

CALENDAR  
OF  
DALHOUSIE COLLEGE  
AND  
UNIVERSITY.

HALIFAX, NOVA SCOTIA.

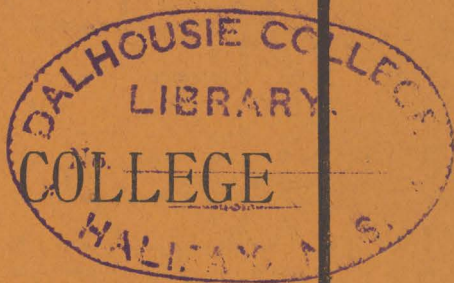
1904-05.



HALIFAX :

PRINTED FOR THE UNIVERSITY BY THE McALPINE PUBLISHING CO., LTD.

1904.



# 1904-05.

## TIME TABLE—FACULTIES OF ARTS AND SCIENCE.

Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
9-10	Chemistry 1. German 3 Geol. 1 (Lab.)	Chemistry 2 French 3 Mining 1	Chemistry 1. German 3 Geol. 1 (Lab.)	Chemistry 2. French 3.	Chemistry 1. German 3 Mining 1
10-11	Latin 2. Mathematics 1 Philosophy 3. Physics 2. Geol. 1 (Lab.)	Greek 1 Math. 2. English 3. Pol. Econ. 1. Mineralogy 1.	Latin 2. Math. 1 Philosophy 3. Physics 2. Geol. 1 (Lab.)	Greek 1 Math. 2 English 3. Pol. Econ. 1. Geology 2	Latin 2. Math. 1 Mineralogy 1
11-12	Latin 1. History 1. Math. 2 Physics 4. Metallurgy 2 (Sec. Term). Mining 3	Greek 2 History 2. Math. 1. Physics 1. Mining 2	Latin 1. History 1. Math. 2 Physics 4. Metallurgy 2 (Sec. Term). Mining 3	Greek 2 History 2. Math. 1 Physics 1.	Latin 1. History 1. Math. 2 Mining 2
12-1	English 2. Math. 3, 4 Geology 2 Latin 3	English 1. Astronomy Geology 1 Greek 3 Philosophy 1.	English 2. Math. 3, 4 Geology 3 Latin 3	English 1. Astronomy Geology 1 Greek 3 Philosophy 1	English 2. Math. 3, 4 Geology 2 Adv. Classics
2-3	German 2 Metallurgy 3.	French 2. Metallurgy 1 (Sec. Term). Biology	German 2 Metallurgy 3.	French 2 Metallurgy 1 (Sec. Term).	German 2. Metallurgy 4
3-4	German 1 Philosophy 4. Chem. 1 (Lab.) Chem. 2 (Lab.) App. Mechan. Metallurgy 1 Metallurgy 2	French 1. Bib. Literature Biology Physics 6. App. Mechan. Metallurgy 1 Metallurgy 2 (First Term)	German 1 Philosophy 4. Chem. 1 (Lab.) Chem. 2 (Lab.)	French 1 Physics 6. App. Mechan. Metallurgy 1 (Sec. Term).	German 1 Geol. 1 (Lab.) Metallurgy 4 Metallurgy 2 (Sec. Term).
4-5	Physics 1. Chem. 1 (Lab.) Chem. 2 (Lab.) Miner. 1 (Lab.)	Physics 6. Drawing Metallurgy 1 (Sec. Term)	Philosophy 1. Chem. 1 (Lab.) Chem. 2 (Lab.) Miner. 1 (Lab.)	Physics 6. Drawing Metallurgy 1 (Sec. Term)	Bib. Literature. Drawing Metallurgy 4 Miner. 1 (Lab.) Geol. 1 (Lab.)
5-6	Chem. 1 (Lab.) Chem. 2 (Lab.) Miner. 1 (Lab.)	Physics 6. Metallurgy 1 (Sec. Term). Drawing	Chem 1 (Lab.) Chem. 2 (Lab.) Miner. 1 (Lab.)	Physics 6. Metallurgy 1 (Sec. Term). Drawing	Geol. 1 (Lab.) Metallurgy 4 Miner. 1 (Lab.) Drawing
7.30-9.30 P. M.			Drawing	Metallurgy 4 9 A. M.—6 P. M.	

Saturdays: Biology 11 A. M.—1 P. M.  
Geology, 1, 2.—Field and Library work throughout the day.  
Mining and Metallurgical Excursions and Exercises throughout the day.

N. B.—The days and hours of meeting of Civil Engineering and other classes not mentioned in this Time Table will be announced at the opening of the session.

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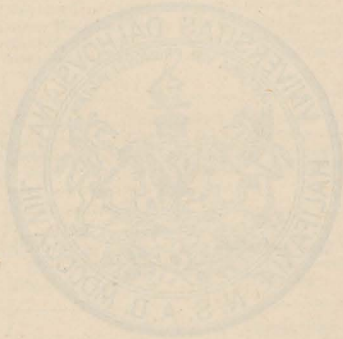
CALENDAR

DALHOUSIE COLLEGE

UNIVERSITY

HALIFAX, N.S. & SCOTIA

1904-05



PRINTED AND PUBLISHED BY THE UNIVERSITY OF DALHOUSIE, HALIFAX, N.S.

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# UNIVERSITY ALMANAC, 1904-1905.

1904.

- Aug. 11 Th.—Last day for receiving applications for Autumn Preliminary Examination (Provincial Medical Board).
15. M.—Last day for receiving notices of Supplementary Examinations (Medical Faculty).
16. Tu.—Last day for receiving notices of Supplementary Examinations (Law Faculty).
25. Th.—Session (Medical Faculty) begins. Preliminary Examination (Prov. Med. Board) begins at 9 A. M., at Dalhousie College.
29. M.—Supplementary Examinations begin (Medical Faculty).
- “ “ —Results Preliminary Examination (Prov. Med. Board) declared, and certificates issued, 10 A. M.
- “ “ —Registration and payment of Class Fees (Medical Faculty) 11 A. M.
- Sept. 3. Sa.—10 A. M., Meeting of Senate.
5. M.—Last day for receiving notices of Supplementary Examinations (Arts and Science Faculties).
6. Tu.—Session begins (Arts, Science and Law Faculties).  
10 A. M., Registration and payment of Class Fees (Law Faculty).  
3 P. M., Supplementary Examinations (Law Faculty).  
3 P. M., Registration of Candidates for Matriculation and Scholarship Examinations (Arts and Science Faculties).  
Lectures begin at Halifax Medical College.
7. W.—Examination for Junior and Senior Matriculation and for Entrance Scholarships (Arts and Science Faculties).  
9 A. M., Latin.  
3 P. M., Greek.
8. Th.—9 A. M., Geometry.  
11 A. M., Trigonometry.  
3 P. M., Arithmetic, Algebra.
9. F.—9 A. M., History and Geography.  
3 P. M., English.
10. Sa.—9 A. M., French.  
3 P. M., German.
12. M.—9 A. M., Chemistry.  
9 A. M., Supplementary Examinations begin (Arts and Science Faculties).
14. W.—9 A. M., Meetings of Faculties of Arts and Science.  
3 P. M., CONVOCATION. Address by Prof. F. H. Sexton, S. B.
15. Th.—Registration and payment of class fees (Arts and Science Faculties).
16. F.—Lectures begin (Arts, Science and Medical Faculties).
- Oct. 1. Sa.—Intimation as to elective subjects to be made by undergraduates (Arts and Science Faculties) on or before this day.
14. F.—Returns as to residence and church attendance to be made on or before this day.  
Th.—Thanksgiving Day. No lectures.  
F.—Munro Day. No lectures.

- Dec. 15. Th.—Last day of lectures (Faculties of Arts, Science and Medicine).  
 17. Sa.—Christmas Examinations (Arts and Science Faculties) begin.  
     9.00 A. M., Philosophy 1, Physics 2.  
     3.00 P. M., Physics 1, Education 1.  
 19. M. 8.45 P. M., Latin.  
     11.15 A. M., History 2.  
     3.00 P. M., Biology.  
 20. Tu.—9.00 A. M., German.  
     11.15 A. M., Mathematics.  
     3.00 P. M., English 1, Philosophy 4.  
 21. W.—9.00 A. M., Political Economy.  
     11.15 A. M., English 2 and 4.  
     3.00 P. M., Chemistry, Philosophy 3.  
 22. Th.—9.00 A. M., Greek.  
     11.15 A. M., French.  
     3.00 P. M., Mathematics, History 1, Applied Mechanics.  
 23. F. —Christmas vacation begins.

## 1905.

- Jan. 3. Tu.—Lectures resumed (Faculty of Law and Halifax Medical  
 'College).  
 10. Tu.—Lectures resumed (Faculties of Arts, Science and Medicine).  
 Feb 23. Th.—Last day of lectures (Faculty of Law).  
 24. F. —Sessional Examinations begin (Faculty of Law).  
     3 P. M., Equity ; Real Property, 1st Year.  
 25. Sa.—10 A. M., Evidence.  
     3 P. M., Crimes.  
 27. M. —10 A. M., Constitutional History ; International Law.  
     3 P. M., Constitutional Law.  
 28. Tu.—10 A. M., Sales.  
 Mar. 1. W —Last day for receiving M. A. and M. Sc. Theses.  
     Sessional Examinations (Faculty of Law.)  
     10 A. M., Real Property, Advanced.  
     3 P. M., Torts.  
 2. Th.—3 P. M., Shipping.  
 3. F. —10 A. M., Contracts ; Conflict of Laws.  
 8. W. —Ash Wednesday. No Lectures.  
 29. W.—Last day for receiving applications for Primary and Final  
     M. D., C. M. Examinations.  
 31. F. —Last day for receiving B. E. Theses.  
 Apr. 4. Tu.—Last day of lectures (Faculties of Arts and Science).  
 6. Th.—Last day of lectures (Faculty of Medicine).  
     " —Spring Examinations (Faculties of Arts and Science) begin—  
     9.00 A. M., Philosophy 1 and 3.  
     3.00 P. M., Education, Mathematics.  
 7. F. —9.00 A. M., Practical Chemistry (Laboratory, 1st Division).  
     2.30 P. M., Practical Chemistry (Laboratory, 2nd Division).  
 8. Sa.—9.00 A. M., Latin.  
     3.00 P. M., French, Geology 2.  
 10. M.—Class certificates (Medical Faculty, and Hal. Med. College),  
     issued on presentation of class fee receipts at Registrar's  
     office, and at Hal. Med. College, respectively.  
     9.00 A. M., English 2 and 3, Geology 1.  
     3.00 P. M., Physics 2.  
 11. Tu —9.00 A. M., English 1, Additional English 3, Physics 1.  
     3.00 P. M., Physics 6 and 7, Addit. Philosophy 1 and 3.

- Apr. 12. W.—Primary and Final M. D., C. M. Examinations begin.  
 9.00 A. M., Political Economy, Junior Anatomy.  
 3.00 P. M., Additional Latin; Physiology and Histology;  
 Obstetrics and Diseases of Women and Children.
13. Th.—9.00 A. M., Chemistry 1.  
 3.00 P. M., History 1 and 2; Senior Anatomy; Surgery.
14. F.—9.00 A. M., Greek; Zoology.  
 3.00 P. M., Philosophy 4; Chemistry 2; Medicine.
15. Sa.—9.00 A. M., Addit. Greek; Addit. French; Botany; Oral  
 Examination in Chemistry.  
 2.00 P. M., Orals in Primary M. D., C. M., Examinations.  
 3.00 P. M., German.
17. M.—9.00 A. M., Mathematics; Addit. Physics 2; Medical Physics.  
 3.00 P. M., Addit. History; Addit. English 1 and 2, Pathology  
 and Bacteriology.
18. Tu.—9.00 A. M., Addit. Mathematics; Addit. Philosophy 4; Clinical  
 Medicine, at Victoria General Hospital  
 2.00 P. M., Clinical Medicine at Victoria General Hospital.  
 3.00 P. M., Additional Physics 1; Applied Mechanics; Materia  
 Medica and Therapeutics.
19. W.—9.00 P. M., Additional German; Clinical Surgery at Victoria  
 General Hospital; Medical Jurisprudence and Hygiene.  
 2.00 P. M., Clinical Surgery at Victoria General Hospital.  
 3.00 P. M., Addit. Political Economy.
20. Th.—2.00 P. M., Oral Examination in Materia Medica and Thera-  
 peutics, Pathology and Bacteriology, Medical Jurispru-  
 dence and Hygiene.
21. F.—Good Friday.
22. Sa.—9.00 A. M., Meeting of Faculties of Arts and Science.  
 2.00 P. M., Oral Examinations in Surgery, Medicine, Ob-  
 stetrics and Diseases of Women and Children.  
 8.00 P. M., Meeting of Faculty of Medicine.
24. M.—9.00 A. M., Meeting of Senate.  
 10.00 A. M., Results of Examinations (Faculties of Arts,  
 Science and Medicine), declared.
25. Tu.—3.00 P. M., CONVOCATION.
- May 2. Tu.—Summer Session of Mining School begins.  
 9. Tu.—4.00 P. M., Annual Meeting of Faculty of Medicine.
- June 9. F.—Summer Session ends
- N. B.—The dates of the Examinations are liable to change as circum-  
 stances may demand.



## HISTORICAL SKETCH.

DALHOUSIE COLLEGE was founded in 1818 by the Right Honourable George Ramsay, Ninth Earl of Dalhousie, "for the education of youth in the higher branches of science and literature."

The original endowment was derived from funds collected at the port of Castine, in Maine, during its occupation in 1814 by Sir John C. Sherbrooke, then Lieutenant-Governor of Nova Scotia.

In a letter to Lord Bathurst, dated December 14th, 1817, Lord Dalhousie, with the unanimous consent of the Council, proposed that £9,750 of these funds be devoted to the "founding of a College or Academy on the same plan and principle as that in Edinburgh," "open to all occupations and sects of religion, restricted to such branches only as are applicable to our present state, and having the power to expand with the growth and improvement of our society," and that this College be established in Halifax, "the seat of the legislature, of the courts of justice, of the military and the mercantile society," "in front of St. Paul's Church," on "the Grand Parade."

On the 6th of February, 1818, Lord Bathurst wrote expressing the Prince Regent's "entire approval of the application of the funds in question in the foundation of a Seminary in Halifax for the higher classes of learning."

The building was begun in 1819, and on the 22nd of May, in the year 1820, "the corner stone of this College, designed for a Public Seminary in which the youth of this and other British Provinces may be educated in the various branches of literature and science, was laid by His Excellency Lieutenant-General, the Right Honourable George Ramsay, Earl of Dalhousie, G.C.B., Captain-General and Governor-in-Chief in and over His Majesty's Provinces of Lower Canada, Upper Canada, Nova Scotia and New Brunswick, and the islands of Prince Edward and Cape Breton."

It was not until the 13th of January, 1821, that the "Bill to incorporate the Governors of Dalhousie College at Halifax" became law. The exterior of the building was completed about this time, and two rooms were fitted up for lectures. The total cost of the building to June, 1822, was £11,806 2s. currency, so a manuscript minute of the Board of Governors states.

The original Board of Governors consisted of the Governor-General of British North America, the Lieutenant-Governor of Nova Scotia, the Bishop, the Chief Justice, the President of the Council, the Provincial Treasurer and the Speaker of the House of Assembly.

After unsuccessful efforts in 1823-4 and 1829-36 on the part of both the British Government and the Board of Governors to effect a union with King's College, the only other then existing in the Province, this College went into operation in 1838, under the Presidency of the Rev. Thomas McCulloch, D.D., and with a staff of three professors.

By an Act passed in 1841, University powers were conferred on the College, and the appointment of the Governors was vested in the Lieutenant-Governor and Council.

In 1843, President McCulloch died; and in 1845, the College was closed, the Governors considering it "advisable to allow the funds of the institution to accumulate."

In 1848, an Act was passed authorizing the Lieutenant-Governor and Council to appoint a new Board of Governors "to take such steps for rendering the institution useful and efficient as to His Excellency may seem fit." This Board, from 1849 to 1859, employed the funds of the University to support a High School.

In 1856, the Arts department of Gorham College, Liverpool, N.S., was transferred to this College "with a view to the furtherance of the establishment of a Provincial University," and an attempt was made to conduct the institution as a University under the Act of 1841. This union, however, came to an end in 1857.

In 1863, the College was re-organized under the following Act:

*An Act for the Regulation and Support of Dalhousie College.*

(Passed the 20th day of April, A.D., 1863.)

WHEREAS, it is expedient to extend the basis on which the said College is established, and to alter the constitution thereof, so as the benefits that may be fairly expected from its invested capital and its central position may, if possible, be realized, and the design of its original founders, as nearly as may be, carried out.

*Be it enacted by the Governor, Council, and Assembly, as follows:*

1. The Board of Governors now appointed, consisting of the Honourable William Young, the Honourable Joseph Howe, Charles Tupper, S. Leonard Shamon, John W. Ritchie, and James F. Avery, Esquires, shall be a body politic and corporate by the name and style of the Governors of Dalhousie College at Halifax, and shall have and exercise all usual powers and authorities as such, and have the title, control and disposition of the buildings on the Parade, at Halifax, and of the property and funds belonging to the said College and held for the use thereof, by the present Governors; and all vacancies at the Board shall be filled up on recommendation of the remaining members thereof by the Governor-in-Council; and any of the Governors shall be removed by the Governor-in-Council, at the instance of the Board of Governors.

2. Whenever any body of Christians, of any religious persuasion whatsoever, shall satisfy the Board that they are in a position to endow and support one or more chairs or professorships in the said College, for any branch of literature or science approved by the Board, such body in making such endowment, to the extent of twelve hundred dollars a year, shall have a right, from time to time, for every chair endowed, to nominate a Governor to take his seat at the Board with the approval of the Board of Governors and of the Governor-in-Council, and shall also have a right, from time to time, to nominate a Professor for such chair, subject to the approval of the Board of Governors; and in the event of the death, removal, or resignation of any person nominated under this section, the body nominating shall have the power to supply the vacancy thus created.

3. The same right of nominating a Professor from time to time shall belong to any individual or number of individuals, who shall endow to the same extent and support a chair or professorship, and to the nominee of any testator by whose will a chair or professorship may be so endowed.

4. The Governors shall have power to appoint, and to determine the duties and salaries of the President, Professors, Lecturers, Tutors, and other officers of the College, and from time to time to make statutes and by-laws for the regulation and management thereof, and shall assemble together as often as they shall think fit, and upon such notice as to them shall seem meet, and for the execution of the trust hereby reposed in them.

5. The said College shall be deemed and taken to be a University, with all the usual and necessary privileges of such institutions; and the students shall have liberty and faculty of taking the degrees of bachelor, master, and doctor, in the several arts and faculties at the appointed times; and shall have liberty within themselves of performing all scholastic exercises for the conferring of such degrees, and in such manner as shall be directed by the statutes and by-laws.

6. No religious tests or subscriptions shall be required of the professors, scholars, graduates, students, or officers of the College.

7. The internal regulations of the said College shall be committed to the *Senatus Academicus*, formed by the respective chairs or professorships thereof, subject in all cases to the approval of the Governors.

8. The Legislature shall have power, from time to time, to modify and control the powers conferred by this Act.

9. The Acts heretofore passed in relation to Dalhousie College are hereby repealed, except the Act passed in the fourth year of his late Majesty King George the Fourth, entitled, "An Act authorizing the lending of a sum of money to the Governors of Dalhousie College, and for securing the payment thereof."

This Act was afterwards amended by the following Acts:

*An Act to amend the Act for the Regulation and Support of Dalhousie College.*

*Be it enacted by the Governor, Council, and Assembly, as follows:*

1. The present Board of Governors, consisting of nine persons, shall be increased to a number not exceeding fifteen; and the Board shall be filled up with new nominations made on the same principle as set forth in the first section of the Act hereby amended; and any of the Governors shall be removable, as heretofore by the Governor-in-Council.

2. The Governors shall have power to affiliate to Dalhousie College any other college desirous of such affiliation, or any schools in arts, in theology, in law, or in medicine, and to make statutes for such affiliations, and for the regulation and management thereof, on the same principles as obtain in other Universities, and to vary and amend such statutes from time to time. Provided always, that such statutes of affiliation, before they go into effect, shall be submitted to and receive the sanction of the Governor-in-Council.

3. So much of Chapter 24 of the Acts of 1863, entitled, "An Act for the Regulation and Support of Dalhousie College," or of any other Act as is inconsistent with this Act, is repealed.

*An Act to provide for the Organization of a Law Faculty in connection with Dalhousie College, and for other purposes.*

(Passed the 14th day of April, A.D., 1881).

*Be it enacted by the Governor, Council, and Assembly, as follows:*

1. The Governors of Dalhousie College, at Halifax, shall in addition to the powers conferred on them by Section 2 of Chapter

27 of the Acts of 1875, entitled, "An Act to amend the Act for the Regulation and Support of Dalhousie College," have power to organize a Faculty of Law in connection with such College, and to appoint professors or lecturers in law, and out of the revenues of the College to provide for the maintenance and support of such Faculty, and to make rules for the regulation and management of such Faculty, and for the granting of degrees in law on the same principles as obtain in other Universities, and to vary and amend such rules from time to time.

2. Section 3 of Chapter 24 of the Acts of 1863, entitled "An Act for the regulation and support of Dalhousie College," is amended by adding the words "and governor" after the word "professor" in the said section, and any individual who has hitherto endowed a chair or chairs in the College shall have a right to nominate a governor for each chair endowed, in the same way as if section 3 aforesaid had been originally passed as now amended.

3. Section 1 of the said Chapter 27 of the Acts of 1877, is amended by adding the words "provided, however, that, in the event of any body of Christians, individual, or number of individuals, endowing and supporting one or more chairs or professorships in the said College, as provided by sections 2 and 3 of the Act hereby amended, and of such body of Christians or individuals nominating a professor or governor by virtue thereof, the number of governors may be increased beyond fifteen, but such increase shall be limited to the number of such chairs or professorships as may after the passing of this Act be founded by virtue of said sections 2 and 3."

In pursuance of the Act of 1863, the Presbyterian Church in the Lower Provinces closed their College, and agreed to support two chairs in this University; the Synod of the Maritime Provinces in connection with the Church of Scotland founded one chair; and the College opened in that year, under the principalship of Rev. James Ross, D.D., and with an Arts Faculty of six Professors. On the death of Principal Ross in 1885, and Professor Lyall in 1890, the Presbyterian Church withdrew the two professorships they had previously supported.

In 1868, a Faculty of Medicine was organized, which, in 1875, developed into the Halifax Medical College. In 1885 the Faculty was re-organized.

In 1883, the Faculty of Law, and, in 1891, the Faculty of Pure and Applied Science, were added.

In 1879, the late GEORGE MUNRO, of New York, a native of this Province, placed in the hands of the Governors the funds necessary for the endowment of a Professorship of Physics. In 1881 he established a Professorship of History and Political Economy. In 1882, he founded a chair of English Language and Literature. In 1883 he added to the staff of the College a Professor of Constitutional and International Law. In 1884 he founded a Professorship of Philosophy. From 1880 to 1894 he provided the University with Exhibitions and Bursaries to the amount of \$83,148.69, which, according to his own desire, were so offered for competition as to stimulate to greater activity and efficiency the High Schools and Academies of Nova Scotia and the neighbouring provinces.

The Governors desire to place on permanent record their high sense of Mr. Munro's enlightened public spirit, and their gratitude to him for the munificent manner in which he came to their help in the work of building up an unsectarian University in Nova Scotia.

To connect the donor's name for all time with the benefits thus conferred both on the University and on his native country, the chairs which he founded shall be called the **GEORGE MUNRO CHAIRS OF PHYSICS, OF HISTORY AND POLITICAL ECONOMY, OF ENGLISH LITERATURE, OF CONSTITUTIONAL AND INTERNATIONAL LAW, and of PHILOSOPHY,** respectively.

