation. (R.1.) Senior Greek. (R. 6.)	Latin, Translation at Sight. (R. 2.)		10–11
Latin, 2 B.A. (R. 2.)	Latin, 2 B.A. (R. 2.)		11–12
Latin Philology. (R.1.)	Latin, Matriculation. } R. 2. Latin, 1 B.A. }	12.30. History. (R. 3.) 1.30. Fr. Lang. (R. 18.)	12–1
	Senior Greek. (R. 6.)		1–2
Phil. of Mind, Ex. 1 T. } R. 1.) Logic Ex., 2 T. } Hist. Phil., advan., 3 T. (R. 1.)	Senior French. (R. 18.)		2–3
Advanced Greek. (R. 6.)			3–4
Phil. of Mind, 1 Term. } Logic, 2 Term. } (R.1.) Hist. Philos., 3 Term. } Elementary Greek. (R.6.) Senior Sanskrit. (R. 23.) Junior Arabic. (R. 2).	Junior Sanskrit. (R. 23.)	Junior Persian. (R. 2.)	4–5
			5–6
			6–7

arranged at the beginning of the Session.

R. = Room. Th. = Theatre.

PHILOSOPHY, MATHEMATICS

Hours.	Monday.	Tuesday.	Wednesday.
8–9	Botany(Sum.). (Bot.Th.)	Botany(Sum.). (Bot.Th.)	Botany(Sum.). (Bot.Th
9–10	Jun.Math.Ex.(Math.Th.)	Chemistry Ex. (R. 23.)	Jun.Math.Ex.(Math.Th Chemistry Ex. (R. 23.
10–11	Sen.Math.,B. (Math.Th.) Physiology. Elem. Mech., 1, 2 T. Exp. Physics, 3 T. (Phys. Th.) Pract. Chem., 2nd Course (Summer).(Chem.Th).	Jun.Math.,A. (Math.Th.) Physiology. Dynamics. (R. 23.)	Jun.Math.,A. (Math.Th. Physiology. Dynamics. (R. 23.)
11–12	S.Math.,B,Ex. (Math.Th.) Chemistry. (Chem. Th.) Pract. Chem., 2nd Course (Summer).(Chem.Th.)	S.Math.,A,Ex.(Math.Th.) Chemistry. (Chem. Th.) Chemistry Matric., 3 T. (R. 23, and Chem. Th.)	Chemistry. (Chem.Th.) Chemistry Matric., 3 T. (R. 23, and Chem. Th.)
12–1	Elem. Mech. Ex., 1 & 2 T. (R. 5.)	Exp.Physics. (Phys.Th.) Geol.&Mineral.,A.(R.19.)	Practical Physics.
1–2	Mod.Geom.,A.(Math.Th.) Low. Jun. Math. (R. 5.)	S.Math.,A. (Math. Th.)	Mod.Geom.,A.(Math.Th.) Practical Physics. Zoology & Comp. Anat., 1 and 2 T. Low. Jun. Math. (R. 5.)
2–3	Geometr.Drawing. (R.8.)	Mod.Geom.,B.(Math.Th.) Phil. of Mind Ex., 1 T. Logic Ex., 2 T. (R. 1.) Hist. of Phil. adv., 3rd T.	Elem. Biology, 1 T. Comp. Anat. Labr., 2 T.
3–4	Geometr.Drawing. (R.8.) Exp. Physics Ex. (R. 5.) Sen.Physics. (Phys.Th.)	Geology, C., 1st and 2nd T. (R. 19.)	Elem. Biology, 1 T. Comp. Anat. Lab., 2 T.
4–5	Senior Physics Ex. (Phys. Th.) Chem. Tech. 1 Term. Phil. of Mind, 1 T. Logic, 2 T. (R. 1.)	Chem. Tech., 2nd Term. Phil. of Mind, 1 T. Logic, 2 T. Hist. of Philos., 3 T. (R. 1.)	Sen.Physics. (Phys.Th.) Elem. Biology, 1 T. Comp. Anat. Labr., 2 T. Phil. of Mind. 1 T. Logic, 2 T. Ethics, 3 T. (R. 1.)
5–6	PoliticalEconomy. (R.6.)		PoliticalEconomy.(R.6.)
6–7		Architecture, B. (R.18.) 7.10–8.10. Architect., A.	

FOR MEN.