IN 1882, ALEXANDER MCLEOD, ESQ., of Halifax, bequeathed to the University the residue of his estate. The following is an extract from his will:

"All the residue of my estate I give and bequeath to the Governors of Dalhousie College or University in the City of Halifax in trust, that the same shall be invested and form a fund to be called the McLeod University Fund, and the interest and income of which shall be applied to the endowment of three or more professorial chairs in said College as they may deem proper; but this bequest is made on these conditions, namely, that if at any time the said College or University shall cease to exist, or be closed for two years, or be made a sectarian College, then and in any such case, the said fund and all accumulations thereof shall go to the said Synod of the Maritime Provinces of the Presbyterian Church in Canada, to be used for the purposes of higher education in connection with said Synod, and it is further stipulated that no part of this fund shall ever be used, either by said Governors of Dalhousie College or by the said Synod, as a collateral security under any circumstances whatever."

According to the provisions of the will, the **MCLEOD CHAIRS OF CLASSICS, CHEMISTRY, and MODERN LANGUAGES** were founded.

IN 1886, the late **SIR WILLIAM YOUNG**, one of the oldest and best friends of the College, subscribed \$20,000 to start a Building Fund. In 1887, Sir William bequeathed to the University half the residue of his estate, together with a Prize Fund of \$4,000, and the amount remaining unpaid of his subscription to the Building Fund. The following are extracts from his will:

"I bequeath to the Governors of Dalhousie College at Halifax the sum of \$4,000 to be kept continually invested by them, and that they shall apply the income derived therefrom in founding and maintaining a prize of a gold medal to the value of \$50, to be called Sir William Young's medal, and to be annually awarded for scholastic eminence, and to have the recipient's name engraved thereon, with the year of his attendance at College, and in founding and maintaining such other prizes for distribution among the students of said College as the Governors may from time to time approve.

"Having agreed and promised to the Governors of Dalhousie College to pay them the sum of \$20,000 to aid in the erection of their building now in progress, I direct my executors to pay the said sum from time to time as it may be required by the said Governors.

"All the rest and residue of my estate I direct my executors to divide into two even and equal parts or shares, and to pay

over one such part or share to \* \* \*, and the other part or share to the Governors of Dalhousie College at Halifax for the general purposes of said College.

"In the event of my having paid to Dalhousie College during my life-time any part of said sum of \$20,000 hereinbefore mentioned, as agreed to be paid to them to aid in the erection of the College buildings, I do direct my executors to pay to said Governors the balance only, if any, that may be due on said sum at the time of my decease."

On April 27th, 1887, the corner-stone of the new building was laid by Sir William Young.

In 1887, by the will of the late J. F. AVERY, M.D., of Halifax, the following bequest was made to the College:

"I give and bequeath the sum of \$500 to Dalhousie College in the City of Halifax, to be at the disposal of the Senatus of the said College, and the interest thereof to be appropriated for an annual prize."

IN 1887, by the will of the late MRS. HARRIET ELIZABETH MACKENZIE, or MORRISON, of Stornoway, Scotland, formerly of Pictou, N.S., the following bequest was made to the College:

"To Dalhousie College, £1,000 for founding a bursary for students attending said College, subject to such conditions and regulations as the governing body of said College may appoint, but with this proviso that said bursary shall be called the 'MacKenzie Bursary,' and that students of the name of MacKenzie, Maclean, and Fraser, shall have a preference in the selection of beneficiaries therefor."

IN 1890, by the will of the late JOHN P. MOTT, ESQ., of Halifax, the following bequest was made to the College:

"I give and bequeath to the Board of Governors of Dalhousie College, or to such individuals or organization in whom or in which the control of such College shall be legally vested, the sum of ten thousand dollars, to be legally invested by the said Governors, individuals or organization, and the proceeds applied for the benefit of such College so long as it shall remain and continue to be a non-sectarian institution as at present."

IN 1901, the College received the following bequest from the late PROFESSOR MACDONALD, M.A.:

"To Dalhousie College Library Fund, two thousand dollars for the purchase of books chiefly in English literature; the annual interest of this sum only to be employed or used."

#### MEMORIAL GIFTS

Gift of the MISSES MOTT in memory of their sister MISS BESSIE MOTT .....	\$1,000
Gift of the MISSES CARMICHAEL in memory of their father HON J. W. CARMICHAEL .....	1,000

## SUBSCRIPTIONS.

The following amounts have been from time to time subscribed in aid of the College :

## FIVE YEAR'S FUND, 1870-75.

Rev. G. M. Grant.....	\$ 200	John S. Maclean.....	\$ 100
John Doull.....	200	James Thompson.....	100
W. J. Stairs.....	200	R. Morrow.....	100
Sandford Fleming.....	200	J. Stairs.....	100
Sir Wm Young.....	160	Hon. J. Northup.....	100
Medical Faculty.....	160	B. H. Collins.....	100
Robert Boak.....	160	Alex. McLeod.....	100
Dr. Avery.....	150	J. Donaldson.....	100
Adam Burns.....	125	A. K. Mackinlay.....	150
Sir Charles Tupper.....	100	T. A. Ritchie.....	150
Principal Ross.....	100	E. Smith.....	100
Prof. Lawson.....	100	R. H. Skimmings.....	100
Prof. Johnson.....	100	Smaller sums.....	2379
Prof. DeMille.....	100		
Prof. Liechti.....	100	Total.....	\$5734

## ENDOWMENT FUND, 1879.

Sir William Young.....	\$ 1000	Adam Burns.....	\$ 500
W. J. Stairs.....	1000	Peter Jack.....	500
Hon. Stayley Brown.....	1000	Hon. J. Northup.....	500
John Gibson.....	1000	Prof. Lawson.....	500
John P. Mott.....	1000	Alex. McLeod.....	500
William P. West.....	1000		
Thomas A Ritchie.....	1000	Total.....	\$10,500
Hon. Robert Boak.....	1000		

## CURRENT EXPENSES, 1882-86.

Sir William Young.....	\$ 400	Geo. Thomson.....	\$ 100
John Doull.....	200	James Scott.....	100
J. S. Maclean.....	200	A. K. Mackinlay.....	80
Thos. Bayne.....	200	Dr Avery.....	50
J. Gibson.....	200	J. J. Bremner.....	40
Rev. J. McMillan.....	200	Smaller sums.....	60
John Macnab.....	200		
President Forrest.....	150	Total.....	\$2330
A. G. Jones.....	150		

## BUILDING FUND, 1886.

Rev. L. H. Jordan.....	\$ 1000	Mr. Justice Graham.....	\$ 200
John Doull.....	750	James Scott.....	150
J. S. Maclean.....	750	R. B. Seaton.....	150
R. Sedgewick.....	750	Rev. J. McMillan.....	150
Thos. Bayne.....	500	William Robertson.....	150
John McNab.....	500	J. C. Mackintosh.....	150
Adam Burns.....	500	H. McD. Henry.....	150
Hon. R. Boak.....	500	J. Y. Payzant.....	150
Dr. Avery.....	500	Pearson, Morrison & Forbes.....	150
President Forrest.....	375	J. J. Stewart.....	120
James Forrest.....	300	Rev. E. Scott.....	100
Professor Johnson.....	250	Peter Ross.....	100
Peter Jack.....	250	H. W. C. Boak.....	100
William Miller.....	250	Pictou Academy.....	100
Professor Macdonald.....	250	Smaller sums.....	640
Professor MacGregor.....	225		
A. & W. Mackinlay.....	225	Total.....	\$10635
Professor Alexander.....	200		

## ENDOWMENT FUND, 1892.

T. E. Fraser.....	\$ 600	C. H. Cahan.....	\$ 200
J. W. Carmichael.....	500	J. F. McLean.....	150
Prof. Lawson.....	500	I. Longworth.....	100
Prof. Macdonald.....	500	R. J. Turner.....	100
Prof. Weldon.....	500	Geo. Campbell.....	100
J. D. MacGregor.....	400	Mrs. J. R. Dickie.....	100
D. C. Fraser.....	250	J. C. Mahon.....	100
J. M. Carmichael.....	250	H. T. Sutherland.....	100
G. Forrest McKay.....	250	Hon. T. McKay.....	100
Prof. H. Murray.....	250	Smaller sums.....	1665
Sinclair & Patterson.....	240		
H. Mackenzie.....	200	Total.....	\$7155

## FIVE YEAR FUND—CURRENT EXPENSES, 1892-97.

John Doull .....	\$ 2500	Rev. John McMillan .....	\$250
Adam Burns .....	2500	J. C. Mackintosh .....	250
W. J. Stairs .....	1250	J. A. Turnbull .....	200
Hon. R. Boak .....	1250	Dr. A. H. McKay .....	240
Donald Keith .....	1000	Prof. Liechti .....	200
W. B. Ross .....	800	Dr G. M. Campbell .....	150
President Forrest .....	750	W. Dennis .....	125
Prof. Johnson .....	500	H. W. Barnes .....	125
Prof. Russell .....	500	W. J. McDonald .....	125
T. Ritchie .....	500	James Thomson .....	100
Farquhar & Forrest .....	500	J. McG. Stewart .....	100
Prof. W. Murray .....	500	J. H. McKenzie .....	100
Class of 1893 .....	500	A. K. McLean .....	100
Prof. MacGregor .....	400	W. D. Cameron .....	100
Drysdale & McInnis .....	300	Smaller sums .....	1420
Dr. D. A. Campbell .....	300		
Dr. D. A. Murray .....	300	Total .....	\$18145
R. L. Borden .....	250		

DONATIONS TO UNIVERSITY LIBRARY.  
1867.

The Lieutenant-Governor .....	\$ 400	W. A. Henry .....	\$ 100
John Tobin, M. P. P. .....	200	J. Stairs .....	100
Dr. Tupper .....	100	Neil, White & Co. ....	50
James Thomson .....	100	G. P. Mitchell .....	50
Rev. G. M. Grant .....	100	Smaller sums .....	375
Dr. Avery .....	100		
J. A. Sinclair .....	100	Total .....	\$1775

## SINCE 1892.

Alumni Association .....	\$ 756 75	Class of 1891 .....	\$ 40 00
Prof. MacMechan (course of Lectures) .....	573 00	" 1895 .....	50 00
Prof. Seth (course of Lectures) .....	245 00	" 1896 .....	210 00
The Misses Mott .....	300 00	" 1897 .....	53 00
Faculty of Arts .....	220 00	" 1898 .....	65 09
A. D. Gunn, B. L. ....	100 00	" 1899 .....	256 69
Adam Burns .....	75 00	" 1900 .....	123 70
English Class .....	60 44	" 1901 .....	125 84
Alex McKay .....	50 00	" 1902 .....	107 00
Prof. W. Murray .....	50 00	" 1903 .....	107 00
H. McInnes .....	40 00	" 1904 .....	179 34
Mrs. C. Archibald .....	24 00		
Medical Faculty .....	22 70		\$1317 54
R. H. Graham .....	20 00		
Smaller amounts .....	36 00		
Total .....	\$2572 89		

## LAW LIBRARY.

John Y. Payzant .....	\$ 650	Sir William Young .....	\$ 200
Robert Sedgewick .....	600	Robert Boak .....	100
Wallace Graham .....	500	Doull and Boak .....	100
R. C. Weldon .....	500	R. I. Hart .....	100
B. Russell .....	420	J. G. MacGregor .....	100
S. L. Shannon .....	525	J. Norman Ritchie .....	100
C. S. Harrington .....	320	W. J. Stairs .....	100
J. S. D. Thompson .....	300	J. J. Stewart .....	100
Jas. Thomson .....	225	Smaller sums .....	1215
Charles J. Townshend .....	225		
H. McD. Henry .....	225	Total .....	\$6605

## SCHOOL OF MINES.

## 1902-3.

J. F. Stairs .....	\$ 5000	H. G. Bauld .....	\$ 1000
Hon. D. MacKeen .....	2500	Alfred Putnam .....	1000
Hon. W. J. Stairs .....	2500	Forrest McKay .....	1000
Harvey Graham .....	2500	Raymond Dand .....	1000
T. Ritchie .....	2000	Daughters of late Hon. J. W. Carmichael .....	1000
G. S. Campbell .....	2000	George Stairs .....	1000
T. Cantley .....	1500	Bequest of Miss E. J. Mott .....	1000
W. T. Allen .....	1000	Mr. and Mrs. H. McInnes .....	1000
W. B. Ross .....	1000	Smaller amounts over .....	23000
J. C. Mackintosh .....	1000		
John MacNab .....	1000		

A complete list will be published later.



## LABORATORIES AND MUSEUM.

1880.

Sir William Young.....	\$ 500	Hon. J. Northup.....	\$ 106
Prof. MacGregor.....	200	W. J. Stairs.....	100
Dr. Avery.....	100	W. P. West.....	100
Thos. Bayne.....	100	Smaller sums.....	1195
Hon. R. Boak.....	100		
Alex. McLeod.....	100	Total.....	\$2695
John Macnab.....	100		

1883.

Dr. Wm. McCulloch for maintenance of McCulloch Collection..\$1400.

SINCE 1881.

Alumni Association.....	\$1469 83	Prof. E Mackay.....	\$ 742 54
Dr. A. H. McKay.....	1180 00	Medical Faculty.....	137 30
		Total.....	\$3529 67

## GYMNASIUM FUND, 1881.

F. B. Chambers.....	\$ 50 00
Smaller sums.....	164 00
Total.....	\$214 00

## MCDONALD MEMORIAL, 1902-04.

Subscribed to May 10, 1904. \$23,761 00 | Paid in ..... \$7,390 00

# Dalhousie College & University.

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HECTOR MCINNES, LL. B., *Treasurer.*  
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Engineer, *Lecturer on Civil Engineering.*
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Inspector of Mines, *Special Lecturer on Mining.*
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- C. E. DODWELL, B. A. (Vind.), M. I. C. E., M. C. S. C. E., Resident Engineer  
Public Works of Canada, *Lecturer on Hydraulic Engineering.*
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- F. H. TORRINGTON, Mus. D., *Examiner in Theory of Music.*
- ROBERT LAING, M. A. (McGill), *Examiner in History of Music.*

**Faculty of Law.**

- RICHARD CHAPMAN WELDON, M. A., Ph. D. (Yale), D. C. L. (Mt. All.), K. C., *George Munro Professor of Constitutional and International Law, and Lecturer on Crimes and Shipping.*
- BENJAMIN RUSSELL, M. A., D. C. L. (Mt. All.), K. C., M. P., *Professor of Contracts, and Lecturer on Bills and Notes, Sales and Equity.*
- HECTOR MCINNES, LL. B. (Dal.), *Lecturer on Procedure.*
- WILLIAM B. WALLACE, LL. B., Judge of the County Court, *Lecturer on Crimes.*
- HARRY A. LOVETT, LL. B. (Dal.), *Lecturer on Evidence, Partnership, Agency and Companies.*
- JOSEPH A. CHISHOLM, B. A. (St. F. X.), LL. B. (Dal.), *Lecturer on Real Property.*

**Faculty of Medicine.**

- GEORGE L. SINCLAIR, M. D. (Coll. Phys. Surg. N. Y.), M. B. (Univ. Hal.) *Examiner in Medicine.*
- D. A. CAMPBELL, M. D., C. M., (Dal.), *Examiner in Medicine, and Clinical Medicine.*
- A. W. H. LINDSAY, B. A., (Dal.), M. D., C. M., (Dal.), M. B., C. M. (Edin.), *Examiner in Anatomy.*
- HON. D. MCN PARKER, M. D., (Edin.), L. R. C. S., (Edin.), *Examiner in Medicine.*
- ANDREW J. COWIE, M. D., (Univ. Penn.), L. R. C. P., (Lond.), *Examiner in Obstetrics and Diseases of Women and Children.*
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- ALEXANDER P. REID, M. D., C. M., (McGill), L. R. C. S., (Edin.), L. C. P., and S. (Can.), *Examiner in Medical Jurisprudence and Hygiene.*
- M. A. CURRY, B. A., (Vind.), M. D., (Univ. N. Y.), *Examiner in Obstetrics and Diseases of Women and Children.*
- MURRAY McLAREN, B. A., (Univ. N. B.), M. R. C. S., (Eng.), M. D., (Edin.) *Examiner in Physiology and Histology.*
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- E. MACKAY, B. A., (Dal.), Ph. D., (J. H. U.), *McLeod Professor of Chemistry.*
- W. H. HATTIE, M. D., C. M., (McGill), *Examiner in Pathology and Bacteriology.*
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- N. E. MACKAY, M. D., C. M., (Hal. Med. Coll.), M. B., (Univ. Hal.), M. R. C. S. (Eng.), *Examiner in Surgery.*
- STEPHEN M. DIXON, M. A. (Dub.), *Professor of Physics.*
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- MURDOCH CHISHOLM, M. D., C. M., (McGill), L. R. C. P., (Lond.), *Examiner in Clinical Surgery.*
- NORMAN F. CUNNINGHAM, M. D., (Bell. Hosp. Med. Coll.), *Examiner in Clinical Medicine.*
- JOHN W. MACKAY, M. D. (Bell. Hosp. Med. Coll.), *Examiner in Surgery.*

*Dean of the College :* PROFESSOR HOWARD MURRAY.

*Librarian :* PROFESSOR DANIEL A. MURRAY.

*Curator of the Museum :* PROFESSOR J. E. WOODMAN.

*Instructor in Gymnastics :* SERGT.-MAJOR LONG.

*Janitor :* ALEXANDER ANDERSON.

# Constitution.

**The Board of Governors** is the supreme governing body of Dalhousie College and University. Appointments to it are made by the Governor-in-Council on the nomination of the Board. The Governors have the management of the funds and property of the College; the power of appointing the President, Professors, and other officials, and of determining their duties and salaries; and the general oversight of the work of the University.

**The Senate** consists of the President and Professors. To this body are intrusted, by statute, the internal regulations of the University, subject to the approval of the Governors. All degrees are conferred by the Senate.

**The Faculties of Arts, Science, Law and Medicine**, are committees of the Senate to which are intrusted, subject to the approval of the Senate, the supervision of the teaching of the University, the preparation of regulations governing the courses of study, and the recommendation of suitable candidates for prizes, scholarships, diplomas and degrees.

## UNIVERSITY REGULATIONS.

**§ I.—Admission of Students.**—Persons of either sex of good moral character may become students of the University by entering their names in the Register, annually, and paying the annual Registration Fee.

Registered students may, on presentation of their Registration Tickets, and on payment of the proper fees, enter any of the classes of the University, with the consent of the Faculty in which they intend to study.

Students who are candidates for degrees are known as Undergraduates. Candidates for the higher degrees in attendance on classes are known as Graduate students. All others are known as General students.

**§ II.—Residence.**—All students are required to report their places of residence to the President on or before the day appointed in the University Almanac (October 14th).

All students not residing with relatives or friends are required to reside in approved lodging houses.

Persons who wish to take students as boarders, must furnish the President with satisfactory references. A Register is kept by the President, containing the names of those persons who have met this requirement; and, for the convenience of students, a list of the names and addresses of such persons will be posted on the notice-board in the College hall at the beginning of the session.

Women students in any Faculty are admitted, on certain conditions, as boarders, to the Halifax Ladies' College.

§ III — **Church Attendance** — All students not residing with parents or guardians, are required to report to the President on or before the day appointed in the University Almanac (October 14th), the churches which they intend to make their places of worship during the Session. Intimation will be made to the various clergymen of the city of the names and addresses of the students who have chosen their respective places of worship.

§ IV. — **Discipline.** — The Senate may use all means deemed necessary for maintaining discipline. It is the duty of the Dean of the College to see that order is maintained within the College halls.

§ V. — **Degrees.** — The Senate confers the degrees of Bachelor and Master of Arts, Bachelor and Master of Science, Bachelor of Engineering, Bachelor of Music, Bachelor of Laws, and Doctor of Medicine and Master of Surgery. A candidate for any degree must have conformed to the regulations of the Faculty in which he has been studying, and must be recommended by that Faculty for the degree.

The degree of Doctor of Laws (LL.D.), may be conferred *honoris causa tantum* in recognition of eminent literary, scientific, or professional services.

By special permission of the Senate, degrees may be conferred upon candidates *in absentia*.

§ VI. — **Admission ad Eundem Gradum.** — Graduates of Universities approved by the Senate, who have received their degree in course, may be admitted *ad eundem gradum* in this University, on producing satisfactory proof of character and academic standing, and on payment of the required fee.

§ VII. — **Academic Costume.** — Undergraduates and general students attending more than one class are entitled to wear caps and gowns, and to wear the gowns at lectures and all meetings of the University. The forms prescribed are the Oxford undergraduate gown of black stuff with sleeves; and the black trencher with tassel.

Graduates of this University shall be entitled to wear gowns of black stuff, and hoods. The distinctive part of the costume is the hood. The following are the kinds of hoods appointed for the various degrees:—

B. A. — Black stuff lined with white silk and bordered with white fur.

M. A. — Black stuff lined with crimson silk.

B. Sc. — Black stuff lined with white silk and bordered with scarlet silk.

M. Sc. — Black stuff lined with scarlet silk.

B. E. — Black stuff lined with white silk and bordered with dark green silk.

B. Mus — Black stuff lined with white silk and bordered with lavender silk.

LL. B. — Black stuff lined with white silk and bordered with gold coloured silk.

M. D. — Black stuff lined with scarlet silk and bordered with white silk.

LL D. — Black silk lined with purple silk.

Doctors of Laws shall be entitled to wear gowns of black silk.

Successful candidates for these degrees shall be required to appear at Convocation in the proper academic costume, to have the degrees conferred upon them.

**§ VIII.—Libraries.**—The Senate intrusts the management of the University Library to one of their number, who is called the Librarian and with whom is associated an Advisory Committee of two.

Registered students are entitled to the use of the University Library. A deposit of two dollars is required of students who wish to borrow books from the Library for use during the vacation.

The Law Library is intended for the exclusive use of the members and students of the Faculty of Law.

**§ IX.—Museum.**—The Senate intrusts the custody of the collections in the Museum to one of their number, who is called the Curator. Students in science, when under the supervision of an instructor, are entitled to the use of the Museum.

**§ X.—Gymnasium.**—A Committee of six, three of whom are appointed by the Senate and three by the Dalhousie Amateur Athletic Club, have charge of the Gymnasium. All registered male students who have paid the gymnasium fee are entitled to the use of the gymnasium and to the services of the Instructor in Gymnastics.

# Faculty of Arts.

THE PRESIDENT.

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*Secretary to the Faculty.*—PROFESSOR MACMECHAN.

*Registrar to the Faculty.*—PROFESSOR LIECHTI.

Correspondence should be addressed :

*"The Secretary, Faculty of Arts,*

*Dalhousie College, Halifax, N. S."*

§ XI.—**The Academic Year.**—The Academic year consists of one Session. The Session of 1904 will begin on Tuesday, 6th September, 1904, and end on Tuesday, 25th April, 1905.

§ XII.—**Degree of Bachelor of Arts.**—(1.) Candidates for this degree must attend with regularity the classes of their courses of study as prescribed in § xv, perform the exercises required and appear at the examinations held in connection with such classes, and secure a position on the Pass Lists in all subjects. The course of study extends over at least four years, but, in the case of students who enter at advanced stages, it may be completed in a shorter time.

(2.) Persons may become candidates for degrees by passing the Junior or Senior Matriculation Examination, (§§ xiii, xiv). Those who pass the Senior Matriculation examination are exempted from attending the classes recommended in § xv to be taken in the first year of attendance, and may complete their course in three years. In general,



the Matriculation examination is to be passed by a student before he enters upon a course of study leading to a degree. For subjects of examinations, examinations recognized as equivalent, &c., see §§ xiii, xiv.

(3.) General students who have attended some of the classes in the course of study and passed the examination in them, may become candidates for a Degree by passing one of the Matriculation examinations, in which case the classes previously attended will be recognized as qualifying for a Degree. But in those subjects of the Matriculation examination in which they have previously attended classes, such students will be expected to show a higher proficiency than if they had passed the examination at the beginning of their course.

(4.) Undergraduates of other Universities may, on producing satisfactory certificates, be admitted *ad eundem statum* in this University, if they are found qualified to enter the classes proper to their years. But if their previous courses of study have not corresponded to the courses on which they enter in this college, they may be required by the Faculty to take additional classes.

## ENTRANCE REQUIREMENTS.

§ XIII.—**Junior Matriculation Examination.**—(1). The following are the subjects of this examination :

1-2 Two of the following languages, one of which must be Latin or Greek, must be selected : Latin, Greek, French, German. Candidates who are to take Greek as one of the subjects of the First Year, must pass in Greek.

LATIN.—Translation : (a) Passages for translation from prescribed books with questions arising out of those books. (For 1904) Cæsar : *Gallie War*, Books II and III ; and Vergil : *Æneid*, Book I. (For 1905) Cæsar : *Gallie War*, Book V ; and Vergil : *Æneid*, Book I (b) Short and easy passages for translation at sight from books not prescribed. *Composition* : Such a knowledge as may be gained from Collar and Daniel's First Latin Book, and the first eighteen exercises of Bradley's Arnold's Latin Prose Composition. *Grammar* : As in Bennett's Latin Grammar, or Allen and Greenough's.

NOTE.—The Roman pronunciation of Latin as given in all the modern grammars, is the one used in the class-room. It is strongly recommended that special attention be given to the reading of the Latin aloud with correct accent, with fluency, and with proper expression. This recommendation applies also in the case of Greek,

words being accented according to the written Greek accent, and diphthongs pronounced as follows :

<i>ai</i> as in <i>aisle</i> ,	<i>av</i> as <i>ou</i> in <i>our</i> ,
<i>ei</i> as in <i>height</i> ,	<i>ev</i> as in <i>feud</i> ,
<i>oi</i> as in <i>oil</i> ,	<i>ov</i> as in <i>group</i> ,
<i>ui</i> as in <i>quit</i> ,	<i>uv</i> as in <i>eh-oo</i> rapidly pronounced.

GREEK.—Translation : (a) Passages for translation from prescribed books with questions arising out of those books (For 1904), Xenophon, *Anabasis*, Book II. (For 1905), Xenophon, *Anabasis*, Book III. (b) Short and easy passages for translation at sight from books not prescribed. *Composition* : Such a knowledge as may be gained from White's First Greek Book, and the first fifteen exercises of Fletcher and Nicholson's Greek Prose Composition. *Grammar* : As in Elementary Grammars.

FRENCH—Voltaire : *Charles XII*, Books I, II, III. Grammar questions limited to the Accidence, and based on the passages selected for translation.

GERMAN—Buchheim, *German Reader*, Part I, (Clarendon Press), or Hauff, *Das Wirthshaus im Spessart* (Macmillan & Co.), omitting the five tales interwoven in the original story. Grammar questions limited to the Accidence, and based on the passages selected for translation.

3.—ENGLISH—*English* : Grammar, Analysis, Parsing. *Composition* : An essay on one of several set subjects to be drawn from : —Macaulay, *Warren Hastings* ; Shakspeare, *Merchant of Venice* ; Longfellow, *Evangeline* ; Scott, *The Lady of the Lake*.

Questions on the interpretation of a passage not specified : to test general intelligence.

NOTE.—The essential part of this examination is the essay. Legible writing, correct spelling and punctuation, will be considered indispensable. Skill shown in sentence and paragraph construction will be awarded high marks. Not more than *one* of the works named need be read. It should be read primarily for the story, and need not be studied minutely, as a choice is allowed among at least four themes drawn from the works named.

4.—HISTORY AND GEOGRAPHY.—Outlines of English and Canadian History and General Geography.

5.—ARITHMETIC AND ALGEBRA.—*Arithmetic*, *Algebra* : As in Hall & Knight's *Elementary Algebra*, or Todhunter and Loney's *Algebra for Beginners*, or Wentworth's *Algebra*.

6.—GEOMETRY.—Euclid, Books, I, II, III, IV. Definitions of Book V. and Book VI., first 19 propositions, or their equivalents.

Candidates who pass in three or more subjects, but fail to pass the examination as a whole, will be exempted from such subjects, should they appear as candidates on any subsequent occasion.

Candidates reaching a certain standard will be declared to have passed with Distinction, and will be eligible for the Sir William Young and Professors' Scholarships, and the Mackenzie Bursary. (§ xxi).

(2.) Candidates who hold the following Diplomas, Licenses or Certificates, shall be exempted from the above examination in subjects which were included in the examinations by which such Diplomas, Licenses or Certificates were obtained, and in which a sufficiently high standard was reached :—

- a) Teachers' Licenses of Grades A or B of Nova Scotia.
- b) High School Leaving Certificates of Grades XII or XI of Nova Scotia.
- c) Honour Diplomas, or First Class Certificates, as issued by the Prince of Wales College, P. E. I.
- d) First Class Teachers' Licenses of Prince Edward Island.
- e) Grammar School or Superior (except in the subject of Latin), or First Class Licenses of New Brunswick.

Candidates who hold Teachers' Licenses or Leaving Examination Certificates issued by the Education Office of other Provinces, may be exempted from the whole or from parts of the above examination on application to the Faculty.

Persons who, as candidates for the above Licenses or Certificates, succeeded in reaching a sufficiently high standard in the majority of the subjects of the above examination, shall be exempted from examination in such subjects.

(3.) Persons may be admitted as Undergraduates of the First Year, without examination, on presentation of certificates from the Principals of High Schools or Academies, approved for this purpose by the Faculty, stating that they have satisfactorily completed the work prescribed for the Junior Matriculation Examination, and passed satisfactory examinations therein.

(4.) This examination will be held at the College on September 7th—10th, 1904.

#### § XIV.—Senior Matriculation Examination.

—(1.) The following are the subjects of this examination :

1—2. Two of the following, one of which must be Latin or Greek :—Latin, Greek, French, German.

Candidates intending to take Greek as one of the subjects of the Second Year, must pass in Greek.

LATIN.—(For 1904).—Cicero : *Pro Lege Manilia* ; Horace : *Odes*, Books III and IV ; Tacitus : *Histories*, Book I.

(For 1905).—Cicero : *Pro Lege Manilia* and *Pro Archia* ; Vergil : *Æneid*, Books V and VI ; Tacitus : *Annals*, Book IV.

GREEK.—(For 1904).—Plato : *Apology & Crito* ; Demosthenes : *De Corona*, (omitting the documents).

(For 1905).—Plato : *Apology & Crito* ; Æschylus : *Prometheus Vincetus*.

The papers in Latin and Greek will contain passages for translation from the books prescribed, together with grammatical and other questions arising out of those books, and short and easy passages for translation from books not prescribed. General questions in Latin and Greek Grammar will also be set, and some English sentences to be turned into Latin and Greek.

FRENCH.—Macmillan's Progressive French Reader, II Year ; Molière, *Le Bourgeois Gentilhomme* ; Scribe, *Valérie* ; Grammar (Brachet, *Public School Grammar*) ; Composition.

GERMAN.—Hauff, *Wirthshaus im Spessart*, excluding the five tales interwoven in the story (Macmillan & Co.) ; or, Paul Heyse, *Anfang und Ende* (American Book Company) ; Buchheim : German Reader, Part II ; Schiller, *Wilhelm Tell* ; Grammar (Joynes-Meissner) ; Composition.

3. ENGLISH.—*Language* : Grammar, Analysis, Parsing. *Composition* : An essay on one of several set subjects ; to be drawn from :—Macaulay : *Warren Hastings* ; Shakspeare : *Merchant of Venice* ; Longfellow : *Evangeline* ; Scott : *The Lady of the Lake*. (See § xiii, 3. Note).

*Literature*.—Eighteenth Century : *Prose*. Addison : *Papers Contributed to the Spectator*. Johnson, *Life of Pope*. (Macaulay, *Samuel Johnson*). Dryden, *MacFlecknoe*, *St. Cecilia's Day*, *Alexander's Feast*. Pope, *Rape of the Lock*. Gray, *Elegy in a Country Churchyard*. Goldsmith, *Traveller*, *Deserted Village*. Burns, *Two Dogs*, *Cotter's Saturday Night*.

*History and Geography*—Outlines of English and Canadian History and General Geography.

Instead of the works prescribed here in Latin, Greek, French, German and English, candidates for matriculation (but *not* for scholarships) may offer equivalents, provided they have been previously approved by the President.

4 MATHEMATICS.—*Arithmetic*, *Algebra*, *Geometry*, and *Trigonometry*, as specified for the Junior Matriculation Examination and in MATHEMATICS I.

*Algebra* :—Indices, Irrational Quantities, Quantities involving  $\sqrt{-1}$ , Theory of Quadratic Equations, Proportion, Variation, Progressions, Permutations and Combinations, Binomial Theorem, Properties of Logarithms, Interest and Annuities. Horner's Method of approximating to the roots of an equation. Elementary theorems concerning equations, functions, limits, and series. Graphical representation of

functions, and plotting of loci of equations. Elements of Determinants, with applications to elimination and the solution of simultaneous equations. Partial Fractions. Probability.

*Geometry*.—Euclid, Books VI, XI. Propositions on Harmonic Ranges and Pencils, Poles and Polars, and Transversals. Geometry of the Sphere. Elementary propositions in the geometrical treatment of the parabola and the ellipse.

*Trigonometry*.—The solution of plane triangles. Measurement of heights and distances. Elementary angular analysis.

N. B.—The above subjects are prescribed for Candidates for Senior Scholarships. Should such Candidates desire to have subject 5 reckoned for scholarship purposes, they must notify the President to that effect in their application for matriculation. The award will be made according to average of marks.

5. CHEMISTRY, OR BOTANY.—*Chemistry*.—The elements of General Chemistry. Remsen's *Introduction to the Study of Chemistry* (Macmillan & Co.) may be taken to indicate in a general way the extent of knowledge required. Special importance will be attached to an acquaintance with the experimental evidence upon which the more important facts and the fundamental laws of the science are based.

*Botany*.—The elements of General Botany. Bessey's *Essentials of Botany* and Spotton's *High School Botany* may be taken to indicate in a general way the extent of knowledge required and the method to be pursued. The examination will be designed to test the extent to which the candidate's knowledge of the subject is founded upon practical study.

Candidates may take either Chemistry, or Botany as subject 5 of this examination. All candidates for degrees who do not pass in the Chemistry of this examination, are required to take the class in Junior Chemistry as one of the subjects of their course. Should any candidate pass in the Botany of this examination, he shall not be permitted to offer Botany as one of the electives of his course.

(2.) Candidates who have previously passed in one or more of the above subjects, either at the Senior Matriculation Examination or at the Junior Matriculation and First Year Examinations, shall be exempt from further examination therein.

(3.) Candidates who hold the following Licenses, Diplomas or Certificates shall be exempted from the above Examination in subjects, except Chemistry, which were included in the Examinations by which such Licenses, Diplomas or Certificates were obtained, and in which a sufficiently high standard was reached :

- a) Teachers' Licenses of Grade A of Nova Scotia.
- b) High School Certificate of Grade XII of Nova Scotia.
- c) Honour Diplomas, as issued by the Prince of Wales College, P. E. I.
- d) Grammar School Licenses of New Brunswick.

Students who enter the second year by certificate, and are found to be deficient in English Composition, may be required to take the First English as an additional class, without fee.

(4.) Candidates must give at least one fortnight's notice to the President, of their intention to appear at this examination; and, in giving such notice, they must state in what Latin, Greek, French, German, and English books they intend to offer themselves for examination, and in what subjects they claim exemption from examination.

(5.) This examination will be held at the College, on September 7th—12th, 1904.

### COURSE FOR B. A.

§ XV. — **Ordinary Course of Study for Degree of B. A.**—(1.) The B. A. course consists of the following classes:

- a) Three in either Latin or Greek.
- b) Two in English.
- c) Two in one of the following:—The classical language not selected to be studied for three years, German, French.
- d) One in each of the following:—History, Philosophy, Mathematics, Physics, Chemistry.
- e) Eight single classes (or an equivalent), to be selected, subject to the approval of the Faculty, from the lists given below [§ xv (8),] a single class being one in which two or three lectures per week are given, a double class, one in which the number is four or five, and one double class being regarded as equivalent to two single classes when a double fee has been paid. An advanced class may in the third or fourth year be taken as an elective, if approved by the Faculty.

(2.) The classes not specified above, which are selected by students as part of their course, must be submitted to the President for approval at a date not later than Oct. 1, 1904.

(3.) Undergraduates in taking French or German for the first time, enter the classes for which the Professor considers them fitted. In other subjects, they enter the first or elementary classes.

(4.) The first class in Latin, Greek, French and German is not recognized as a part of the course for a degree unless the second class is subsequently taken.

(5.) No class in which the subjects studied are the same from year to year, can be taken twice as part of a course.

(6.) A sufficient number of the more purely literary, philosophical, or scientific subjects of theological, legal, and medical courses respectively, are included among the elective subjects, to enable the student during his course to complete part of one or other of these professional courses. Students taking Constitutional History, Constitutional Law and Contracts, and passing therein, during their Arts Course, are allowed to complete their Law Course in this College subsequently, in two years.—Students who have registered as undergraduates in Medicine, may complete their course in Medicine in three years after the completion of their Arts Course by taking Chemistry 1, Physics 1, and Biology, as part of their Arts course, and by taking Junior Anatomy as an additional subject. They are recommended to attend the class in Histology, to avoid conflict of hours in the time-table. (See Faculty of Medicine).

(7.) The classes in the above courses may be taken in any order subject to the provisions:—(1) that in any one subject classes are to be taken in the order of their advancement; (2) that Mathematics 1 is to be taken before Physics 1; and (3) that Physics 1 is to be taken before Physics 7, and Chemistry 1 before Geology 1, or Mineralogy 1.

(8.) In the following statement, the classes are arranged in years, to show the order in which it will generally be found most convenient to take them. The time table of lectures and the dates of examinations are based upon this arrangement.

The details of the subjects studied in these classes will be found under Courses of Instruction.

#### First Year.

1. Latin or Greek.
2. The classical language not selected as subject 1; or French, or German.
3. English.
4. Mathematics.
5. Chemistry.

N. B.—Undergraduates who intend in their Third Year to enter the Special Course in Mathematics and Physics, or Chemistry and Chemical Physics, (§ xvi, 12 and 13), are recommended to take German as subject 2, and to give special attention to Mathematics and Chemistry.

Undergraduates who intend to enter other special courses, are recommended to take German as an additional class.

**Second Year.**

1. The language selected as subject 1 in the First Year.
2. The language selected as subject 2 in the First Year.
3. English.
- 4—5. Any two of the following :—Mathematics, Chemistry, Physics, Philosophy, Geology, a language not selected as subject 1 or 2.

If the classes in Physics and Philosophy are not taken in this year, they must be taken in a subsequent year.

**Third and Fourth Years.**

1. Latin or Greek or N. T. Greek. The language selected must have been taken during the First and Second Years.

2. History.

3—10. Eight classes selected from the subjects in the following groups, so that not more than five, and not less than one, are taken from any one group. An undergraduate who has attended the classes in Mathematics and Chemistry in the First Year, may, if he wish, be excused from taking a class from group C. :—

A	B	C
Latin,	History,	Mathematics
Greek,	Constitutional History,	Astronomy,
Hebrew,	Political Economy,	Physics,
French,	Philosophy,	Chemistry,
German,	Education,	Geology,
English,		Mineralogy,
Biblical Literature,		Biology.

An undergraduate looking forward to the profession of Divinity, Law or Medicine, may offer for three of the electives, groups D. or E. or F. respectively, and select the remaining five electives from groups A., B. and C., subject to the conditions stated above.

D	E	F
Hebrew,	Constitutional History,	Biology,
N. T. Greek,	Constitutional Law,	Histology,
Biblical Literature,	Contracts,	Physiology.



## B. A. WITH HONOURS.

### § XVI.—Special Courses For Degrees.—

(1.) An undergraduate shall be allowed, after completing the work recommended in § xv for the first two years of his course, to restrict his attention to a more limited range of subjects than that of the ordinary course, by entering upon one of the Special Courses, provided he has either attained both a First Class standing at the previous Examination in the subject corresponding to that of the Special Course selected, and a satisfactory standing in the other subjects, or has received the special permission of the Faculty.

(2.) Special Courses are provided in the following departments, viz., (A) Classics, (B) Latin and English, (C) Greek and English, (D) English and German, (E) English and English History, (F) Philosophy, (G) Pure and Applied Mathematics, (H) Mathematics and Physics, (I) Chemistry and Chemical Physics, (J) Geology.

(3.) An undergraduate taking a special course in any of the above departments shall be required to attend the Advanced Classes provided in the subjects of such departments, to make progress satisfactory to the Professors who conduct such classes, and to pass the examinations in the subjects of such department. He shall be allowed to omit, from the subjects of the ordinary course, certain subjects specified below, and may select as his ordinary classes in any year, any of the classes of that year, subject to the following regulations and to the approval of the Faculty.

(4.) The examinations in the subjects of Special Courses shall be held at the end of the Fourth Year.

(5.) Undergraduates taking the Special Course in **Classics** (A) may, in each of the Third and Fourth Years omit any two of the subjects of those years, except Latin and Greek.

They shall be examined in the following subjects :—

#### LATIN.

I. Candidates will be required to have a critical knowledge of the following works, in addition to those prescribed in the ordinary course :—

Plautus : *Miles Gloriosus*.

Terence : *Adelphi*.

Vergil : *Georgics*, Books, I, IV.

Horace : *Epistles*, Books, I, II ; *Ars Poetica*.

Juvenal : *Satires*, Books, VII, VIII, XIV.

Cicero : *De Oratore*, Books, I, II, III.

Livy : Book XXI, XXII.

Tacitus : *Agricola* : *Annals*, Book II.

II. Candidates will be required to show a general knowledge of one prose and one verse subject, to be chosen by them from the following list :—

Plautus : *Aulularia* and *Captivi*.

Terence : *Andria* and *Heautontimorumenos*.

Cicero : Select Letters, (Muirhead's edit., Longmans, London).

Tacitus : *History*, Books III, IV, V.

III. COMPOSITION.—Prose.

IV. LITERATURE—Cruftwell's *History of Roman Literature*, selected chapters.

V.—PHILOLOGY.—Victor Henry's *Comparative Grammar of Greek and Latin*.

#### GREEK.

I. Candidates will be required to have a critical knowledge of the following works, in addition to those of the ordinary course :—

Aeschylus : *Eumenides*.

Sophocles : *Oedipus Rex*.

Aristophanes : *The Knights*.

Homer : *Odyssey*, Books, V, VI, VII, VIII.

Thucydides : Book II.

Plato : *Phaedo*.

Demosthenes : *De Corona*.

Aristotle : *Poetics*.

II. Candidates will be required to show a general knowledge of one prose and one verse subject, to be chosen by them from the following list :—

Aeschylus : *Agamemnon*, and *Choephoroi*.

Sophocles : *Oedipus Coloneus*, and *Antigone*.

Thucydides : First and Third Books.

{ Aeschines : *Contra Ctesiphontem*, and

{ Demosthenes : *De Falsa Legatione*.

III. COMPOSITION.—Prose.

IV. PHILOLOGY.—Victor Henry's *Comparative Grammar of Greek and Latin*.

V.—LITERATURE.—Mahaffy, *History of Greek Literature*, the portions bearing on the authors and subjects read by the candidate during his college course. Haigh, *Theatre of the Greeks*.

(6.) Undergraduates taking the Special Course in **Latin and English** (B) may, in each of the Third and Fourth Years of their course, omit any two of the subjects of those years except Latin and English. They shall be examined in the following subjects, viz. :—

#### LATIN.

The Latin subjects prescribed for the Special Course in Classics.

## ENGLISH.

The historical development of the language and literature to the year 1300. Bright, *Anglo-Saxon Reader*. Sievers, *O. E. Grammar* (trans. by Cook), Pt. II. Morris, *Specimens of Early English*, I. Emerson, *History of the English Language*. Sight reading of O. E.

History of the Elizabethan and Early Stuart Literature. Sidney, *Apologie for Poetrie*. Hooker, *Ecclesiastical Polity*, Book I. Bacon, *Advancement of Learning*, *Essays*.

Marlowe, *Tamburlaine*, *Edward II.*, *The Jew of Malta*. Greene, *Friar Bacon and Friar Bungay*. Jonson, *The Alchemist*, *Every Man in His Humor*. Beaumont and Fletcher, *Philaster*, *The Knight of the Burning Pestle*. Massinger, *A New Way to Pay Old Debts*. Webster, *The Dukes of Malvi*. Shakspeare, *Titus Andronicus*, *Romeo and Juliet*, *Julius Cæsar*, *Hamlet*, *Othello*, *Lear*, *Macbeth*, *Antony and Cleopatra*, *Coriolanus*, *Timon*, *The Two Noble Kinsmen*.

*Books recommended*: Sidney, Cook's edition (Ginn & Co.); Hooker, Church (Clarendon Press); Bacon, *Advancement*, Wright (Clar Press); *Essays* (Wright, G. T. Series). *History of Literature*: Ten Brink, *Saintsbury*, *Brooke*. Clarendon Press. "Mermaid," "Temple Dramatists," and Arber editions of Elizabethan works.

In awarding Honours, the thesis for Distinction in English 4 (D) will hereafter be taken into consideration.

(7.) Undergraduates taking the Special Course in **Greek and English** (c) may, in each of the Third and Fourth Years of their course, omit any two of the subjects of those years, except Greek and English. They shall be examined in the following subjects, viz:—

## GREEK.

The Greek subjects prescribed for the Special Course in Classics.

## ENGLISH.

The English subjects prescribed for the Special Course in Latin and English.

(8.) Undergraduates taking Special Course in **English and German** (d) must have taken German in the First and Second Years of their course, and may in each of the Third and Fourth Years omit any two subjects of those years except English and German. They shall be examined in the following subjects:—

## ENGLISH.

The English subjects prescribed for the Special Course in Latin and English.

## GERMAN.

Middle High German: Grammar (Wright's Middle High German Primer); Selections from Hartmann von Aue, Walther von der Vogelweide, Nibelungenlied, Gudrun, Wolfram von Eschenbach, Freidank, or Gottfried von Strassburg, Sebastian Brant, (Wacker-nagels Kleineres Altdeutsches Lesebuch).

Selections from Swiss and Plattdeutsch dialect literature.

German Literature of the 16th, 17th and 18th centuries, with selections from authors of that period

Two of the chief literary works of Goethe not read in the ordinary course.

Translations of unspecified passages from any Modern High German author.

Prose Composition.

(9.) Undergraduates taking the Special Course in **English and English History** (E) may, in each of the Third and Fourth Years of their course omit any two of the subjects of those years, except English and History. They shall be examined in the following subjects, viz. :—

ENGLISH.

The English subjects prescribed for the Special Course in Latin and English.

ENGLISH HISTORY.

English History from A. D. 1603-1689.

*Books recommended:* Green's History of the English People, Vol. 3; Lingard's History of England, Vols. 8-10; Hallam's Constitutional History of England; Ranke's History of England; S. R. Gardiner's works on this period; Clarendon's History of the Great Rebellion; Masson's Life of Milton; Carlyle's Life of Cromwell; Foster's Life of Eliot; Bayne's Chief Actors in the Puritan Revolution.

(10.) Undergraduates taking the Special Course in **Philosophy** (F) may, in each of the Third and Fourth Years of their course omit any one of the subjects of those years, except Philosophy. They are recommended to take German. They shall be examined in the following subjects:

- I. General History of Philosophy.  
Burnet: Early Greek Philosophy.  
K Fischer: Descartes and his School.
- II. Greek Philosophy from the Sophists to Aristotle.  
Plato: Republic (with Nettleship's Lectures).  
Theaetetus (with Dyde's Introduction).  
Aristotle: Metaphysics, Book I., and Ethics (with Muir, head's Introduction).
- III. Modern Philosophy from Locke to Kant.  
Fraser: Prolegomena to Locke.  
Green: Introduction to Hume.  
Seth: Scottish Philosophy.  
Royce: Modern Philosophy, Part I.  
A knowledge of Locke, Berkeley, Hume and Reid, as studied in the Class on Modern Philosophy is presupposed.
- IV. Kant: The Critiques of Pure Reason, of Practical Reason and of Judgment (as in Watson's Selections).  
Hegel: Logic, Chaps 1-IV. (Wallace's Translation).  
Seth: Hegelianism and Personality.
- V. Any three of the following:
  1. Principles of Logic. Bosanquet: Logic.
  2. Principles of Psychology. Ward: Psychology.