NATURAL SCIENCES. T. = Term. Ex. = Exercise Class

Thursday.	Friday.	Saturday.	Hours.
Botany(Sum.). (Bot.Th.)	Botany(Sum.).(Bot. Th.)		8–9
Chemistry Ex. (R. 23.)	Jun.Math.Ex.(Math.Th.) Chemistry Ex. (R. 23.)		9–10
Jun.Math.,A. (Math.Th.) Physiology. Dynamics. (R. 23.)	Sen.Math.,B. (Math.Th.) Physiology. Elem. Mech., 1, 2 T. Exp. Physics, 3 T. (Phys. Th.)	Pract. Chem., 2nd Course (Summer). (Chem.Th.)	10–11
S.Math.,A,Ex.(Math.Th.) Chemistry. (Chem. Th.) Chemistry Matric., 3 T. (R. 23, and Chem. Th.)	S.Math.,B,Ex.(Math.Th.) Chemistry. (Chem. Th.) Chemistry Matric., 3 T. (R. 23, and Chem. Th.)	Pract. Chem., 2nd Course (Summer).(Chem.Th.)	11–12
Exp.Physics. (Phys. Th.) Geol.&Mineral.,A.(R.19.)	Elem. Mech. Ex., 1 & 2 T. (R. 5.)		12–1
S. Math., A. (Math. Th.) Zoology & Comp. Anat., 1 and 2 T. Low. Jun. Math. (R. 5.)	Mod.Geom.,A.(Math.Th.) Zoology & Comp. Anat., 1 and 2 T.		1–2
Mod.Geom.,B.(Math.Th.) Geom. Drawing. (R. 8.) Phil. of Mind Ex., 1 T. Logic Ex., 2 T. (R. 1.) Hist. of Phil. adv., 3rd T. Elem. Biology, 1 T.	Elem. Biology, 1 T. Comp. Anat. Labr., 2 T.		2–3
Geom. Drawing. (R. 8.) Geology, B. (R. 19.) Elem. Biology, 1 T. Comp. Anat. Labr., 2 T.	Elem. Biology, 1 T. Comp. Anat. Labr., 2 T. Exp. Physics Ex. (R. 5.) Sen.Physics. (Phys.Th.)		3–4
Chem. Tech., 1st & 2nd T. Phil. of Mind, 1 T. Logic, 2 T. Hist.of Philos. 3 T. (R. 1.) Elem. Biology, 1 T. Comp. Anat. Labr. 2 T.	Senior Physics Ex. (Phys.Th.) Elem. Biology, 1 T. Comp. Anat. Labr., 2 T.		4–5
			5–6
			6–7

SCIENCE LECTUR

R. = Room; Th. = Theatre.

Hour.	Monday.	Tuesday.	Wednesday.
9–10			
10–11	Senior Mathematics, B. (Math. Th.)	Dynamics. (R. 23.)	Dynamics. (R. 23.)
11–12	Senior Mathematics, B, Ex. (Math. Th.)	Sen. Mathem., A, Ex. (Math. Th.) Elem. Mathem. (R. 23.)	
12–1	Jun. Physics. (Phys. Th.)	Geology and Mineral., A. (R. 19.)	
1–2	Modern Geometry, A. (Math. Th.)	Senior Mathematics, A. (Math. Th.)	Modern Geometry, A (Math. Th.)
2–3	Geometr. Drawing. (R. 8.)	Mod. Geom., B. (Math. Th.) Phil. of Mind, Ex., 1 T. Logic, Ex., 2 T. Hist. Philos., adv. 3 T. } (R. 1.) Jun. Physics. (Phys. Th.)	Elem. Biology, 1 T.
3–4	Geometr. Drawing. (R. 8.) Sen. Physics. (Phys. Th.)	Geol. C., 1 & 2 T. (R. 19.)	Hygiene and Public Health.
4–5	Sen. Phys. Ex. (Phys. Th.) Phil. of Mind, 1 T. Logic, 2 T. } (R. 1.)	Phil. of Mind, 1 T. Logic, 2 T. Hist. Philos., 3 T. } (R. 1.)	Sen. Physics. (Phys. Th Elem. Chem. (Chem. Th Phil. of Mind, 1 T. Logic, 2 T. Ethics, 3 T. } (R. 1.)
5–6	5.30–6.30. Elem. Botany. (Bot. Th.)	Physiology.	5.30–6.30. Elem. Botan (Bot. Th.)
6–7			

FOR WOMEN.

T. = Term; Ex. = Exercise Clas

Thursday.	Friday.	Saturday.	Hour.
			9–10
Dynamics. (R. 23.)	Senior Mathematics, B. (Math. Th.)		10–11
Senior Mathem., A, Ex. (Math. Th.) Elem. Mathem. (R. 23.)	Senior Mathem., B, Ex. (Math. Th.) Elem. Mathem. (R. 23.)		11–12
Geology and Mineral., A. (R. 19.)	Jun. Physics. (Phys. Th.)		12–1
Senior Mathematics, A. (Math. Th.)	Modern Geometry, A. (Math. Th.)		1–2
Mod. Geom., B. (Math. Th.) Phil. of Mind, Ex., 1 T. } (R. 1.) Logic, Ex., 2 T. } Hist. Philos., adv., 3 T. Geomet. Drawing. (R. 8.) Jun. Physics. (Phys. Th.) Elem. Biology, 1 T.	Elem. Biology, 1 T.		2–3
Geology, B. (R. 19.) Geometr. Drawing. (R. 8.)	Architecture. (R. 18.) Sen. Physics. (Phys. Th.)		3–4
Phil. of Mind, 1 T. } Logic, 2 T. } (R. 1.) Hist. Philos., 3 T. }	Sen. Physics, Ex. (Phys. Th.) Elem. Chem. (Chem. Th.)		4–5
Physiology.	5.30–6.30. Elem. Botany. (Bot. Th.)		5–6
6.30–7.30. Teachers' Arithmetic. (Math. Th.)			6–7