3. Principles of Ethics. Green: Prolegomena to Ethics; Wundt: Ethics.
4. Principles of Metaphysics. Ward: Naturalism and Agnosticism.
5. Philosophy of Religion. Caird, E.: Evolution of Religion; Lotze: Philosophy of Religion.

VI. Any *one* of the following:

1. History of Philosophy from Descartes to Leibnitz. Descartes: Method, Meditation and Principles; Spinoza: Ethics; Caird: Cartesianism; Pollock: Spinoza; Joachim: Ethics of Spinoza; Leibnitz: Monadology (with Latta's Introduction.)
2. History of Philosophy from Kant to Hegel. Hegel: Logic (Wallace's Translation), and Philosophy of Right (Dyde's Translation); Everett: Fichte's Science of Knowledge; Seth: Hegelianism and Personality, and From Kant to Hegel. McTaggart; Studies in Hegelian Dialectic.
3. History of Philosophy from Hume to Spencer. Comte: Positive Philosophy; Mill: as in Watson's Selections. Spencer: First Principles. Mill: Comte and Positivism; Douglas: John Stuart Mill. Watson: An Outline of Philosophy; Stephen: English Utilitarians.
4. History of Ethics in Great Britain. Selby-Bigge: British Moralists. Douglas: Ethics of Mill. Spencer: Data of Ethics. Green: Prolegomena to Ethics. Sidgwick: History of Ethics, Ch. iv. Watson: Hedonistic Theories Chaps. iv-xi. Sorley: Ethics of Naturalism. Courtney: Constructive Ethics. Pt II, Bk. I. Schurman: Ethical Import of Darwinism; Albee: Utilitarianism; Sidgwick: Martineau, Spencer, and Green.

(11.) Undergraduates taking the special course in **Pure and Applied Mathematics** (G) are recommended to take German in their First and Second Years, and Physics in their Second Year; and in the event of their not having done so, they should work up the German in their vacations, and should read the appropriate sections of the elements of Physics (if possible, performing experiments) before entering the Physics class. In their Third and Fourth Years, they are required to take the four Advanced Mathematics Classes of these years, the two senior classes in Physics and the class in Mathematical Physics, and three electives. The standard of attainment shown in the Examinations in this Class in both Years will be considered in estimating the results in the final examination of the Special Course.

The subjects of examination will be as follows:—

PURE MATHEMATICS.

Any four of the following:

- (a) Infinitesimal Calculus; (b) Plane and Solid Analytic Geometry;
- (c) Differential Equations; (d) Algebra (Determinants, Theory of Equations, Quantics, Invariants, Series, Functions of a real variable);
- (e) Projective Geometry.

## APPLIED MATHEMATICS.

Kinematics and Dynamics of Particles, rigid bodies, flexible strings, elastic solids and fluids,—those portions of these subjects which are treated in the class of Advanced Mathematical Physics or may be appointed for private reading in the course of the work of that class, the mode of treatment being by application of Analytical Geometry and the Differential and Integral Calculus.

(12.) Undergraduates taking the Special Course in **Mathematics and Physics** (H) should have studied German in their First and Second Years, and taken Physics 1 in their Second Year. In the event of their not having done so, they should work up the German in their vacations, and should read the proper sections of the elements of Physics (if possible, performing experiments), before entering Physics 2 or 3. They are required, if they wish to complete the course in two years, to take in their Third Year Advanced Mathematics, Physics 2 or 3, Physics, 6, and Chemistry 2, and in their Fourth Year, the Advanced Classes in Mathematics, Physics 3 or 2 and Physics 4, 5, 7 and 8. But they are advised to take three years rather than two to complete the course. The standard of attainment shown in the examinations in Physics 2 and 3 in both Years will be considered in estimating the results of the final examination of the Special Course.

Those who aim at High Honours will be expected either to prepare a thesis embodying the results of a short original investigation, or to exhibit a high standard of excellence in the more mathematical parts of the course.

The subjects of examination will be as follows:—

1. **MATHEMATICS.**—Analytic Geometry, Calculus, and Spherical Trigonometry as in Mathematics 2, and any two of the advanced courses in Pure Mathematics.

2. **APPLIED MATHEMATICS.**—The subjects of the Special Course in Pure and Applied Mathematics.

3. **GENERAL PHYSICS.**—A systematic general knowledge of all sections of the subject, as *e. g.*, in Watson's Text-book of Physics (Longmans & Co.) with a more detailed knowledge of special sections illustrating the use of theory in research, such as the kinetic theory of gases, the theory of solutions and of electrolysis, and the wave theory of light.

4. **EXPERIMENTAL METHODS.**—A general acquaintance with the methods applicable in different classes of investigation, as in Glazebrook and Shaw's Practical Physics (Longmans, Green & Co.), and Ostwald's Physico-Chemical Measurements (Macmillan & Co.)—The experimental methods of the following memoirs:—Joule's papers on the determination of the Mechanical Equivalent of Heat, contained in his Scientific Papers (Taylor & Francis), vol. I, pp. 123, 172, 298, 542, 632; Faraday's Experimental Researches in Electricity (Quaritch)

vol. I, Series iii, iv, v, vi, viii; Lord Kelvin's papers on the Electrodynamic Qualities of Metals, in his Mathematical and Physical Papers, Vol. 11, (Camb. Univ. Press.) The treatment of observations and the discussion of the accuracy of experimental results, (as in Holman's Precision of Measurements (John Wiley & Sons) supplemented by the more purely physical chapters of Merriman's Text-book of Least Squares (J. Wiley & Sons),

(13.) Undergraduates taking the Special Course in **Chemistry and Chemical Physics** (I) are recommended to select German as one of the subjects of their First and Second Years, and to take Chemistry 2, and Physics 1, in their Second Year. They are required in their Third and Fourth Years to take the following classes:—Mathematics 2, Physics 2 and 3, Physics 5, Physics 6, Chemistry 3, 4 and 5, and two additional classes not included in the preceding list, selected from the classes prescribed for the Third and Fourth Years.

Candidates for High Honours will be expected either to prepare a thesis embodying the results of a short original investigation, or to show special attainments in some branch of laboratory work, as the preparation of organic compounds, or the analysis of iron and steel, of ores, or of water. In estimating the results in the final examination of the Special Course, the standard of attainment shown in the Practical Physics Class and in the Senior Physics and Practical Chemistry Classes of both Third and Fourth Years will be considered.

Candidates will be examined at the end of the Fourth Year in the following subjects:—

#### CHEMISTRY.

(1.) The principles and theories of modern Chemistry. The following books are mentioned to indicate the extent of knowledge required:—Remsen's *Inorganic Chemistry, Advanced Course* (H. Holt & Co.); Berthsen's *Organic Chemistry*, translated by McGowan (Blackie & Sons, Van Nostrand); Meyer's *Outlines of Theoretical Chemistry*, translated by Bedson and Williams (Longmans).

(2.) Outlines of the history of Chemistry. Candidates will be required to have an acquaintance with the following:—Tilden's *Short History of the Progress of Scientific Chemistry* (Longman's); Schorlemmer's *Rise and Development of Organic Chemistry* (Macmillan & Co.); Roscoe's *Dalton and the Rise of Modern Chemistry*, (Macmillan & Co.); Shenstone's *Justus von Liebig*, (Macmillan & Co.) and the essays on Boyle, Priestley, Scheele, Cavendish, Lavoisier, Graham and Woehler, in Thorpe's *Essays in Historical Chemistry*, (Macmillan & Co.)

(3.) The following memoirs:—*On the Arsenates, Phosphates and Modifications of Phosphoric Acid*, Graham, Philosophical Transactions, 1833; *Ueber das Radikal der Benzoesäure*. Liebig and Woehler (Ostwalds Klassiker, No. 22); *Ueber die Constitution der organischen Säuren*, Liebig (Ostwalds Klassiker, No. 26.)

(4.) The principles and methods of qualitative analysis and of quantitative analysis, both gravimetric and volumetric, and the practical details of laboratory operations.

(5.) CHEMICAL PHYSICS.—Those sections of Physics which have an intimate bearing upon chemical research, viz., the properties of gases and liquids, including the kinetic theory of gases and the theory of solutions, the theory of heat, electrolysis, and the wave theory of light—Physical experimental methods which are applicable in chemical research, as in Ostwald's *Physico-Chemical Measurements* (Macmillan & Co)—The discussion of the degree of accuracy of experimental results, as in Holman's *Precision of Measurements* (J. Wiley & Sons).

(14.) Undergraduates taking the Special Course in **Geology** (J) must take Geology 1, and Physics 1, in the Second Year, and German during the first two Years. In the Third Year, candidates are required to take Mineralogy 1, and Geology 2. In the Third and Fourth Years they must pass in addition, in Biology, Mathematics 2, Chemistry 2, Chemistry 4, and Physics 2. In the Fourth Year, special lines of study will be taken up with the instructor in the Research Course, equivalent in amount to at least two courses, and involving original field work, reading, and one or more theses. In addition, there will be needed extra reading for the final examinations, along such of the lines mentioned below as are not taken up in classes or conference.

In determining Honours at the end of the special course, weight will be given not only to the final examination, but to the records of the various courses, and to the maturity of thought and method shown especially during the four years' work. Candidates for Honours or High Honours will be expected to carry their studies beyond the limit reached by pass students, and to show a grasp of their work of a high order.

At the end of the Fourth Year, examinations will be held upon the following subjects:—

(1.) A sight translation of a portion of some geological memoir in German, and one in French.

(2.) The History of Geology. Books recommended:—Lyell, Sir C., *Principles of Geology*, 11th ed., vol. 1, chapters 1 and 2; Geikie, Sir A., *The Founders of Geology*; Zittel, K. von, *History of Geology and Paleontology*; White, A. D., *A History of the Warfare of Science with Theology in Christendom*, vol. I, esp. chapter 5. Some of the original papers read in connection with other topics may be available also for this.

(3.) Advanced structural and dynamical geology, and the geology of Canada, including both reading and field work done in various courses.



(4.) Economic Geology, metallic and non-metallic; including (a) theories of the formation of coal and petroleum, (b) genesis of veins and vein ores, (c) the economic geology of some region studied especially in the course.

(5.) Special topics of the fourth year. This will be in part an oral exposition and defence of a thesis, given at the last seminary conference of the term.

**§ XVII. Degrees with Honours.**—Degrees with Honours in any one of the departments of study in which Special Courses are provided, will be conferred on undergraduates for special excellence shown at the Examinations in the subjects of such courses.

Successful candidates will be declared to have obtained their degrees With Honours, or With High Honours.

A candidate for Honours may defer his examination in the subjects of his Special Course until a year after he has passed the examinations in the ordinary subjects of the Fourth Year; in which case, however, such candidate shall not be entitled to his Degree until he has passed the examinations of such Special Course.

**§ XVIII. Degrees with Distinction.**—Degrees with Distinction will be conferred on undergraduates for special excellence shown, at Examinations and otherwise, in the work of the ordinary classes recommended to be taken in the Second, Third and Fourth Years of the Course. Such degrees imply greater specialization of subject than the ordinary degree and less than the degree with Honours; but they are intended to involve as much work as the latter.

The award of such degrees is based upon the Class Distinctions (§ xx, (6)) gained by candidates; but not only are the number and grade of the Distinctions considered, but also the private work required for them, and the relation to one another of the subjects in which they have been gained.

Candidates for such degrees should so select the elective classes of the above years (§ xv) that the classes thus selected together with required classes of these years, shall form groups of three or four classes in such of the following departments as they may prefer, viz.: (a) Latin; (b) Greek; (c) German; (d) French; (e) English; (f) History and Political Economy; (g) Philosophy; (h) Mathematics and Physics; (i) Chemistry, and (j) Geology. They should aim at the attainment of a good standing in all the classes thus taken, and at a high standing in all the classes of as many of the groups selected as possible.

Distinctions gained in recognized classes of other Faculties of the University are taken into consideration ; but not those gained in classes which are not taken as parts of the Course or in recognized classes of other Colleges.

Candidates for such degrees are advised to consult the Faculty at the beginning of the Third and Fourth Years with respect to the selection of classes.

### ATTENDANCE AND EXAMINATIONS.

§ XIX. **Attendance.**—Undergraduates and other students who wish their attendance on classes to be recognized as qualifying for a Degree or a Class Certificate, are required to attend the lectures or other meetings of the classes with regularity and punctuality. Professors and Lecturers are instructed to record the presence or absence of students immediately before commencing the work of the class, and to amend the record in the case of those who may enter thereafter, only provided satisfactory reasons are assigned. Irregularity may involve exclusion from the examinations held at the end of the session, and non-recognition of the attendance.

### § XX. **Class Exercises and Examinations.**

—(1.) Undergraduates and other students who wish their class work to be recognized as qualifying for a Degree, or a Class Certificate, are required to appear at all examinations, and to prepare such exercises, essays, reports, etc., as may be prescribed by the Professors or Lecturers.

In all classes, two examinations are held, one immediately before the Christmas vacation, and the other after the closing of lectures in the Spring. In some classes, other examinations may be held at dates appointed by the Professors. At the Spring Examinations, questions may be set on any subject treated during the session.

The dates of examinations are arranged so as to enable undergraduates who follow the order of classes recommended in § xv, to appear at all the examinations of the classes they may be attending. Undergraduates who attend the classes in any other order, and general students who wish to appear at examinations, should select classes with non-coincident examination dates. (See Almanac).

In order that the work done in a class by a student may be recognized as qualifying for a Degree or a Class Certificate, he must secure a position on the Pass List. In the determination of such list, both the standing obtained in the various

examinations and the degree of excellence shown in the essays, reports, and other class exercises referred to above are taken into consideration. The names appearing on the Pass List are arranged in order of merit.

(2.) A student who fails to obtain a position on the Pass List in one or more subjects at the end of any Session, shall be allowed a Supplementary Examination in such subjects at the beginning of the next Session of his attendance, on the day appointed for that purpose in the University Almanac (Sept. 12th, 1904); or he may present himself at the ordinary Christmas and Spring Examinations of such next Session. The fee for a Supplementary Examination, or for appearing as above provided, at the Christmas and Spring Examinations, shall be Two Dollars in each subject, but in the case of students who fail in more than two subjects, the maximum fee shall be Five Dollars.

(3.) A student who has failed to appear at the Supplementary or other Examination provided for by (2) may, on application to the Faculty, be granted a Special Supplementary Examination at the beginning of any subsequent Session. But, if in the meantime, the student has attended a more advanced class in the same subject, he will be expected to show greater proficiency than if he had passed the examination at the proper date. The fee for a Special Supplementary Examination shall be Five Dollars per subject, but if the examination includes more than two subjects, the maximum fee shall be Ten Dollars.

(4.) A student who fails either to appear or to pass at a Supplementary Examination shall not be allowed a Special Supplementary Examination in the same Session, except by special permission of the Faculty; and in cases in which such Examination is granted, the fee provided for by (3) must be paid.

(5.) Students wishing to appear as candidates at any Supplementary or Special Examination shall be required to give notice of their intention to the Secretary of the Faculty, at least one week before the date of such Examination, the fee to be remitted with such notice.

(6.) In addition to the ordinary work of the classes required for the attainment of a position in the Pass List, additional work, consisting of private reading, essays, reports, etc., is prescribed for students who aim at Class Distinction (see § xviii), special examinations being held in such additional work at the end of the Session. The award of such Distinction is

based upon the whole work of the class, the ordinary work as well as the additional, and may be made to any student attending the class, whether undergraduate or general student, provided his attendance has been sufficiently regular.

Class Distinctions are of two grades,—First and Second Class; but candidates who attain a standing considerably above that required for First Class, will be indicated as having made a High First Class. In the Distinction Lists, the names of successful candidates are arranged in alphabetical order in each grade.

No Supplementary Distinction Examinations are granted to unsuccessful candidates.

## PRIZES AND SCHOLARSHIPS.

### § XXI.—Medals, Prizes, Scholarships, and Bursaries.

*(The Senate reserves to itself the right of withholding Medals, Prizes and Scholarships, in cases in which sufficient merit is not shown.)*

#### GRADUATE PRIZES.

THE SIR WILLIAM YOUNG GOLD MEDAL, founded by bequest of the late Sir William Young, will be awarded on graduation to the student who stands first among those taking High Honours in Pure and Applied Mathematics, provided he attain a standard considerably above that required for High Honours.

UNIVERSITY MEDALS will be awarded on graduation to students who take High Honours in other departments than Mathematics, on the same conditions as the Sir William Young Gold Medal.

THE AVERY PRIZE.—This prize, the interest of \$500, bequeathed for this purpose by the late J. F. Avery, M. D., will be awarded on graduation to the student standing highest among those graduating with distinction. See § xviii.

THE 1851 EXHIBITION SCHOLARSHIP.—This Scholarship offered by Her Majesty's Commissioners for the Exhibition of 1851, which is of the annual value of £150 sterling and tenable for two years, is open to students of this Faculty. See Faculty of Science.

#### UNDERGRADUATE PRIZES.

NORTH BRITISH SOCIETY BURSARY.—A Bursary of the annual value of \$60, founded by the North British Society of Halifax, is offered for competition at the Examinations of

the Second Year's Course in Arts. It is tenable for two years, namely, during the Third and Fourth Years of the Undergraduate Course in Arts. Candidates must be undergraduates who have completed two years of the Curriculum, and must be eligible at the proper age for membership in the North British Society. The next competition will take place in April, 1906.

THE WAVERLEY PRIZE.—This prize, the interest of an endowment of \$1000, will be awarded annually to the student of the Second Mathematical Class, who stands highest at the Examinations in Mathematics, the winner of the North British Society Bursary being excluded.

#### ENTRANCE SCHOLARSHIPS AND BURSARY.

(1.) JUNIOR.—The following Scholarships and Bursary are offered for competition at the Junior Matriculation Examination in the Faculties of Arts and Science, to students entering the First Year of the Faculties of Arts and Science :

(a) Two *Sir William Young Scholarships* ; one, of the value of One Hundred Dollars, and one, of the value of Seventy-Five Dollars, tenable for one year and payable in two instalments.

(b) Two *Professors' Scholarships*, entitling to exemption from fees throughout the entire course, in classes conducted by Professors (not Lecturers) in the Faculties of Arts and Science, provided the scholar makes progress satisfactory to the Faculty.

They will be awarded to the four candidates ranking highest at this examination, providing their standing be considered satisfactory by the Faculty. The successful candidates will be allowed to select, in order of their standing, the scholarships which they shall hold. The Mackenzie bursar is not eligible.

(c) One *Mackenzie Bursary*, of the value of Two Hundred Dollars, will be offered annually in accordance with the following condition of bequest : Competitors of the name Mackenzie, Maclean or Fraser, who obtain Distinction, will be given the preference. Should no candidate of the name of Mackenzie, Maclean or Fraser, obtain Distinction, the Bursary will be awarded to the candidate standing highest among those obtaining Distinction.

The Bursary is payable in four annual instalments ; and the payment of any instalment is conditional on the bursar's

attending the classes required for undergraduates, and making satisfactory progress therein.

(2) SENIOR.—The following Scholarships are offered for competition at the Senior Matriculation Examination in the Faculties of Arts and Science, to students entering the Second Year who have not previously attended the classes of the First Year. See § xiv.

Two *Professors' Scholarship*, entitling to exemption from fees throughout the entire course, in classes conducted by Professors (not Lecturers) in the Faculties of Arts and Science, provided the scholar make progress satisfactory to the Faculty.

They will be awarded to the candidates ranking highest at this Examination, provided their standing is considered satisfactory by the Faculty.

**§ XXII.—The Rhodes Scholarships.**—These Scholarships, established for male students, are of the annual value of £300, and are tenable for three consecutive academic years. The holders of these Scholarships must continue their studies at Oxford University.

The first election of scholars from Canada will take place between February and May, 1904. The elected scholars will commence residence in Oxford in October, 1904.

The Trustees have placed the nomination to the Nova Scotian Scholarship for 1904 at the disposal of this University. Candidates for this Scholarship should, during the month of January, 1904, notify President Forrest of their intention of presenting themselves for the qualifying examination.

Candidates may elect whether they will apply for the Scholarship of the province in which the University or College which they are attending is located, or for that of the province in which they have their ordinary private domicile, home, or residence. They must be prepared to present themselves for examination in the province they select. No candidate may compete in more than one province.

The Trustees require all candidates to pass a qualifying, but not competitive, examination. This examination, intended to test the fitness of the candidate to enter upon his studies at Oxford, will be based on the requirements for Responsions.

The subjects of this examination as dated in the statutes of Oxford University are—

1. Arithmetic.
2. Either Algebra or Geometry.
3. Greek and Latin Grammar.
4. Translation from English into Latin prose.
5. Greek and Latin authors.

A detailed syllabus of the subjects will be given by this University to any one applying to the Secretary of Senate.

A list of those from this province who have successfully passed this test in 1904 will, as soon as possible, be sent to this University, and from this list the Senate will proceed to elect the scholar for 1904. The decision of this University shall be final as regards the eligibility of candidates for this Scholarship.

With each nomination, the Trustees require to be sent to them a statement, as full as possible, of the school and college career of the candidates selected, together with suggestions, if desired, as to the course of study for which he is best fitted.

The Trustees ask this University in making the nomination to comply as nearly as circumstances will permit with the spirit of the testator's wishes expressed as follows :

“ My desire being that students who shall be elected to the Scholarships shall not be merely bookworms, I direct that in the election of a student to a Scholarship, regard shall be had to (1) his literary and scholastic attainments ; (2) his fondness of and success in manly outdoor sports, such as cricket, football, and the like ; (3) his qualities of manhood, truth, courage, devotion to duty, sympathy for and protection of the weak, kindness, unselfishness, and fellowship ; and (4) his exhibition during school days of moral force of character and of instincts to lead and to take an interest in his school-mates, for those latter attributes will be likely in after life to guide him to esteem the performance of public duties as his highest aim.

“ As mere suggestions for the guidance of those who will have the choice of students for the Scholarships, I record that (1) my ideal qualified student would combine these four qualities in the preponderance of three-tenths for the first, two-tenths for the second, three-tenths for the third, two-tenths for the fourth qualification, so that, according to my ideas, if the maximum number of marks for any Scholarship were 200, they would be apportioned as follows—60 to each

of the first and third qualifications, and 40 to each of the second and fourth qualifications ; (2) the marks of the several qualifications would be awarded independently, as follows, (that is to say) the marks for the first qualification by examination, for the second and third qualifications respectively by ballot by the fellow-students of the candidates, and for the fourth qualification by the head master of the candidates' school ; and (3) the results of the award (that is to say, the marks obtained by each candidate for each qualification) would be sent as soon as possible for consideration to the Trustees, or to some person or persons appointed to receive the same, and the persons so appointed would ascertain, by averaging the marks on blocks of twenty marks each, of all candidates the best ideal qualified students.

“ No student shall be qualified or disqualified for election to a Scholarship on account of his race or religious opinions.”

The Trustees have decided that candidates eligible for a Canadian Scholarship must be unmarried, must be British citizens, must be between nineteen and twenty-five years of age, and must have reached at least the end of their Sophomore or second year work at some recognized degree-granting University or College of Canada.

### DEGREE OF M. A.

§ XXIII.—**Degree of Master of Arts.**— The degree of Master of Arts will be conferred on a Bachelor of Arts of this College, of at least one year's standing and of good character, either on his submitting to the Faculty a satisfactory thesis embodying the results of original research on some literary, philosophical or scientific subject, or on his passing an examination on a course of study, appointed or approved by the Faculty, of at least the extent represented by the academic work of one year of the Arts Course. In the latter case, no fixed courses of study are laid down, the intention being to encourage graduates to prosecute advanced courses of study either at this or at any other College or by private reading, and to adapt the courses to their individual tastes and capacities. But no course of study will be approved unless it is confined either to one department of study or to closely related departments.

Theses must be sent to the Secretary to the Faculty on or before the first of March. Examinations will be held ordinarily at the time of the Spring Examinations ; but in special circumstances, they may be held in Autumn. Candidates must give one month's notice of their intention to appear for examination. Fee to be remitted with notice.



§ XXIV.—Fees.—(1.) Fees are payable by students for Registration, (entitling to the use of the Library), for classes attended, and for certain examinations, and for the use of the Gymnasium. *They are payable in advance.*

No student is entitled to enter a class until he has paid the proper fees.

The following is a statement of the fees payable by students whether undergraduates or general students :

For Registration, payable annually by all students taking more than one class .....	\$ 5 00
For Registration, payable by students taking only one class....	3 00
For each class attended, (not being Practical Classes), per Session	6 00
For Chemistry 1 or 2, (with laboratory* work of not more than four hours a week) .....	10 00
For Chemistry 1 or 2, (with laboratory* work of five or more hours a week) .....	12 00
For a Practical Chemistry Class,* ten or more hours a week....	14 00
For a Practical Physics Class* five hours a week, per Session ..	8 00
For a Practical Physics Class* ten or more hours a week .....	14 00
For a Geology 1 or 2, or Mineralogy .....	8 00
For a Supplementary Examination, payable on giving the notice required by § xviii. (2), either \$2.00 in each subject, or ..	5 00
For a Special Examination, payable on giving the notice required by § xviii. (3), either \$5.00 in each subject, or § xviii (3).	10 00
For a Special Certificate of standing. ....	1 00
For M. A. Examination, or report on M. A. Thesis, payable in advance .....	5 00
For use of Gymnasium by all male students .....	1 50

The diploma fees are as follows :—

For B. A. Diploma .....	\$ 5 00
For M. A. Diploma .....	5 00
For B. A. or M. A. ( <i>ad eundem gradum</i> ) .....	10 00

Graduates of this University attending classes, not leading to a Bachelor's or Doctor's degree, are required to pay only the Registration Fee.

\*All students taking classes in the chemical or physical laboratory are required to make a deposit of Three Dollars on entering the class. This amount, or if charges for breakage have been incurred, what remains of it after such charges have been deducted, is returned to the student at the end of his laboratory course.

# Faculty of Pure and Applied Science.

## THE PRESIDENT.

J. LIECHTI, M. A.	L. M. SILVER, B. A., M. B., C.J.M.
A. MACMECHAN, Ph. D.	S. A. MORTON, M. A.
W. C. MURRAY, M. A., LL. D.	C. ARCHIBALD, M. E.
E. MACKAY, Ph. D.	H. W. JOHNSTON, M. C. S. C. E.
D. A. MURRAY, Ph. D.	ALEXANDER MCKAY, Esq.
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E. GILPIN, JR., LL. D., F. R. S. C.	F. H. MASON, F. C. S.
F. W. W. DOANE, C. E.	G. M. CAMPBELL, B. A., M. D.
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R. MCCOLL, M. C. S. C. E.	J. G. S. HUDSON, M. E.

*Dean of the Faculty:* PROFESSOR E. MACKAY.

*Secretary of the Faculty:* PROFESSOR D. A. MURRAY.

*Registrar of the Faculty:* PROFESSOR LIECHTI.

Correspondence should be addressed: -*The Secretary, Faculty of Science, Dalhousie College, Halifax, N. S.*

**XXV.—The Academic Year** consists of two Sessions, a Winter Session which begins in the second week of September and ends in the last week of April, and a Summer Session, beginning early in May and ending about the middle of June. Attendance at the Summer Session is only required of students in Mining. The Winter Session of 1904-05 will begin on Tuesday, September 6th, 1904, and end on Tuesday, April 25th, 1905. The Summer Session of 1905 will begin on Tuesday, May 2nd, and end on Friday, June 9th, 1905.

§ **XXVI.—Admission of Students.**—The regulations for the admission of students to the classes of this Faculty are the same as in the Faculty of Arts (§ i, p. 1.)

§ **XXVII.—Degrees.**—(1.) The degrees conferred in the Faculty of Science are:—Bachelor of Science (B. Sc.), Bachelor of Engineering (B. E.), Bachelor of Music (B. Mus.) and Master of Science (M. Sc.). Candidates for the baccalaureate degrees must attend with regularity and punctuality the classes of their courses of study as prescribed in §§ xxviii, and xxxiii, prepare the exercises, reports, etc., required, and appear at the examinations held, in such classes, and secure a position on the Pass Lists in all subjects. The courses of study for B. Sc. and B. E. extend over four years, that for B. Mus. over three years; but in the case of students who enter at advanced stages, they may be completed in a shorter time.

(2.) Persons may become candidates for degrees by passing the Junior or Senior Matriculation Examination. Those who pass the Senior Matriculation Examination are exempted from attending the classes recommended to be taken in the First Year of any course of study leading to the degree of B. Sc. or B. E. In general, the Matriculation Examination is to be passed by a student before he enters upon such a course.

(3.) General students who have attended some of the classes in any course of study and passed in the subjects of them, may become candidates for a degree in such course by passing one of the Matriculation Examinations, in which case the classes previously attended shall be recognized as qualifying for a degree. But in those subjects of the Matriculation Examination in which they have previously attended classes, such students shall be expected to show higher proficiency than if they had passed the examination at the beginning of their course.

(4.) Undergraduates or graduates in other Faculties of the University may be admitted to advanced standing in the course for any degree in this Faculty, provided that their previous courses have included some of the classes in the prescribed course for that degree, and that their attendance in such classes and the standing attained in them, satisfy the requirements of such prescribed course.

Undergraduates or graduates of other institutions, approved by the Senate, may be admitted to such advanced standing in the course for any degree in this Faculty as their previous courses warrant.

Persons seeking admission to advanced standing must make written application to the Dean of the Faculty of Science. In the case of undergraduates or graduates of other institutions, applicants must submit (*a*) a complete record of their college work, showing grades attained, duly certified by the college authorities; (*b*) a similar record of their Matriculation Examination, or a statement of the certificates accepted instead of the examination; (*c*) a calendar or calendars of the institution from which they come of such date as to show the courses they have followed.

Applications for admission to advanced standing are considered on their individual merits.

### § XXVIII. — Matriculation Examinations. —

(1.)—Candidates for a degree are required to give satisfactory evidence of preliminary general education either by passing a Matriculation Examination or by presenting certificates covering the work required for the examination.

For admission to the First Year of any of the courses leading to a degree in this Faculty, the subjects of the examination are:—(*a*) Arithmetic and Algebra, (*b*) Geometry, (*c*) English, (*d*) History and Geography, (*e*) French, and (*f*) any one of the following languages:—Latin, Greek, German. Candidates for the ordinary B. E. degree are exempt from examination in (*e*) and (*f*). Candidates for the B. E. degree with Distinction are required to take French and German. The requirements in these subjects are the same as for the Junior Matriculation Examination of the Faculty of Arts, and the regulations as to distinction, exemptions, dates, etc., are the same as in that Faculty. (See § xiii, pp. 5-7.)

(2) The Senior Matriculation Examination admits to the Second Year of the courses leading to the degrees of Bachelor of Science and Bachelor of Engineering. The following are the subjects of the Examination:—

1. MATHEMATICS.—As in the Senior Matriculation Examination of the Faculty of Arts (See § xiv, pp. 7-9).

2. CHEMISTRY.—As in the Senior Matriculation Examination of the Faculty of Arts, with the additional requirement that candidates must satisfy the examiner that they have done an amount of laboratory work equivalent to that prescribed for Chemistry 1.

3. ENGLISH.—As in the Senior Matriculation Examination of the Faculty of Arts.

4. FRENCH.—Racine: *Athalie*. Molière: *Les Précieuses Ridicules* (Macmillan & Co.). Labiche et Martin: *Le Voyage de Monsieur*

*Perrichon* (American Book Co.). Sight-reading: a comedy by Scribe. Translation from English writers. Exercises in Syntax. Translation of unspecified passages from modern authors. French composition.

5. GERMAN.—As in the Senior Matriculation Examination of the Faculty of Arts.

6. FREEHAND DRAWING *or* MECHANICAL DRAWING and DESCRIPTIVE GEOMETRY, as prescribed for the First Year of the course upon which the candidate wishes to enter.

Candidates for the degree of Bachelor of Engineering without Distinction are exempt from examination in French and German. The other regulations regarding exemption, and the dates of this examination are the same as for the Senior Matriculation Examination of the Faculty of Arts (§ xiv, pp. 7-10).

## COURSES FOR DEGREES.

§ XXIX.—**Courses of Study for Degree of B. Sc.**—(1.) Two courses lead to the degree of Bachelor of Science. Course A is a course in pure science and modern languages parallel to that leading to the degree of Bachelor of Arts. Course B, though not a technical course, is intended for those who aim at becoming engineers.

(2.) **Course A** consists of the classes named in the following statement. The arrangement in years shows the order in which it is recommended that these classes should be taken :\*

### First Year.

Mathematics 1.	French 2.
Chemistry 1.	German.
English 1.	Freehand Drawing.

### Second Year.

Mathematics 2, <i>or</i> Chemis-	English 2.
try 2, <i>or</i> Geology 1.	French 3.
Physics 1.	German.

### Third and Fourth Years.

German.

Nine single classes, † or their equivalents, selected from these subjects in the following groups, so that at least one class

\* The arrangement given is that upon which the time-table of lectures and the dates of examinations are based.

† A "single" class is one in which two or three lectures a week are given, a "double" class, one in which the number of lectures is four or five a week. One double class is regarded as equivalent to two single classes, provided a double fee is paid

shall be chosen from each group, and not more than four from groups B and C taken together :

A.	B.	C.	
Mathematics.	Biology.	Philosophy.	English
Physics.	Anatomy.	Education.	French.
Chemistry.	Histology.*	Political Economy.	German
Geology.	Physiology.		
Mineralogy.			

(3.) **Course B** consists of the following classes :

**First Year.**

Mathematics 1.	French 2.
Chemistry 1.	German.
English 1.	Mechanical <i>or</i> Archi- tectural Drawing.

**Second Year.**

Mathematics 2.	English 2.
Physics 1.	French <i>or</i> German.
Chemistry 2.	Descriptive Geometry.

**Third and Fourth Years.**

Physics 2 and 3.	Surveying 1 and 2.
Physics 6.	Hydraulic Engineering.
Applied Mechanics 1 and 2.	French <i>or</i> German.

One of the following groups :—

A.—For Civil Engineering :—	Geology 1.
	Mineralogy.
	Civil Engineering.
	Municipal Engineering.

B.—For Electrical Engineering :—	Physics 5.
	Physics 7.
	Chemistry 4.

The details of the subjects studied in the classes named above will be found under Courses of Instruction (§ xlvii, pp. 49 et seq.).

**§ XXX.—Special Courses for Degree of B. Sc.**—An undergraduate shall be allowed after completing the work recommended in § xxix for the first two years of his B. Sc.

\* Students who have registered as undergraduates in Medicine may complete their course in Medicine in three years instead of four by taking the following four classes in addition to the Chemistry and Physics, required in the First and Second Years:—Biology (Botany, Zoology), Junior Anatomy, Practical Anatomy. Such students are recommended to take the class in Histology also, to avoid conflict of hours in the time-table. (See Faculty of Medicine).

course, to restrict his attention to a more limited range of subjects than that of the ordinary course, provided his standing at the examinations of the first and second years, especially in the subjects corresponding to the Special Course on which he proposes to enter, seems to the Faculty to warrant such restriction.

Special courses are provided in the following departments :  
(a) Pure and Applied Mathematics, (b) Mathematics and Physics, (c) Chemistry and Chemical Physics, (d) Geology.  
(e) Philosophy.

The subjects of these courses and the regulations regarding them are the same as in the corresponding courses in the Faculty of Arts. (See § xvi, pp. 13 and 16-21.)

§ XXXI.—**The Degree of B. Sc. with Honours** in departments in which special courses are provided in this Faculty, shall be conferred on the same conditions as the corresponding degree in the Faculty of Arts (§ xvii, p. 21.)

§ XXXII.—**The Degree of B. Sc. with Distinction** shall be conferred on the same conditions as the corresponding degree in the Faculty of Arts (§ xviii, pp. 21-22.)

§ XXXIII.—**Course for the Degree of B. E.**—  
(1.) A course of study leading to the Degree of Bachelor of Engineering in Mining is prescribed for students intending to become mining or metallurgical engineers.

The work of a mining engineer involves the constant application of the principles of certain fundamental sciences, as Mathematics, Physics, Chemistry and Geology. The technical training of a mining engineer is accordingly based upon a competent knowledge of these sciences, supplemented by a knowledge of the art of expression both by drawing and by language. In the following course the first two years are wholly devoted to the above-named sciences, together with Mechanical Drawing and English. In the Third Year some technical subjects, as Surveying, Applied Mechanics, Metallurgy and Mining are introduced; and the Summer Session, at the end of the Third Year, is devoted to field-work in Geology and Mining. In the Fourth Year the classes are almost wholly technical and are designed to cover two distinct though closely connected fields: that of the mining engineer, involved in the locating, developing and operating of mining properties, and that of the metallurgist, in the reduction of ores and the treatment of fuels. As a student may be looking forward to work confined to one or other of these fields, he is now

allowed to specialize to a certain extent; but he is in all cases required to have such a knowledge of both fields as may be essential to successful work in the one selected for specialization.

(2.) The following arrangement of the prescribed classes of the course in years gives the order in which, as a rule, these classes should be taken; and it is the order on which the time table of classes and examinations is based. In special cases, however, the Faculty may grant permission to take the classes in a modified order, subject to the regulation that no student shall, in general, be admitted to an advanced class in any subject who has failed to pass in classes required as preliminary, the right, however, being reserved to admit to an advanced class a student who has not fulfilled all the requirements of admission, provided he shall prove his fitness for the advanced work within one month of his admission to the class.

Details of the classes named below are given under Courses of Instruction (§ xlvii, pp. 49 et seq.).

**First Year.**

Mathematics 1.	Mechanical Drawing.
Chemistry 1.	English 1.
Descriptive Geometry.	*French 2 <i>or</i> German 2 (optional subjects).

**Second Year.**

Mathematics 2.	Geology 1.
Physics 1.	English 2.
Physics 6.	*French 3 <i>or</i> German 3 (optional subjects).
Chemistry 2.	

**Third Year.**

Physics 2.	Metallurgy 1.
Chemistry 4.	Metallurgy 2.
Geology 2.	Mining 1.
Mineralogy.	Surveying 1 and 2.
Applied Mechanics.	Mining 4 (Field Work. Summer Session).

**Fourth Year.**

Physics 7.	Metallurgy 4.
Geology 3.	Mining 2.

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\* Required for the degree of Bachelor of Engineering with Distinction (§ xxxv, p. 37).



Applied Mechanics.	Mining 3.
Hydraulic Engineering.	Mining Law.
Metallurgy 3.	THESIS.

§ XXXIV.—**Degree of Bachelor of Engineering.**—The degree of Bachelor of Engineering in Mining shall be conferred upon candidates who have completed the prescribed course (§ xxxiii), provided, however, that students from other institutions, admitted to advanced standing, shall have had at least one full year of study at this School.

§ XXXV.—**Degree of B. E. with Distinction.**—Candidates for the degree of Bachelor of Engineering who have shown special excellence in the classes prescribed for the course, and, in addition, in the optional classes in either French or German, shall be declared to have obtained the degree with Distinction, or with Great Distinction, according to the standard of excellence they have reached.

§ XXXVI.—**Course of Study for Degree of B. Mus.**—(1.) This Course of Study includes, besides Acoustics (Physics 1), the following subjects:—English, Harmony, Counterpoint, Canon and Fugue, Form, and History of Music, for two years in each case; Instrumentation and Analysis of Scores, for one year.

Candidates shall be required to pass in French and German in the Junior Matriculation Examination, and to satisfy the examiners before proceeding to the final examination for the degree that they have a good reading knowledge of these languages.

They shall be required, besides attending the courses of instruction in the above subjects given in this University or in recognized institutions, performing the required class exercises and passing the examinations, to compose the exercises specified below, and to give evidence of their ability as musical performers by playing before one or more of the examiners, on the pianoforte or organ the pieces of music mentioned below.

(2.) The classes in the above subjects need not be taken in any one definite order and may be extended over more than three years, but students are recommended to take them in the following order:—

FIRST YEAR.—(1) Harmony in not more than four parts; (2) History of Music from 1600 to 1750; (3) Acoustics in so far as connected with the Theory of Music; (4) English.

SECOND YEAR.—(1) Harmony in not more than five parts; (2) Simple Counterpoint in two or three parts; (3) Canon in two parts, Imitation and Fugue in not more than three parts; (4) Form: Elementary Forms, Phrases, Periods, Open and Closed Forms; (5) Elements of Instrumentation; (6) History of Music from 1750 to the present time; (7) English.

THIRD YEAR.—(1) Single and double Counterpoint in not more than five parts; (2) Strict and Free Fugue in not more than five parts; (3) Form: Binary Form, Ternary Form, Rondo and Sonata; (4) Analysis of certain prescribed scores.

Exercises to be composed by the candidate: (a) A solo song with pianoforte accompaniment; (b) A four part vocal composition; (c) An instrument composition (other than a dance) for pianoforte, organ, or other stringed or wind instruments with pianoforte accompaniment.

The final examination in the practice of Music shall include one of the following groups:—

**For the Pianoforte.**

Prelude and Fugue in E minor.....	<i>Mendelssohn.</i>
C major Sonata (Waldstein) .....	<i>Beethoven.</i>
A $\flat$ major Polonaise .....	<i>Chopin.</i>
D $\flat$ major Nocturne .....	<i>Chopin.</i>
Concerte-Etude No. 1 (Waldesrauschen) .....	<i>Liszt.</i>
Rhapsodie No. 12 .....	<i>Liszt.</i>

**For the Organ.**

Prelude and Fugue in E major .....	<i>Bach.</i>
Sonata in D minor (solo form) .....	<i>Merkel.</i>
Air with Variations and Fugato in A .....	<i>Smart.</i>
Third Organ Sonata.....	<i>Mendelssohn.</i>

**SHORT COURSES.**

§ XXXVII.—**Short Courses in Mining for General Students.**—(1.) Courses in mining have been arranged for the benefit of students who may be unable to spend four full years at the University, but may be able to give full attendance for shorter periods.

Students entering on these courses shall not be required to pass any preliminary examination; but they shall not, in general, be permitted to enter an advanced class until they have passed in the class or classes required as preliminary, the right, however, being reserved to admit to an advanced class a student who has not fulfilled all the requirements of admission, provided he shall prove his fitness for the advanced work within one month of his admission to the class. Subject to this provision, the classes named in the courses given below may be taken in any convenient order.

The details of the subjects studied in the classes mentioned will be found under Courses of Instruction (§ xlvi, pp. 49 et seq.)

**(2.) Short Course in Colliery Management.—**

The following course is intended for men who have already passed the examination of the Provincial Board as Underground Managers, and is designed to supplement their practical knowledge with the theoretical training desirable for Colliery Managers. The course may be completed in one Winter Session.

Trigonometry (Mathematics 1).	Mining 1.
Geology 1.	Mining 3.
Mechanical Drawing.	Mining Law.
Hydraulic Engineering.	Surveying.

**(3.) Short Course in Prospecting.—**

The following course may usually be completed in two Winter Sessions and one Summer Session.

Trigonometry (Mathematics 1).	Metallurgy 1.
Chemistry 1.	Mining 1.
Chemistry 2.	Mining Law.
Geology 1.	Surveying.
Geology 3.	English 1 (optional).
Mineralogy.	Mining 4 (Field Work, Summer Session).
Mechanical Drawing.	

**(4.) Elective Courses.—**General students in mining, not being candidates for one of the above-mentioned Certificates, are free to select any class or group of classes which may suit their purpose, subject to the regulation for admission to advanced classes mentioned above (§ xxxvii, (1.)) and the provisions of the time-table. Encouragement is given to persons engaged in general mining to attend the College and take such classes as may enable them to conduct their work to greater advantage and safe-guard their property. A student who has entered upon one of the above courses may, with the approval of the Faculty, take classes in addition to those prescribed in the course he is following.

**§ XXXVIII. — Certificates in Mining.—**

Students who satisfactorily complete either of the short courses in mining subjects outlined above, (§ xxxvii, (2), (3)), shall be entitled to a Certificate of Proficiency, which shall indicate the character of the course they have followed, and the degree of success attained in it. Candidates for a Certificate shall not be required to pass a Matriculation Examination, but they shall be required to satisfy the Faculty that they have a fair general education.

§ XXXIX.—**Certificate in Teaching.**—This Certificate will be granted to candidates on the following conditions :

1. They must have received the degree of Bachelor of Arts or Science from this or some recognized University before the Certificate is granted. Candidates, however, may have qualified for the certificate before attaining to the Bachelor's degree.

2. They must have spent, at least, 100 hours in observation and practice under approved supervision, and must have taught two or more lessons in a manner satisfactory to Examiners appointed or approved by this University.

3. They are required to attend the courses in the Science, History and Practice of Education given in this University. Candidates, however, who have taught and whose work has been favourably reported upon by a recognized authority, or who have taken a course in a Normal School, will not be required to take the course in Practice. Such candidates may be exempted from the second requirement mentioned above.

4. They must pass Examinations in the following :—

James, *Talks to Teachers.*

The Mental Development of the Young.

Fitch : *Lectures on Teaching.*

Adams : *Primer on Teaching.*

Laurie : *Language and Linguistic Method.*

Landon : *Principles and Practice of Teaching and School Management.*

Adams : *Herbartian Psychology.*

Plato : *Republic*, as in Bosanquet's Selections.

Burnet : *Aristotle on Education.*

Ascham : *Schoolmaster.*

Milton : *Tractate on Education.*

Locke : *Thoughts on Education.*

Spencer : *Education.*

Thring : *Theory and Practice of Teaching.*

Quick : *Educational Reformers.*

Williams : *Modern Education.*

Russell : *German Secondary Schools.*

School Systems in Canada and United States.

They may, however, be exempted from such parts of the above examination as are included in the Class Examinations passed by them.

## ATTENDANCE AND EXAMINATIONS.

§ XL.—**Attendance.**—The regulations as to attendance of students are the same as in the Faculty of Arts. (See § xix, p. 22).

§ XLI.—**Class Exercises and Examinations.**  
—(1.) All students are required to prepare such exercises, reports, etc., as may be prescribed by the Professor or Lecturer, and to appear at all examinations.

In all classes, not conducted by Lecturers, two examinations are held, one immediately before the Christmas vacation, and the other after the closing of the lectures in April. In some classes other examinations may be held at dates appointed by the Professors. At the April examinations questions may be set on any subject treated during the session.

The dates of examinations are arranged so as to enable undergraduates who follow the order of classes recommended in §§ xxix and xxxiii, to appear at all the examinations of the classes they may be attending. Undergraduates and general students who attend the classes in any other order, should select classes with non-coincident examination dates. (See Almanac).

In determining the standing of a student in any class the degree of excellence shown in the essays, reports, field or laboratory work or other class exercises, is incorporated with the standing at the examination. In order that a student's work in any class may be recognized as qualifying for a Degree or Certificate, he must secure a position on the Pass List. *To secure such a position, students in any of the Mining courses or in the B. Mus. course must show a higher degree of proficiency than those in the other (non-professional) courses in this Faculty.*

(2.) A student who fails to pass in any class but who has satisfactorily completed the class exercises other than examinations, shall be allowed a Supplementary Examination in such class at the beginning of the next session of his attendance, on the day appointed for that purpose in the University Almanac.

The other regulations regarding Supplementary Examinations are the same for students in the B. Sc. or B. Mus. courses as in the Faculty of Arts. (§ xx, p. 23).

(3.) A student in any Mining course who, having failed in any class, does not take, or fails to pass, the Supplementary Examination in that class shall be regarded as "deficient" in that class.

Any student who is thus deficient in any class or classes of his course for previous years shall be required to pursue, in addition to the regular work for the year, such studies as may be necessary to make good the deficiency, or such part of it as the Faculty may determine.

A candidate for the Degree of Bachelor of Engineering must have made good all deficiencies in his Matriculation Examination and in classes of previous years before entering upon his final year of study for the degree.

The regulations regarding fees, notice required, etc., are the same in Mining courses as in the Faculty of Arts.

(4.) Students whose final standing is sufficiently high are awarded First or Second Class Distinction; but students who attain a standing considerably above that required for First Class shall be indicated as having made a High First Class. In the Distinction Lists the names are arranged in alphabetical order in each grade. In the Pass Lists the names are in order of merit.

### DEGREE OF M. Sc.

§ XLII. — **The Degree of Master of Science (M. Sc.)**—The degree of Master of Science shall be conferred on a Bachelor of Science of at least one year's standing and of good character, either on his submitting to the Faculty a satisfactory thesis embodying the results of original research in some department of pure or applied science, or on his passing an examination in a course of scientific study, appointed or approved by the Faculty, of about the extent represented by the academic work of one year of the B. Sc. course. In the latter case no fixed courses of study are laid down, the intention being to encourage graduates to prosecute advanced courses of study either at this or at any other University, or by private reading, and to adapt the courses to their individual tastes and capacities; but no course of study shall be approved unless it is confined either to one department of science, or to closely related departments.

Theses must be sent to the Dean of the Faculty on or before the first day of March. Examinations shall be held ordinarily at the time of the Spring Examinations; but in

special circumstances they may be held in the autumn. Candidates must give one month's notice of their intention to appear for examination.

On transmitting the thesis, or on giving notice of intention to appear for examination, candidates must pay a fee of Five Dollars. In the event of the degree being granted, a further fee of Five Dollars is payable for the Diploma.

## PRIZES AND SCHOLARSHIPS.

§ XLIII.—**Medals, Prizes and Matriculation Scholarships.**—(1.) The Sir William Young Scholarships, the Professors' Scholarships, and the Mackenzie Bursary, offered for competition at the Junior and Senior Matriculation Examinations, are open to candidates for matriculation in this Faculty. (See § xxi, pp. 25-6).

The Sir William Young Gold Medal, the University Medals, the Avery Prize, and the Waverley Prize, are open for competition to undergraduates in any of the courses leading to the B. Sc. degree. (See § xxi, pp. 24-5).

The Waverley Prize is also open for competition to undergraduates in mining.

(2.) **The Cape Breton Alumni Bursary.**—The Cape Breton Branch of the Alumni Association offer for competition, annually, to undergraduates from Cape Breton in the Third Year of the course in Mining Engineering a bursary of the value of Fifty Dollars. The bursary will be awarded to the undergraduate from Cape Breton who stands highest in the subjects of the Third Year, provided his standing is considered satisfactory by the Faculty.

§ XLIV.—**1851 Exhibition Science Research Scholarship.**—Her Majesty's Commissioners for the Exhibition of 1851 have, for some years, offered Scholarships in certain universities of the United Kingdom and the Colonies, with the intention of enabling students of science who have indicated high promise of capacity for original research to continue the prosecution of science with the view of aiding in its advance or in its industrial applications. In 1894, 1896, 1898, 1900, and 1902, they placed the nomination to one of these Scholarships at the disposal of this University, and it is expected that a similar nomination will be placed at the disposal of the University for the year 1904.

The following have held scholarships :—

1894-6.....	F. J. A. MCKITTRICK, B. Sc.
1896-9.....	D. McINTOSH, B. Sc.
1898-1901.....	E. H. ARCHIBALD, M. Sc.
1900-3.....	JAMES BARNES, B. A.
1902—.....	T. C. HEBB, M. A., B. Sc.

These Scholarships are of the annual value of one hundred and fifty pounds sterling, are tenable for two years, subject to the fulfilment of certain conditions mentioned below, or, by special resolution of the Commissioners, for three years, and are open to women as well as men.

The following were the conditions of nomination in 1902:

(a) The nominee must be a British subject.

(b) He (or she) must, at the date of the nomination, have been for a term of three years, a *bona fide* student of Science in a University or College (or in Universities or Colleges) in which special attention is given to scientific study,—a graduate who has continued his studies at a College after graduation being regarded as a student.

(c) He must have been a student of Dalhousie College either during the academic year at the end of which the nomination is made, or during the previous year; but in the event of his having ceased to be a student of Dalhousie College at the end of the previous year, he must have been engaged during the year of nomination solely in scientific study.

(d) He must have indicated high promise of capacity for advancing Science or its applications by original research; Evidence of capacity for original research in Science is strictly required, this being one of the main qualifications for a scholarship; and the nominee will be selected from the students qualified for nomination mainly on the ground of superiority in this respect, though the general proficiency attained in the study of Science, special knowledge of departments of Science closely related to that to which the candidate intends to devote himself, and knowledge of such subjects as French and German, which are useful in the prosecution of research, will also be taken into account.

(e) There is no absolute restriction as to age; but a nominee whose age exceeds 30 will only be accepted by the Commissioners under very special circumstances.

The nomination which is to be made by this University to the Commissioners in London, will be referred by them to a committee of eminent scientific men, who will advise them upon it; and the nomination will take effect on its being confirmed by the Commissioners.

The scholarship may be held at any University in the United Kingdom or abroad, or in any other institution to be approved by the Commissioners, the only restriction being that the institution selected shall be properly equipped for the prosecution of Science. But a scholar will be required, in the absence of special circumstances, to proceed to an institution other than that by which he is nominated,

The scholar, during his tenure of the scholarship, must devote himself wholly to study and research, more especially in some branch



of Science, such as Physics, Mechanics, or Chemistry, the extension of which is especially important to our national industries; and he is not allowed during such tenure to hold any position of emolument.

The continuance of the scholarship for the second year is dependent on the work done in the first year being satisfactory to the Scientific Committee appointed by the Commissioners.

Only one-fourth, at most, of the scholarships granted in any one year, are renewed for a third year, the renewals being awarded to the most deserving of the candidates.

The conditions for the exceptional renewal of scholarships for a third year are as follows:—

(1) The scholar shall have published in the proceedings of some Scientific Society, or in some Scientific Journal, an account, approved by the Scholarships Committee, of an adequate research.

(2) The scholar shall satisfy the Committee:—

That a continuance of the scholarship for a third year is likely to result in work of scientific importance.

That such work is not likely to recompense the scholar pecuniarily.

That the scholar is not in a position to continue the work without the help of the scholarship.

That the scholar intends, after the expiration of the scholarship, to adopt a pursuit in which his studies during his tenure of the scholarship, will find useful practical application.

(3) The scholar shall undertake to make a detailed report to the Commissioners, of his work during the third year.

(4) The conditions on which the scholarship was originally granted shall apply in all respects to its continuance during the third year.

The scholarship is payable half-yearly in advance (through the Treasurer of this University, if the scholar study in America): but £25 will be reserved from the last payment until the scholar has made a satisfactory final report.

The candidate nominated is required by the Commissioners to sign the following declaration:

I, the undersigned, hereby declare that the particulars concerning me mentioned in the foregoing form are correct, and I undertake that, if a Science Research Scholarship is awarded to me, I will hold it subject to the conditions laid down by Her Majesty's Commissioners for the Exhibition of 1851 with reference thereto, and I will, during its continuance, wholly devote myself to the objects of the scholarship, and I will not during such continuance hold any position of emolument.

In cases in which the candidate nominated for a scholarship appears to H. M. Commissioners to have had insufficient opportunity of showing whether or not he has the power to carry on independent research, and not therefore to be immediately qualified for a scholarship, but to give promise of becoming so after a year's experience of research work, said candidate also not being in a position to continue his studies

without assistance, H. M. Commissioners *may* award him a Probationary Bursary. The following are the regulations under which such Bursaries are tenable :

1. A Bursary is intended for the maintenance for one year of a Student who proposes to become a Science Research Scholar under the scheme of the Commissioners at the expiration of the period covered by the Bursary, in order to afford him an opportunity of proving his power to carry on independent research. The authorities of an institution recommending a Student for a Bursary will be presumed to have satisfied themselves that he *bona fide* intends to accept a Scholarship if subsequently appointed to one.

2. An applicant for a Bursary must, except as to evidence of capacity for original research, fulfil all the conditions for the time being laid down for appointment to a Science Research Scholarship. He must have passed a B. Sc. examination (or its equivalent) with Honours before the commencement of the period covered by the Bursary. His age must not exceed 25, except under special circumstances.

3. A Bursary is tenable for one year, and is of the value of £70, payable by half-yearly instalments in advance, the second instalment being payable on receipt of a certificate from the Professor under whom the holder has been working that he has faithfully performed his duties.

4. A Bursary will be awarded on condition that the nominating institution undertakes to provide for the holder facilities for conducting research, and the requisite supervision, free from charge and incidental expenses

5. The holder of a Bursary shall devote himself exclusively to research, and work preparatory to research, and none of his time shall be spent in assisting a teacher in his duties. The holder of a Bursary must not hold any other Bursary, Scholarship, or position of emolument.

6. The holder of a Bursary shall on or before May 1st in the year of tenure send to the office of the Commissioners an account of the research work performed by him, together with an application for appointment to a Science Research Scholarship. The Commissioners will expect to receive from the Professor under whom the holder of the Bursary shall have worked, a confidential opinion as to his capacity and qualifications.

7. The Commissioners may either appoint the holder of a Bursary to a Science Research Scholarship, or at their absolute discretion decline to appoint him, and in the latter case, shall not be called upon to state any ground for their decision.

8. A Science Research Scholarship, if granted, shall be held on the usual conditions attached to the Scholarships, or on any special conditions which the Commissioners may impose. But a scholar who previously to appointment has held a Bursary, shall not be eligible for exceptional renewal of his Scholarship for a third year.

Students who desire to become candidates for nomination to the above Scholarship must make application to the President of the University on or before the 1st day of February, 1904. In making such application they must furnish a statement of the following particulars :—

- (a) Name and address.
- (b) Age and birth-place.
- (c) Institution or institutions in which candidate's term of study has been passed.
- (d) Specific statement of qualifications of candidate, including particulars of his college career, and of original research in which he has been engaged.
- (e) Name of institution to which candidate proposes to attach himself during tenure of Scholarship.
- (f) Statement of the particular scientific work, specifying the branch of science, to which the candidate proposes more especially to devote himself.
- (g) Statement as to whether or not the candidate will be prepared to accept a Probationary Bursary in the event of the Commissioners being unable to award a full Scholarship on the evidence submitted, and in the event of his being so prepared, a further statement as to his being unable to continue his studies without assistance.

As this University is required to certify the correctness of the above statement in the case of the candidate nominated, the statement must be accompanied by satisfactory evidence as to all particulars which are not in the University records. Thus age, attendance at other Universities or Colleges, and accounts of original researches conducted elsewhere, must be properly attested.

## SUMMER SCHOOL.

### § XLV. — Summer School of Mining. —

During the Summer Session classes for miners and others interested in mining or related subjects may be held at one or other of the more important mining centres in the Province. The object of these classes will in no case be to duplicate instruction now available in local schools for miners, but, in communities where such schools exist, to offer those who have passed through them opportunities for further study. The subjects in which classes will be opened as well as the grade of instruction given will necessarily vary in different mining centres, and an effort will be made to adapt the classes as fully as possible to the needs of the community in which they are being held. The classes will continue for six weeks. During the Summer Session of 1903, classes in Geology, Mining and Chemistry, were held in Sydney, Cape Breton. The classes for 1904 will be held in Glace Bay. Detailed information is given in the Circular of the Summer School of Mining, which may be obtained on application to the Secretary of the Faculty of Science.

§ **XLVI.—Fees.**—The regulations regarding fees payable by students for registration, gymnasium, supplementary and special examinations, and such classes, conducted in the college, as are common to this Faculty and the Faculty of Arts, are the same as in the Faculty of Arts. For extramural classes the fees prescribed in the institutions in which they are held must be paid.

The following are the fees for each year of the course in Mining Engineering, payable by undergraduates taking the prescribed course. These amounts entitle the student to the use of the Library and Gymnasium and to attendance upon all the required classes of the course. For optional classes an additional fee must be paid in accordance with the schedule given below.

First year in Mining Engineering.....	\$46 50
Second year.....	52 50
Third year.....	66 50
Fourth year.....	61 50

The class fees payable by students taking one or more classes in the Mining course, but not taking the prescribed course are as follows :

For *Physics 6 or 7, Geology 1 or 2, or Mineralogy.....	\$ 8 00
For *Chemistry 1.....	10 00
For *Chemistry 2, or Metallurgy 4, or Mechanical Drawing....	12 00
For *Chemistry 4.....	14 00
For any other class.....	6 00

The Degree Examination fees and other Examination fees not previously specified are as follows :—

For Examinations in Music (B Mus.), in each year of the course	\$10 00
For M. Sc. Examination or report.....	5 00
For Examination in Anatomy, Histology or Physiology.....	3 00

The Graduation Fees are as follows :—

For B. Sc. Diploma.....	\$ 5 00
For B. E. Diploma.....	5 00
For M. Sc. Diploma.....	5 00
For B. Mus. Diploma.....	20 00
For an <i>ad eundem</i> Degree.....	10 00

\* All students taking classes involving laboratory work are required to make a deposit of Three Dollars on entering the class for each such class taken. This amount, or if charges for breakage have been incurred, what remains of it after such charges have been deducted, is returned to the student at the end of his laboratory course.

# Course for the Degree of B. E. in Civil Engineering.

The Governors of Dalhousie University having decided to organize a department of Civil Engineering, the following course leading to the degree of B. E. in Civil Engineering is now offered. The regulations in this department relating to admission, attendance and class work, examinations, deficiencies and distinction, are the same as those for the degree of B. E. in the School of Mining and Metallurgy. (See Calendar of School of Mining, or of Faculties of Arts and Science, pp. 30-40.)

## COURSE OF STUDY.

The course of study in Civil Engineering extends over four years and is arranged so as to give a thorough training in the subjects treating of the principles on which the practice of this profession rests. Although the course is not specialized, still, owing to the method of instruction, the student on completing his studies should be able to begin work successfully in any one of the numerous branches of the profession.

The instruction is carried on by lectures and recitations and by practical work in the drawing office, field and laboratory. In this way the student is drilled in the principles underlying all the branches of Civil Engineering and by working out numerous exercises, becomes familiar with engineering instruments and testing machines and with the problems which occur in ordinary practice.

The work of the first two years is arranged to suit the needs of those wishing to qualify themselves as land surveyors.

During the year a special course of illustrated lectures will be given by distinguished engineers on the construction and maintenance of various engineering works.

The following table shows the subjects studied, and the number of hours per week given to each, during the course:

### First Year.

Mathematics 1,	5 hrs.	French (or German) 1,	3 hrs.
Chemistry 1,	6 "	English 1,	2 "
Drawing,	14 "		

**Second Year.**

Mathematics 2,	5 hrs.	Surveying and Plotting,	6 hrs.
Physics 1,	4 "	Topographical Drawing,	3 "
Chemistry 2,	6 "	French or German,	3 "
Descriptive Geometry,	5 "	English,	1 hr.
		<i>Engineering Camp.</i>	

**Third Year.**

Applied Mechanics, 3 hrs.		Railway and Highway Engineering,	8 hrs.
Physics (Thermody- namics),	2 " 1 trm,	Masonry Construction,	4 "
Physics (Electricity),	2 " 1 trm,	Hydraulics,	2 "
Physical Laboratory,	5 "	Geology I,	6 "
		Hydraulic Engineering,	1 hr.
		<i>Engineering Camp.</i>	

**Fourth Year.**

Designing,	13 hrs.	Electrical Measurements,	3 hrs
Geodetic surveying,	5 " 1 trm,	Testing Laboratory,	
Practical Astronomy,	2 " 1 trm,	(1 term)	5 "
Geology 2,	6 "	Law of Contracts,	1 hr.
Hydraulic Engin- eering,	1 hr.	<i>Engineering Camp</i> and work at notes of survey.	
		<i>Engineering Scheme or Research.</i>	

Each student of the fourth year is required to prepare a scheme with adequate drawings and designs of some new engineering enterprise or to complete an original research on some material of construction, the subjects to be submitted for approval to the Professor of Civil Engineering not later than Dec. 1st, and the completed report to be handed in on or before April 1st.

**DETAILS OF CLASSES.**

Mathematics, Physics, Chemistry, Geology, French, German, English, and Descriptive Geometry, as in the Calendar of the School of Mining, pp. 22-42, or of Faculties of Arts and Science, pp. 49-81.

**DRAWING.**—Lectures 2 hours a week and drawing 12 hours — Instruction in drawing is given to all students in engineering in the first year, and particular attention is paid to the work done in the drawing office during the whole course. The work includes geometrical exercises, lettering and colouring, perspective, elementary projections, mechanical drawing, preparation of tracings and blue printing.

In the second and third years instruction is given in topographical drawing and more advanced mechanical drawing. *Drawing 3 hours per week.*

**SURVEYING, ASTRONOMY AND GEODESY.**—**SURVEYING.** *Lectures 2 hours per week, with field and office work 4 hours.* The class in surveying is taken by all students in engineering in the second year. The use and adjustment of the instruments is first taken up, and then land, topographical, and underground surveying are discussed, various problems worked out, and small surveys made throughout the year, these surveys being plotted in the drawing office.

**ENGINEERING CAMP.**—Attendance in the engineering camp for three weeks is required of all students of the second, third and fourth years, the work carried out being railway, topographic and mining surveying. The survey in each case is made under strict supervision, and the time devoted to the work is at least 10 hours per day, while the instrument men are required in addition to plot maps and profiles of each day's progress. The notes of the survey are divided amongst the students of the fourth year, and from each is required a complete record of the work done, accompanied by blue prints of the whole survey.

**ASTRONOMY.**—Practical Astronomy, lectures and observations with portable instruments, one term, fourth year.

**GEODESY.**—*Lectures in field work, 5 hours, one term* Instruction is given in the fourth year on instruments, reduction of observations, triangulation, measurement of base lines, precise levelling.

*Reference Books:* Johnson, *Surveying*; Raymond, *Surveying*; Chauvenet, *Astronomy*; Doolittle, *Practical Astronomy*; Nautical Almanac.

**RAILWAY AND HIGHWAY ENGINEERING.**—*Lectures 2 hours per week, and field work 6 hours.*—The course in Railway Engineering includes preliminary and location surveys, construction and equipment. In the drawing office are made plans and profiles of the line, designs of various structures, and estimates of cost. Track-work, railway appliances, tunnels and stations are treated both in the lecture room and drawing office. Under Highway Engineering are discussed location, construction and maintenance of roads and pavements, and materials used in their construction; and in the field surveys are made for the location of highway bridges.

*Reference Books:* Searles, *Field Engineering*; Wellington, *Economic Theory of Railway Location*; Tratman, *Track Work*; Byrne, *Highway Construction*.

**MASONRY CONSTRUCTION.**—*Lectures 1 hour per week and Drawing 3 hours.*—Building materials. Concrete Location and foundations of bridge piers. Piles. Caissons. Arches and arch centres. Steel and concrete arches. Detailed drawings are made of a masonry arch and the cost estimated.

*Reference Books:* Baker, *Masonry Construction*; Engineering periodicals.

**HYDRAULICS.**—*Lectures 2 hours per week.*—Principles of hydraulics, including hydrostatics. Laws of flow through orifices, over weirs, in open and closed channels Gauging of streams. Hydraulic motors.

*Reference Books:* Church, *Mechanics of Engineering, Hydraulic Motors*.

**HYDRAULIC ENGINEERING.**—Two years' course. *Lectures 1 hour per week.*—Sanitary engineering, water supply, rivers and canals, harbours and docks The lectures are supplemented by work in

the drawing office and by visits to various engineering works of interest, of which notes and drawings will be required

*Reference Books* : Boulnois, *Municipal and Sanitary Engineer's Handbook* ; Harcourt, *Rivers and Canals, Harbours and Docks* ; Minutes of Proceedings of Inst. of C. E. and Engineering Periodicals.

**APPLIED MECHANICS.**—*Lectures 3 hours per week.*—Determination of the stresses in framed structures. investigation of bending moments and shearing forces. Moments of inertia Kinematics of machines. Dynamics of machines

*Reference Books* : Church, *Mechanics of Engineering* ; Alexander & Thompson, *Applied Mechanics* ; Cotterill, *Applied Mechanics* ; Lanza, *Applied Mechanics* ; Bovey, *Theory of Structures* ; Kennedy, *Mechanics of Machinery*.

**DESIGNING**—*Lectures 3 hours per week, and drawing 10 hours.*—Strength and stiffness of materials. Design of beams and columns. Framework structures Roofs, wooden and metallic. Stresses in bridges. Uniform load. Wheel loads. Bending moment diagrams. Riveted and pin girders, plate girders Continuous girders. Cantilever. Metallic arches with and without hinges. Blockwork structures. Retaining walls. Piers. Buttresses. Masonry arch. Hydrostatic and Geostatic arches. Design from the transformed catenary.

In all examples particular attention is paid to graphical methods, a complete course in graphic statics being included. Students are required to make finished drawings and prepare working drawings.

*Reference Books* : Merriman & Jacoby, *Roofs and Bridges* ; Alexander & Thomson, *Applied Mechanics* ; Dubois, *Framed Structures* ; Fidler, *Bridge Designing* ; Johnson, *Bridge Designing*.



FACULTIES OF ARTS AND SCIENCE.

§ XLVII.—Courses of Instruction.

I.—CLASSICS.

(McLeod Professorship.)

Professor.....HOWARD MURRAY, B. A.

Latin 1.

*Mondays, Wednesdays and Fridays, 10—11 A. M.*

Cicero, *Orations against Catiline*; Vergil, *Aeneid*, Book VI.; \*Cicero, *Pro Lege Manilia*; \*Vergil, *Aeneid*, Book IV. Latin Prose Composition. Exercises in Sight Translation. Roman History to the Battle of Actium.

*Books recommended:* Cicero, *Orations against Catiline*. (Wilkins's, Macmillan, N. Y., 60 cents.) Cicero, *Pro Lege Manilia*. (Wilkins' Macmillan, N. Y., 60 cents), or Cicero, *Selected Orations and Letters*. (Kelsey's, Allyn & Bacon, Boston, \$1.25. This book includes all the speeches to be read by the class, and has the advantage of having the vowel quantities indicated.) Vergil, *Aeneid*, Book VI, (Page's, Macmillan, N. Y., 40 cents). Vergil, *Aeneid*, Book IV. (Stephenson's, Macmillan, N. Y., 40 cents). Bradley's Arnold's *Latin Prose Composition*. Smith's *Smaller History of Rome*, (Harper's, N. Y.) Bennett's *Latin Grammar*, (Allyn & Bacon, Boston, 80 cents), or Allen & Greenough's, *New Latin Grammar*, (Ginn & Co., Boston, \$1.20).

Latin 2.

*Mondays, Wednesdays and Fridays, 11 A. M. 12—M.*

Livy, Book I; Horace, *Odes*, Books I and II; \*Cicero, *Pro Milone*; \*Vergil, *Aeneid*, Book V. Latin Prose Composition. Exercises in Sight Translation. Grecian History to the death of Alexander.

*Books recommended:* Livy, Book I. (Rolfe's [text with indicated quantities] Allyn & Bacon, Boston, 25 cents). Horace, *Odes*, (Page's, Macmillan, each 40 cents). Cicero, *Pro Milone*. (Colson's, Macmillan, 90 cents). Vergil, *Aeneid*, Book V, (Calvert's, Macmillan, 40 cents). Bradley's Arnold's *Latin Prose Composition*. Smith's *Smaller History of Greece*, (Harper's, N. Y.)

Latin 3.

*Mondays and Wednesdays, 12 M.—1 P. M.*

Tacitus, *Histories*, Book I; Horace, *Selected Satires*; \*Tacitus, *Annals*, Book IV; \*Lucretius, Book III. Latin Prose Composition. Exercises in Sight Translation.

*Books recommended:* Tacitus, *Histories*, Books I and II, (Godley's Macmillan, 90 cents). Horace, *Satires and Epistles* (Rolfe's, Allyn & Bacon, Boston, \$1.40). Tacitus, *Annals*, Books I-IV, (Furneaux, Macmillan, \$1.25). Lucretius, Book III (Lee's, Macmillan, 90 cents).

\*For private reading by students seeking First or Second Class Distinction. Pas sages for translation at sight will be set in all examinations.

**Greek 1.**

*Tuesdays and Thursdays, 10—11 A. M.*

Xenophon, *Hellenica*, Books I and II; \*Xenophon, *Cyropaedia*, Book I. Greek Prose Composition. Exercises in Sight Translation.

*Books recommended:* Xenophon, *Hellenica*, Books I and II, (Underhill's, Macmillan, 85 cents) Xenophon, *Cyropaedia*, Book I, (Biggs, Macmillan, 50 cents). Fletcher & Nicholson's *Greek Prose Composition*. Goodwin's *Greek Grammar*, (Ginn & Co., Boston, \$1.50).

**Greek 2.**

*Tuesdays and Thursdays, 11 A. M.—12 M.*

Lucian, *Selected Dialogues*; Homer, *Odyssey*, Book IX; \*Lucian, *Vera Historia*. Greek Prose Composition. Exercises in Sight Translation.

*Books recommended:* Lucian, *Selections*, (Inge & Macnaghten's, Longman's 3s. 6d.) Homer, *Odyssey*, Book IX, (Edward's, Macmillan, 60 cents). Lucian, *Vera Historia*, (Yates's, Bell & Sons, London, 1s. 6d.) Fletcher & Nicholson's *Greek Prose Composition*.

**Greek 3.**

*Tuesdays and Thursdays, 12 M.—1 P. M.*

Demosthenes, *Philippics*, I-III; Euripides, *Medea*; \*Demosthenes, *Olynthiacs*; \*Euripides, *Alcestis*. Greek Prose Composition. Exercises in Sight Translation.

*Books recommended:* Demosthenes, *Philippics*, (Abbott & Matheson's, Clarendon Press, 2s. 6d.) Euripides, *Medea*, (Verrall's, in Macmillan's Classical Series, 60 cents). Demosthenes, *Olynthiacs*, (Sharpley's, Blackwood, London, 1s. 6d.) Euripides, *Alcestis*, (Blakney's, Bell & Sons, 2s.)

**Advanced Class.**

Professor .....	HOWARD MURRAY, B. A.
Lecturers.....	{ J. W. LOGAN, B. A. G. K. BUTLER, M. A.

*Four or five times a week.*

In this class a portion of the Latin and Greek subjects prescribed for the special course in Classics is read, and Prose Composition is regularly practised.

**II.—NEW TESTAMENT GREEK.**

The class and examinations in New Testament Greek, conducted by Professor R. A. FALCONER, B. D., D. Litt., in the Presbyterian Theological College, Halifax, are recognized as qualifying for a degree. Similar classes in other Theological Colleges approved by the Faculty, are also recognized for the same purpose.

\*For private reading by students seeking First or Second Class Distinction.

Passages for translation at sight will be set in all examinations.

*Daily 12.30 P. M.*

The work of this class consists of the interpretation of the Gospels. Lectures are also given on the language of the New Testament, the principles of Textual Criticism, Introduction to the Gospels, and problems arising out of the Gospel narratives.

*Text-books:* Stevens and Burton, *Harmony of the Gospels*, or Huck; *Synopse der drei ersten Evangelien*; Hammond, *Textual Criticism of the New Testament*; Matthew's, *A History of New Testament Times in Palestine*; Simcox, *Language of the New Testament*.

*Books recommended.* F. Blass, *Grammar of N. T. Greek*; Burton, *New Testament, Moods and Tenses*; Nestle, *Textual Criticism of the Greek N. T.*; *Expositor's Greek Testament*, vol. I., Swete; *Gospel of St. Mark*, Plummer; *Gospel of St. Luke*, Westcott; *Gospel of St. John*, Plummer; *Gospel of St. John*.

## III.—HEBREW.

The class and examinations in Hebrew, conducted by Professor JOHN CURRIE, D. D., in the Halifax Theological College, are recognized as qualifying for a degree. Similar classes in other Theological Colleges approved by the Faculty, are also recognized for the same purpose.

*Daily 8.45 to 9.40 A. M.*

The aim of the course is, by a thorough drill in paradigms, exercises in reading and writing, to impart a fair knowledge of inflection and syntax, and the ability to read at sight easy parts of the Hebrew Scriptures.

*Text-Book:* Davidson's *Introductory Hebrew Grammar, with Progressive Exercises in Reading and Writing*, T. & T. Clark, Edinburgh, 7s. 6d).

*Books recommended.* Gesenius' *Hebrew Grammar*, revised edition. (Mitchell, Bradley & Woodruff, Boston, \$3) Green's *Hebrew Grammar*, new edition, unabridged (Wiley and Sons, New York, \$3). Harper's *Introductory Hebrew Method and Manual*, latest edition. (American Publication Society of Hebrew, Chicago). Robinson's *Gesenius' Hebrew Lexicon*, (Houghton, Mifflin & Co., Boston, \$6).

## IV.—MODERN LANGUAGES.

(McLeod Professorship.)

Professor..... JAMES LIECHT, M. A.

**French I.**

*Tuesdays and Thursdays, 3—4 P. M.*

Macmillan's *Progressive French Reader*, II year, (Fasnacht) Molière; *Le Bourgeois Gentilhomme*, (Macmillan & Co.). Eugène Scribe; *Valérie* (Macmillan & Co.). Exercises in Grammar and Composition, (Fasnacht's First Course by Macmillan & Co.).

Additional for a First Class position: Saintine, *Picciola*, first ten chapters; or Octave Feuillet, *Le Roman d'un Jeune Homme Pauvre*; first fifteen chapters.

*Text-books:* Brachets' *Public School Elementary French Grammar*. Other text-books required will be announced at the opening of the Session.

**French**

*Tuesdays and Thursdays, 2—3 P. M.*

For 1904-05. Racine; *Athalie*. Molière; *Les Précieuses Ridicules* (Macmillan & Co.) Labiche et Martin; *Le Voyage de Monsieur Perrichon* (American Book Co.). Sight-reading: a comedy by Scribe. Translation from English writers. Exercise in Syntax. Translation of unspecified passages from modern authors. French composition.

For 1905-06.—Racine; *Esther*. Molière; *L'Avare*. Sight-reading: a comedy by Scribe. (Macmillan & Co.). Translation from English writers. Exercises in Syntax. Translation of unspecified passages from modern authors. French Composition.

Molière; *Le Misanthrope*, (Macmillan & Co.), and either Madame de Staël; *L'Allemagne*, first twenty chapters, or Pierre Cœur; *L'Âme de Beethoven* (Macmillan & Co.), are prescribed for private reading to candidates for a First-Class position.

*Text-books:* As in First Class. Saintsbury, *Primer of French Literature*.

**French 3.**

*Tuesdays and Thursdays, 9—10 A. M.*

For 1904-05 Molière; *Les Femmes Savantes*. Racine; *Iphigénie*. Corneille; *Le Cid* (Macmillan & Co.). Sight-reading: a comedy by Scribe, or *Les Français en voyage*, by Jetta T. Wolff (Edward Arnold, London). Translation from English writers. French Composition, 2nd course, by Eugène Fasnacht (Macmillan & Co.). Translation of unspecified passages from modern authors.

Molière; *Tartufe*, Acts I and II, (Macmillan & Co.), and either Victor Hugo; *Les Travailleurs de la Mer*, Chapters I to V (incl.) (Rivington's), or Madame de Staël; *Corinne ou l'Italie*, livres I to V (incl.) are prescribed for private reading to candidate for a First Class position.

**French 4.**

For 1905-06. Corneille; *Horace*. Racine; *Phèdre*. Sight-reading: a comedy by Scribe. Translations from English writers. French composition, 2nd course, by Eugène Fasnacht (Macmillan & Co.). Translation of unspecified passages from modern authors.

Molière: *L'Ecole des Maris* and *L'Ecole des Femmes*, (I and II Acts of each).

*Text-books:* As in Second Class. Masson: *Littérature française*.

**French 5.**

*Lecturer*..... PROFESSOR W. F. P. STOCKLEY, M. A.

*Two hours a week.*

Walter; *Classic French Writers* (Holt & Co.) Berthon; *Specimens of Modern French Prose* (Macmillan). Berthon; *Specimens of Modern French Verse* (Macmillan). Fontaine; *Historiettes Modernes*, I, (Heath & Co.) Taine; *Les Origines de la France Contemporaine* (Selections, ed. Edgren; Holt & Co)

Sainte Beuve, *Selected Essays* (Ed. Effinger, Ginn & Co) Brunetière's *Manual of French Literature*. Plass, *Selections of French Idioms*, (Macmillan), Composition. Unseen translation.

For reference : Doumic, *Historie de la littérature française*, (1 vol.) Longhaye, *La littérature française au XIX Siecle*, (2 vols.). L'Homme, *La comédie d'aujourd'hui*, (1 vol. Perrin). Brunetière, *Le Roman Naturaliste*. Henry James, *French Poets and Novelists*.

For Distinction : Madame de Staël, *L'Allemagne*, (1 vol. Garnier). Victor Hugo, *Les Orientales*, *Les Feuilles d'Automne*, *Les Chants du Crêpuscule*, (1 vol. Hachette). Chateaubriand, *Le Gène du Christianisme*, (2 vols. Didot).

#### German 1.

*Mondays, Wednesdays and Fridays, 3—4 P. M.*

Buchheim : *German Reader*, Part II. Groller ; *Inkognito*, (American Book Co.). Schiller ; *Wilhelm Tell*, (Macmillan & Co.). Additional for a First Class position : Helene Stökl ; *Unter dem Christbaum*, (D. C. Heath & Co.). Exercises in Grammar and Composition. Elementary German Prose Composition, by E. S. Buchheim, (Clarendon Press.)

*Text-books* : Joynes-Meissner's German Grammar, (D. C. Heath & Co.). Other text-books required will be announced at the opening of the Session.

#### German 2.

*Mondays, Wednesdays and Fridays, 2—3 P. M.*

For 1904-05. Goethe ; *Egmont*. Schiller ; *Maria Stuart*, (Macmillan & Co.). Sight-reading from Helene Stökl ; *Unter dem Christbaum*, (D. C. Heath & Co.), or Groller, *Inkognito*. Translation from English writers. Original compositions. Translations of unspecified passages from modern authors. Bernhards' *Course in German Composition* (Ginn & Co.).

For 1905-06. Goethe ; *Hermann und Dorothea*, (Clarendon Press). Lessing ; *Minna von Barnhelm*, (Macmillan & Co.). Sight-reading from Helene Stökl ; *Unter dem Christbaum*, (D. C. Heath & Co.), or Groller, *Inkognito*. Translations from English writers. Original compositions. Translations of unspecified passages from modern authors.

Schiller ; *Die Jungfrau von Orleans*, Prolog and Act I, and either Heine ; *Die Harzreise* (Macmillan & Co.), or *Freudvoll und Leidvoll* (Ed. Dr. W. Bernhardt), (American Book Co.), are prescribed for private reading to candidates for a First Class position.

*Text-books* : As in First Class. Critical outline of the Literature of Germany by Alb. Selss, Ph. D. (Longmans, Green & Co.).

#### German 3.

*Mondays, Wednesdays and Fridays, 9—10 A. M.*

1904-05. Lessing ; *Nathan der Weise* (Macmillan & Co.). Goethe ; *Götz von Berlichingen* (Macmillan & Co.). Prose composition. Translation of unspecified passages from modern authors. Sight-reading from Prehn's *Journalistic German* (American Book Co.).

1905-06 Lessing ; *Minna von Barnhelm* (Macmillan & Co.). Gustav Freytag ; *Die Journalisten* (Macmillan & Co.) Goethe ; *Iphigenie auf Tauris*. Prose Composition. Translation of unspecified passages from modern authors. Sight-reading from Prehn, *Journalistic German* (American Book Co.).

Schiller ; *Wallensteins Tod*, Act I, 5th Scene ; Act II, 2nd and 3rd Scenes ; Act III, 18th Scene ; (George Bell & Sons) and either Goethe ; *Faust. Prolog in Himmel*, and first three scenes of Part I, (by Jane Lee (Macmillan & Co ), or Heine ; *Harzreise* (Macmillan & Co ) are prescribed for private reading to candidates for a First Class position.

*Text-books*: As in Second Class. Bernhardt's *Hauptfakta aus der Geschichte der deutschen Litteratur* (American Book Co.),

#### German 4.

*Twice a week.*

Schiller ; *Lyrische Gedichte*. Goethe ; *Faust*, Part I, by Jane Lee : (Macmillan & Co.) Prose composition Translation of unspecified passages from modern authors. Selss's German Literature.

Private reading for a First Class position : Schiller ; *Wallensteins Lager*, and Lessing ; *Sara Sampson*, or Schiller ; *Geisterseher*.

#### German 5.

*Twice a week.*

The subjects studied in this class will be those prescribed for the special course of English and German (§ viii (8)). The course will extend over two years.

1904-05 Middle High German : Grammar (Wright's Middle High German Primer). Selections from Wackernagel ; *Kleineres Altdeutsches Lesebuch*. Selections from authors of the 18th century. Prose composition.

1905-06. Middle High German : Grammar (Paul's Grammar). Selections from Wackernagel ; *Kleineres Altdeutsches Lesebuch*. Selections from Swiss and Plattdeutsch dialect literature. Selections from authors of 16th and 17th centuries. Prose composition.

Other text-books will be announced at the opening of the Session.

### V.—ENGLISH LANGUAGE AND LITERATURE.

(*George Munro Professorship.*)

Professor ..... ARCHIBALD MACMECHAN, PH. D.

The course in English is mainly literary ; the method pursued is historical. The different periods are studied in the representative works of the period ; and in all cases actual acquaintance with the texts precedes criticism upon them. This part of the course is intended to furnish the student with an outline picture of English literature from Chaucer to Tennyson. The work for "class distinction" is meant to broaden the knowledge of more ambitious students. The essential facts of Historical English Grammar are taught by means of lectures in the Second Year. Special stress is laid upon composition. Practice is set before theory ; the various exercises are corrected and preserved ; the writing of "reports" forms part of this work. *The prompt and satisfactory performance of the written work is a condition of examination.* In the Advanced Classes, the aim of the instruction is to acquaint the student with the grammar of Old and Middle English, and to widen his knowledge of Elizabethan literature.

**English 1 (A).**

*Tuesdays and Thursdays, 12—1 P. M.*

COMPOSITION.—Christmas Term; imitative exercises in the construction of narrative and descriptive paragraphs. Spring Term; ten narrative and descriptive themes based on personal experience, and work read in class.

LITERATURE.—Eighteenth Century. Prose. Addison; *Papers Contributed to "The Spectator."* Johnson; *Life of Pope.* (Macaulay; *Samuel Johnson*). Poetry. Dryden; *MacFlecknoe, St. Cecilia's Day, Alexander's Feast.* Pope; *Rape of the Lock.* Gray; *Elegy in a Country Church-yard* Goldsmith; *Traveller, Deserted Village.* Burns; *Two Dogs, Cotter's Saturday Night.*

For reference: Gosse, *History of Eighteenth Century Literature.*

Candidates for Class Distinction will be examined in these additional works which are not read in class. Dryden; *Absalom and Achitophel.* Pope; *Essay on Man.* Johnson; *Lives of Dryden, Addison and Gray.*

Two reports on private reading, assigned by the instructor, are required from each student.

*Books recommended.* Hale; *Longer English Poems* (containing all the poetry read in class: Addison, ed. T. Arnold; Clarendon Press Series; Johnson; *Six Chief Lives*; ed. M. Arnold.

PARALLEL READING.—As a preparation for this course, the student is recommended to read the following works:—Thackeray; *English Humorists, Congreve and Addison, The History of Henry Esmond,* (bk. ii, cap. xi, at least). Macaulay, *The Comic Dramatists of the Restoration, Addison.*

**English 2 (B).**

*Mondays, Wednesdays and Fridays, 12—1 P. M.*

COMPOSITION.—Lectures on the Principles of Narration, Description, and Exposition. Twenty Expository themes, based chiefly upon the work read in class.

LITERATURE.—Elizabethan. Shakspeare; *Henry IV., A Midsummer Night's Dream, King Lear.* Milton; *Comus, L'Allegro, Il Penseroso, Lycidas, Sonnets, Paradise Lost, Bks I, II.* Lectures.

ENGLISH LANGUAGE.—A short course of Lectures on the History of the English Language, at the end of the Spring Term.

For reference. Sydney Lee; *A Life of William Shakspeare*; Dowden; *Shakspeare Primer.* Saintsbury; *History of Elizabethan Literature.*

A report on private reading assigned by the instructor, is required from each student. Candidates for Distinction are required to present a second report.

Candidates for Class Distinction will be examined in the following plays, which are not read in class:—*Richard II, The Tempest, Hamlet.*

PARALLEL READING.—As a preparation for this course, the student is recommended to read the following works: Kingsley; *Westward Ho!* Scott; *Kenilworth.* Hentzner; *Travels in England.* Harrison; *Description of England.* (Scott Library, W. Scott). Macaulay; *Milton.*

**English 3 (C).**

*Tuesdays and Thursdays, 10—11 A. M.*

LITERATURE.—Middle English and Pre-Shakespearean. Chaucer: *Prologue, Knight's Tale, Nun's Priest's Tale*. Sweet's *Middle English Primer II* Spenser; *Færie Queene*, bks. I, II. Marlowe; *Dr. Faustus*. Lectures.

History of Literature. Pollard; *Chaucer Primer*. For reference. Lounsbury; Ten Brink. Morley; *English Writers*, V.

For Distinction. Chaucer; *The Prioress's Tale, Sir Topas, The Monk's Tale, The Squire's Tale*.

**English 4 (D).**

(Not given in 1904-05.)

*Tuesdays and Thursdays, 4—5 P. M.*

LITERATURE.—Nineteenth Century. Scott; *Old Mortality, Marmion*. Byron; *Poems*, selected and edited by Matthew Arnold. Wordsworth; ed. Dowden (*Athenæum Press Series*). Tennyson; *The Lady of Shalott, Oenone, Lotus-Eaters, A Dream of Fair Women, Morte d' Arthur, Dora, Sir Galahad, The Lord of Burleigh, Ulysses*. Browning; *Andrea del Sarto, Epistle of Karshish, Memorabilia, Evelyn Hope, A Toccata of Galuppi's, The Statute and the Bust, In a Balcony, The Last Ride Together*. Ruskin; *Sesame and Lillies*: ed. Root, (Henry Holt & Co). Carlyle; *Sartor Resartus*: ed. MacMechan, (*Athenæum Press Series*).

History of Literature. Saintsbury; *History of Nineteenth Century Literature*. Hereford; *Age of Wordsworth*. Oliphant; *Literary History of England*.

For Distinction. A thesis on a subject assigned by the instructor.

This subject may be assigned at the end of the previous session and completed during the summer vacation. It should in any case be selected at the beginning of the session in which the student intends to present it, and must embody the results of an original literary investigation. The following are the titles of representative theses which have been accepted: *Chatterton, A Study in Style; The Relation of "Tristram Shandy" to "Anatomy of Melancholy"; Tennyson's Treatment of Colour in "The Idylls of the King"; "Alastor," edited with Introduction and Notes*. The Thesis must be written on special thesis paper and bound. A copy must be deposited in the College Library.

**English 5 (E). (Advanced).**

(Not given in 1904-05.)

*Mondays and Fridays, 9—10 A. M.*

OLD ENGLISH.—Bright; *Anglo-Saxon Reader*. Sievers. O. E. Grammar, trans. Cook. Sight translation from easy texts.

**English 6 (F). (Advanced).**

ELIZABETHAN DRAMA.—Marlowe; *Tamburlaine, Edward II., The Jew of Malta*. Greene; *Friar Bacon and Friar Bungay*. Jonson; *The Alchemist, Every Man in His Humour*. Beaumont and Fletcher;



*Philaster, The Knight of the Burning Pestle.* Massinger; *A New Way to Pay Old Debts.* Webster; *The Duchess of Malffi.* Shakspeare; the tragedies, *Two Noble Kinsmen.*

This course is conducted as a Seminary.

*Books recommended:* History of Literature: Ten Brink, Saintsbury, Brooke. Texts: Clarendon Press. "Mermaid," "Temple Dramatists," Thayer; "Best Elizabethan Plays."

## VI.—BIBLICAL LITERATURE.

Lecturer.....PROF. R. A. FALCONER, D. LITT.

Tuesdays, 3—4 P. M., and Fridays, 4—5 P. M.

This course extends over two sessions, and covers the whole Bible. Although students are advised to take the entire course, the work of any one session will be accepted as an elective in the Third or Fourth Year. During session 1904-05, the *Second Part* of the course will be the subject of study.

### OLD TESTAMENT

*First Part.* Introduction The Record of Revelation. Outline of structure. The Pentateuch, its sources and contents. The Law. The Religious Institutions of Israel. The earlier Histories. The Monarchy. The earlier Prophets, including Amos, Hosea, Isaiah and Micah. The Captivity of the Northern Kingdom.

*Second Part.* Recapitulation. The later Histories. The Prophets subsequent to 700 B. C. The Exile and Restoration. The Poetical Books and other writings. The Messianic Elements in the Old Testament. The Canon.

### NEW TESTAMENT.

*First Part.* Literary characteristics of the Gospels. Synoptic Problem. Johannine question. Reading from the four Gospels outlining the Life of Jesus Christ. A comparison, both as to form and import, of the discourses and parables of the Synoptics with the teaching of the Gospel according to John.

*Second Part.* The Literature of the Apostolic Age, exclusive of the Gospel. Books to represent the historical movements, especially as set forth in Acts, and different types of the thought of the Apostolic Age, will be studied in brief outline.

Text-book for O. T.; Kent; *History of the Hebrew People.* G. A. Smith; *Isaiah, Book of the Twelve Prophets.*

Text-books for N. T. Stevens and Burton; *Harmony of the Gospels.* Mathew; *History of N. T. Times in Palestine.* Burton and Mathew; *Constructive Studies in the Life of Christ.* McClymont; *New Testament and its Works.*

For Class Distinction a knowledge of the following books will be required: Sanday; *Bampton Lectures* W. Robertson Smith; *Prophets of Israel.* Ramsay; *St. Paul the Traveller and Roman Citizen.* McCurdy; *History, Prophecy and the Monuments.*

Recommended for reading. Kent; *History of the Hebrew People.* W. Robertson Smith; *Old Testament in the Jewish Church.* Robertson; *Early Religion of Israel.* Moulton; *Literary Study of the Bible.* Driver; *Introduction to the Literature of the O. T. The Message of the Bible;* edited by Sanders & Kent. Bartlett; *Apostolic Age.* Articles in Hastings' Dictionary of the Bible:—*Jesus Christ,* by Sanday; *Gospels,* by Stanton; *New Testament Canon,* by Stanton; also the separate articles on each of the books of the N. T.

## VII.—HISTORY AND POLITICAL ECONOMY.

(George Munro Professorship).

Professor ..... PRESIDENT FORREST.

**History 1.***Mondays, Wednesdays and Fridays, 11 A. M.—12 M.*

Mediaeval History and Modern History to 1555.

The class work will be conducted by means of lectures and examinations on prescribed reading. A detailed syllabus with references and passages prescribed for reading will be given to students on the opening of the class.

Candidates for First Class Distinction will be examined on Hallam's Middle Ages, Bryce's Holy Roman Empire, and introductory sections of Robertson's Charles V.

*Books recommended.* Gibbon; *Decline and Fall of the Roman Empire.* Hallam; *Middle Ages.* Bryce; *Holy Roman Empire.* Irving; *Mahomet and His Successors.* Guizot; *History of Civilization.* Michaud; *History of the Crusades.* Robertson; *Charles V.* Stubbs; *Constitutional History of England.* Labberton; *Historical Atlas.*

**History 2.***Tuesdays and Thursdays, 11 A. M.—12 M.*

Modern History from 1555.

The class work will be conducted by means of lectures and examinations on prescribed reading. In the lectures, books of reference will be named and select portions specified for reading.

Disputed points will be marked out for special study and students required to examine authorities and weigh conflicting opinions, and thus learn to study history critically for themselves.

Candidates for First Class Distinction will be examined on Green and Guizot, and a few chapters to be specified in other work.

*Books recommended.* Green; *England, Vol. IV.* Guizot; *France (Mason's Abridgment).* Menzel; *Germany.* Motley; *Dutch Republic.* Bancroft; *United States* McMaster; *History of the People of the United States.* Parkman; *France and England in North America.* Labberton; *Historical Atlas.*

**History 3.***Once a Week.*

English History from 1603 to 1688.

The work of the class will be conducted by means of lectures and examinations on reading prescribed from Clarendon, Gardiner, Green, Hallam, Ranke, Lingard and other authorities.

This class is intended especially for undergraduates taking the Special course in English and English History.

**Political Economy 1.***Tuesdays and Thursdays, 10—11 A. M.*

The work of this class will be conducted by means of lectures and examinations on prescribed reading.

The lectures will generally follow the order of arrangements of Mill's Principles of Political Economy. 1.—THE NATURE OF WEALTH. Analysis of fundamental conceptions of Wealth, &c. 2.—PRODUCTION OF WEALTH: Labor, Capital, Population, and their relations to each other. 3.—DISTRIBUTION OF WEALTH: Wages, Profits, Rent, Socialism, Labor Unions, Land Tenure. 4.—EXCHANGE: Value, Money, Banking. 5.—RELATIONS OF GOVERNMENT TO TRADE AND INDUSTRY: Tariffs, Taxation.

Particular attention will be given to the problems of the day—Protection and Free Trade, Trade Unions, Combines, Bimetallism. Each student is required to read the whole of Mill's *Principles*, together with prescribed passages from leading economists and current literature on the subjects. Weekly examinations will be held on the prescribed reading.

Candidates for First Class Distinction will be examined on additional work, which will be announced at the beginning of the Session.

*Text-books:* Mill; *Principles of Political Economy.*

#### Political Economy 2.

*Twice a Week.*

The work of this class will consist of lectures, entering into the Principles of Political Economy, more fully than in the ordinary class, with examinations on reading prescribed in the works of leading writers on the subject.

### VIII—CONSTITUTIONAL HISTORY AND LAW.

The classes in Constitutional Law and Constitutional History, conducted by Professor Weldon in the Faculty of Law, and the examinations conducted in these subjects by the Faculty of Law, are recognized as qualifying for a degree, provided students taking the Class in Constitutional History as an elective in Arts have also passed an examination in Bagehot, *English Constitution.*

### IX.—CONTRACTS.

The class in Contracts, conducted by Professor Russell in the Faculty of Law, and the examinations conducted in this subject by the Faculty of Law, are recognized as qualifying for a degree.

### X.—PHILOSOPHY.

(George Munro Professorship.)

Professor.....WALTER C. MURRAY, M. A., LL. D.

#### Philosophy 1.

*Tuesdays and Thursdays, 12—1 P.M., Wednesdays, 4—5 P.M.*

The work of this class will consist of two courses of lectures, one on Logic, and one on Psychology, with essays, discussions, and oral examinations.

The work in the course on Logic will be selected so as to afford the best possible mental training. In the Psychological course, experiments will be introduced as much as possible to supply a basis for the theory and for the purpose of illustration. Especial attention will also be given to the connection between Psychology and Educational methods.

*Text-books.* Creighton, *Introductory Logic*; Titchener, *Primer of Psychology*.

*Books recommended.* Mill, *Logic*; Titchener, *Outlines of Psychology*; James, *Psychology*.

#### Philosophy 2.

*Mondays and Wednesdays, 10—11 A. M.*

For 1905-06. This course of lectures is intended to serve as an introduction to Metaphysics.

*Books recommended:* Tyndall, *Fragments*, Vol. I; Huxley, *Essays*; Haeckel, *Monism, Riddle of the Universe*; James, *Psychology*, Vol. I; Clifford, *Essays*; Spencer, *First Principles*; Darwin, *Origin of Species*; Helmholtz, *Popular Lectures Ser. I*; Martineau, *Essay Vol. IV*; Watson, *Outline of Philosophy*; Paulsen, *Introduction to Philosophy*; Balfour, *Foundations of Belief*; Ward, *Naturalism and Agnosticism*; Mackenzie, *Metaphysics*.

#### Philosophy 3.

*Mondays and Wednesdays, 10—11 A. M.*

For 1904-05. After a preliminary sketch of the principal problems of Metaphysics, the development of Modern Philosophy from Locke will be studied in Locke's *Essay*, Berkeley's *Principles of Knowledge*, and *Siris*, Hume's *Enquiry*, Reid's *Inquiry*, Kant's *Prolegomena*, and Watson's Extracts from Mill's Writings.

*Books:* Seth (A), *Scottish Philosophy*; Locke, *Essay*; Berkeley, *Selections* by Fraser; Hume *Treatise and Enquiry*; Reid, *Works* (ed. by Hamilton), and *Inquiry* (Sneath's Edition); Kant, *Prolegomena*, translated by Mahaffy & Bernard; Wenley, *Outlines of Kant's Critique*; Mill, *Selections* (Watson); Douglas, *John Stuart Mill*; Blackwood's Philosophical Classics; Hoffding's or Falckenberg's or Weber's *History of Philosophy*; Open Court Editions of *Berkeley, Hume and Kant*.

#### Philosophy 4.

*Mondays and Wednesdays, 3—4 P. M.*

For 1904-05. In this course an introductory sketch of the development of Greek Philosophy from Thales is followed by a critical study of Plato's *Apology*, *Crito*, *Phaedo*, *Republic*, and *Theatetus*; and Aristotle's *Ethics* (Muirhead's Edition).

*Books recommended:* Ferrier, *Lectures on Early Greek Philosophy*; Church's *Translation of Apology, Crito and Phaedo* (Golden Treasury Series); Davis and Vaughan's *Translation of Republic*, (G. T. S.) Dyde's *Translation of Theatetus*; Aristotle's *Ethics* (The Scott Library or Peters's Translation); Zeller, *Greek Philosophy*; Burnet, *Early Greek Philosophy*; Bosanquet, *Companion to Plato's Republic*; Nettleship, *Philosophical Lectures and Remains*; Essay in *Hellenica*; Muirhead, *Chapters from Aristotle's Ethics*; Jowett's *Translation of Plato's Dialogues*; Pater, *Plato and Platonism* Wallace, *Epicureanism*; Hegel, *History of Philosophy*.

**Philosophy 5**

*Mondays and Wednesdays, 3—4 P. M.*

For 1905-06. This course of lectures attempts a systematic presentation of the Principles of Moral Philosophy.

*Books recommended:* Seth, *Ethical Principles*; Muirhead, *Elements of Ethics*; Green, *Prolegomena to Ethics*; Dewey, *Outline of Ethics, Study of Ethics*; Mackenzie, *Manual of Ethics*; Mill, *Utilitarianism*; Spencer, *Data of Ethics*; Paulsen, *Ethics*; Watson, *Hedonistic Theories*; Wundt, *Ethics*.

**Philosophy 6.**

*Tuesdays and Thursdays, 3—4 P. M.*

For 1905-06. The subject of this course is Kant's Philosophy. The *Prolegomena, Critiques of Pure Reason, of Practical Reason, and of Judgment*, will be studied.

*Translations recommended:* Watson's *Selections*; Mahaffy and Bernard, *Prolegomena*; Max Muller, *Critique of Pure Reason*; Abbott, *Theory of Ethics*; Bernard, *Critique of Judgment*; Kant, *Prolegomena* (Open Court Edition).

*Commentaries and Expositions Recommended:* Stirling, *Text-Book to Kant*; Wallace, *Kant*; Fischer, *Kant*; Caird, *Critical Philosophy*; Watson, *Kant and his English Critics*; and Comte Mill and Spencer or *An Outline of Philosophy*. Adamson, *Philosophy of Kant*; Mahaffy and Bernard, *Kritik of Pure Reason Defended and Explained*; Green, *Philosophical Works, Vol. II*; Paulsen, *Kant*.

**Philosophy 7.**

*One Hour a Week.*

For 1904-05. The subject of this course will be Advanced Psychology. The discussions will be based on Ward's articles on *Psychology*, in the Encyclopaedia Britannica (10th edit.) and James' *Principles of Psychology*.

**Philosophy 8.**

*Lecturer*.....PROFESSOR R. MAGILL, PH. D.

For 1904-05. The subject of this course is Philosophy in Germany since Kant. Ueberweg's and Windelband's Histories of Philosophy are recommended for reference.

**XI—EDUCATION.**

*Lecturer*.....PROFESSOR WALTER MURRAY.

**Education 1.**

*Two Hours a Week.*

For 1904-05. This course in the Science of Education opens with a few lectures on Psychology, following James' *Talks to Teachers*. This is followed by a sketch of mental development from infancy to maturity. Then the leading problems of Educational Science—the End, Means, Methods, Agencies and Appliances are considered.

*Books:* James, *Talks to Teachers*; Drummond, *The Child*; Chamberlain, *The Child*; Forbush, *The Boy Problem*; Fitch, *Lectures on Teaching*; Adams, *Primer on Teaching*; Laurie, *Institutes of Education*.

**Education 2.***Two hours a week.*

For 1905-06. This course in the History of Education attempts to trace not only Educational theories, but also Educational practice and organisation in Greece, Rome and Modern Europe. Special attention will be given to Secondary Education in Germany and to Education in the British Empire and the United States.

*Books:* Bosanquet, *Education in the Republic*; Burnet, *Aristotle on Education*; Ascham, *Schoolmaster*; Milton *Tractate*; Locke, *Thoughts*; Spencer, *Education*; Thring, *Theory and Practice of Teaching*; Quick, *Educational Reformers*; Russell, *German Secondary Schools*; Sadler's Reports.

**Education 3.**

This class consists of a course in Practice of Teaching under the Supervision of Mr. Alexander McKay; School Management and School Law by Principal Kennedy; History by Principal Miller.

**(A.) PRACTICE OF TEACHING.**

*Lecturer* ..... SUPERVISOR A. MCKAY.

At least 75 hours must be spent in observation, discussion, and actual practice in good schools under supervision.

**(B.) SCHOOL MANAGEMENT AND SCHOOL LAW.**

*Lecturer* ..... PRINCIPAL W. T. KENNEDY.

Six or eight lectures are given on School Management and the School Law of Nova Scotia.

**(C.) HISTORY OF EDUCATION.**

*Lecturer* ..... PRINCIPAL G. J. MILLER.

This course traces Educational theory and practice from earliest times in non-European countries and in Europe during the Middle Ages.

*Books:* Williams, *Modern Education*; Quick, *Educational Reformers*; Painter, *History of Education*; McMurry, *General Method*; Baldwin, *School Management*; N. S. School Law.

**XII.—MATHEMATICS.**

*Professor* ..... DANIEL A. MURRAY, PH. D.

*Mathematics 1* is prescribed for regular first year students in Arts and Science. *Mathematics 2* is elective for students who have taken *Mathematics 1*. Each of the *Advanced Classes* is elective for any student who has passed in *Mathematics 2*.

**Mathematics 1.**

*Mondays, Wednesdays and Fridays, 10—11 A. M., Tuesdays and Thursdays, 11 A. M.—12 M.*

The work of this class includes :

ALGEBRA :—Indices, Theory of Quadratic Equations, Irrational quantities. Quantities involving  $\sqrt{-1}$ . Proportion, Variation, Progressions, Permutations, and Combinations, Binomial Theorem,

revised. Properties of Logarithms. Interest and Annuities. Horner's method of approximating to the roots of an equation. Elementary discussions on Functions, Limits, and Series. Selected propositions in the Theory of Equations. Graphical representation of Functions, and plotting of Loci of equations. Elements of Determinants, with applications to elimination and the solution of simultaneous equations.

Indeterminate coefficients. Partial Fractions. Simple exercises in Probability, if there be time for these topics.

**GEOMETRY**:—Euclid, Book VI revised, and Book XI. Theorems and problems, with drawing exercises, on Harmonic Ranges and Pencils, Poles and Polars, and Transversals. Geometry of the Sphere. Elementary propositions in the geometrical treatment of the Parabola and the Ellipse.

**TRIGONOMETRY**:—The solution of plane triangles. Measurement of heights and distances. Elementary angular analysis.

*Books recommended*: Hall & Knight, *Higher Algebra* (Macmillan & Co.), Hall and Steven edition of *Euclid* (Macmillan & Co.), Holgate, *Geometry* (Macmillan and Co.), Cockshott and Walter, *Geometrical Treatment of Conics* (Macmillan and Co.), Murray, *Plane Trigonometry and Tables* (Longmans, Green & Co.).

#### Mathematics 2.

*Mondays, Wednesdays and Fridays 11 A. M.—12 M., Tuesdays and Thursdays, 10—11 A. M.*

An elementary course in ANALYTIC GEOMETRY and DIFFERENTIAL AND INTEGRAL CALCULUS.

This course is intended for those who wish to become familiar with the fundamental principles of analytic geometry and the infinitesimal calculus, and to acquire the ability to apply these principles easily and accurately in the solution of simple practical problems. The course provides mathematical preparation sufficient for beginning the study of engineering, physics and other mathematical sciences. It is recommended as the minimum mathematical equipment for those intending to teach mathematics in the high schools.

SPHERICAL TRIGONOMETRY is prescribed for private reading for those who are trying for Distinction in Mathematics 2.

*Books recommended*: Tanner and Allen, *Analytic Geometry* (American Book Co.) Murray, *Infinitesimal Calculus* (Longmans, Green & Co.), Murray, *Spherical Trigonometry*, (Longmans Green & Co.)

#### Advanced Classes.

The courses in these classes are intended for those who wish to take mathematical work in the third or the fourth year in the ordinary course in Arts or Science. They are also intended to serve as courses introductory to the study of higher mathematics, for those who may afterwards attend the graduate schools in the larger universities. Candidates for Honours in Pure and Applied Mathematics are required to take four of these courses in class.

N. B.—Two of these courses will be given during each year. The same course will not be given in two consecutive years.

(3) **ADVANCED CALCULUS**.—Topics in the treatises of Todhunter, Williamson, Harnack, Lamb, and Gibson. (Three hours weekly first half year.) This course will be given in 1904-05.

(4.) PLANE AND SOLID ANALYTIC GEOMETRY.—Based on the treatises of Salmon and C. Smith. (Three hours weekly second half year.) This course will be given in 1904-05.

(5.) DIFFERENTIAL EQUATIONS.—Murray's *Differential Equations*, with supplementary lectures. (Two hours weekly throughout the year.)

(6.) ALGEBRA.—Topics in Determinants, Theory of Equations, Quantics, Invariants, with lectures on Series and Functions of a real variable. (Two hours weekly throughout the year.)

(7.) PROJECTIVE GEOMETRY.—(Two hours weekly throughout the year.)

#### Astronomy.

Lecturer ..... PROFESSOR D. A. MURRAY, PH. D.

(This course will not be given in 1905-06).

This is a general course in which the leading facts and principles of descriptive astronomy are presented. It is elective for regular undergraduates in the third and fourth years; it may also be taken by general students who have the requisite mathematical equipment, namely, an elementary knowledge of algebra, geometry and trigonometry. Part of the course will be given by the Professor of Physics.

*Book recommended; Young, General Astronomy.*

### XIII.—PHYSICS.

(George Munro Professorskip.)

Professor ..... STEPHEN M. DIXON, M. A.

#### Physics I.

*Mondays, 4—5 P. M., Tuesdays and Thursdays, 11 A. M.—12 M.*

The work of this Class is treated in two Courses of Lectures. In the first a rapid survey of the whole subject of Experimental Physics is taken, the subjects treated being: Dynamics, Properties of Solids and Fluids, Sound Heat, Electricity and Magnetism, and Light, and other forms of Radiation. In the second the subject of Dynamics is discussed more fully. Both courses are fully illustrated by experiments, and in the second special attention is paid to the solution of problems, all students being required to hand in papers for correction and criticism.

Members of the Class who aim at passing merely, will be examined in those subjects only which are fully discussed in class. Those who aim at Distinction will be expected to give considerable attention to Dynamics, and to consult the works recommended by the Professor on all subjects that may be referred to in class.

*Books recommended: Minchin, Students' Dynamics; Garnett, Elementary Dynamics; Magnus, Hydrostatics; Cumming, Mechanics Treated Experimentally; Jones, Heat, Light and Sound; Cumming, Electricity Treated Experimentally; Daniell, Principles of Physics; Deschanel, Natural Philosophy; Watson, Physics; Anthony and Bracket, Physics; Nichols, Physics; Glazebrook, Heat and Light; Glazebrook, Electricity.*



**Physics 2 and 3.**

*Mondays and Wednesdays, 10—11 A. M.*

The work of this Class extends over two years. It is assumed that students who take it have studied Differential and Integral Calculus in Mathematics 2, and have also taken Physics 1 and Practical Physics 6.

Students who aim at passing merely, will be examined in those portions only of the subjects which are discussed in class. Those who aim at distinction are expected not only to acquire considerable power in applying principles in the solution of problems, but also to study privately portions of the subjects not fully treated in class.

The subjects to be treated during the next two years are as follows :

2.—1904-05 Light and Sound The Wave Theory of Light will form a special course for students aiming at Distinction.

3 —1905-06. Properties of Matter, Heat, Electricity and Magnetism. The Kinetic Theory of Gases will form a Special Course for students aiming at Distinction.

*Books recommended:* Poynting and Thomson, *Sound*; Lord Rayleigh, *Treatise on Sound*; Preston, *Theory of Light*; Glazebrook, *Physical Optics*; Meyer and Bayne, *Kinetic Theory of Gases*; Maxwell, *Theory of Heat*; Preston *Theory of Heat*; Tait, *Heat*; Wright, *Heat*; Edser, *Heat for Advanced Students*; Buckingham, *Sketch of Thermodynamics*; Holmes, *Steam Engine*; Ewing, *Steam Engine and other Heat Engines*; Thompson, *Lessons on Electricity and Magnetism*; Thomson, *Elements of Electricity and Magnetism*; Maxwell, *Electricity and Magnetism*; Gray, *Absolute Measurements in Electricity and Magnetism*; Thompson, *Dynamo-Electric Machinery*.

**Physics 4.**

*Mondays and Wednesdays, 11 A. M.—12 M*

In this class a short course in Mathematical Physics will be given. It is intended for Candidates for Honours in Pure and Applied Mathematics and in Mathematics and Physics.

It is assumed that students in this class have a knowledge of Analytical Geometry and Differential and Integral Calculus.

*Books recommended:* MacGregor, *Kinematics and Dynamics*; Williamson and Tarleton, *Dynamics*; Todhunter, *Analytical Statics*; Routh, *Rigid Dynamics*; Minchin, *Statics*; Greenhill, *Hydrostatics*; Besant, *Hydro-mechanics*.

**Physics 5.**

*At least once a week.*

The subjects studied are (a) physical experimental methods and the elimination of errors, this section of the class work being conducted mainly by private reading, under the Professor's supervision, of original papers by Faraday, Joule, and Kelvin; (b) the treatment of observations, including graphical methods and the method of least squares, and the influence of errors of observation on results; (c) the relation of theory to experimental research illustrated by sketches of one or more of the following:—the kinetic theory of gases, the theory of solutions and of electrolysis, the wave theory of light.

*Books of reference:* Faraday's Experimental Researches in Electricity, Vol. I. (Quaritch); Joule's Scientific Papers, Vol. I. (Taylor & Francis); Lord Kelvin's Mathematical and Physical Papers, Vol. II. (Camb. Univ. Press); Merriman's Text-Book of Last Squares (John Wiley & Sons); Johnson's Theory of Errors and Method of Least Squares (J. Wiley & Sons); Holman's Precision of Measurements (J. Wiley & Sons); Meyer's Kinetic Theory of Gases, tr. Baynes (Longmans & Co.); Whetham's Solution and Electrolysis (Camb. Univ. Press); Lehfeldt's Text-book of Physical Chemistry (Arnold); Preston's Theory of Light.

**Physics 6.**

*Laboratory work at least five hours a week.*

The work of the class will consist of the experimental investigation of simple physical laws, constants such as density, specific heat, etc., being determined incidentally. Students are required to prepare reports on the investigations made, describing in outline the methods used, and discussing in detail the results obtained and their degree of precision.

**Physics 7.**

*Five hours a week.*

This class is intended for Engineering Students who have already completed the work of Physics 3. The work consists of an extensive series of measurements in Magnetism and Electricity. The Laboratory has been recently supplied with special direct and alternating current circuits and a dark-room has been arranged for photometric work. As in Physics 3, students will be required to hand in written reports of their experiments.

**OUTLINE OF THE COURSE.**—Magnetic fields. Elements of Earth's Magnetism. Magnetic qualities of iron. Use and Calibration of Galvanometers. Voltmeters. Measurements of Resistance, Electromotive force, Capacity, Self-Induction, Power. Management of Storage Batteries. Photometry.

*Books of reference:* Those specified in Physics 3, together with Stewart & Gee's *Elementary Practical Physics*, and Ayrton's *Practical Electricity*.

**Physics 8.**

*Laboratory work at least five hours a week.*

The work of this class will consist of the investigation of physical laws of a more complex kind than in Physics 6, and a greater degree of precision will be expected in the determinations made. Students who show sufficient ability will be allowed to conduct new investigations, provided they do not use for that purpose a large portion of the prescribed time.

Members of the class are required to prepare reports on the investigations conducted, to attend the lectures of the Advanced Experimental Physics Class on physical measurement generally, as described, *e. g.*, in Glazebrook & Shaw's *Practical Physics*, and to study discussions of the methods they may use in the works recommended by the Professor.

*Books of reference:* Those specified above, together with Stewart & Gee's *Elementary Practical Physics* (Macmillan); Ayrton's *Practical Electricity* (Cassell); Nichols' *Laboratory Manual of Physics and Applied Electricity* (Macmillan); Ostwald's *Physico-chemical Measurements* (Macmillan); Wiedemann's, *Physikalisches Prakticum*; and Threlfall's *Laboratory Arts* (Macmillan).

**Physics**

*Laboratory at least ten hours a week.*

The work will consist of new investigations conducted by students who show sufficient ability.

Members of the class will be required to acquaint themselves with the literature of the subject in which their investigations lie, to prepare critical reports on those portions of it with which their work is more immediately concerned, and to prepare full reports on the methods and results of their own observations.

Reports which are of sufficient value will be communicated to the N. S. Institute of Science. If, though the subject may have been suggested by the Professor, the investigation has been concluded practically independently by the student, the report will be communicated in his name. If the student has been assisted by the Professor to such an extent that the investigation has not been conducted practically independently by himself, the report will be communicated as by the Professor and the student jointly.

Only a very limited number of students can be admitted to the class.

#### XIV.—CHEMISTRY.

(*McLeod Professorship.*)

Professor..... E. MACKAY, PH. D.

##### Chemistry 1.

*Mondays, Wednesdays and Fridays, 9—10 A. M.*

The lectures in this class deal in an elementary way with the principles of general chemistry. At first the preparation and the characteristic properties of common acids and bases are studied, and then the chemistry of fire, of water and of air, the order of historical development being followed as nearly as possible. When some acquaintance with chemical facts has thus been gained, the fundamental laws of combination are taken up and the atomic theory and chemical formulæ are introduced. Chlorine, nitrogen, carbon and some of their typical compounds are then studied, and thereafter the principal remaining elements, each in connection with the group of elements in the periodic system to which it belongs. Examinations, oral or written, are held fortnightly, and occasional written exercises are required.

Students in Arts aiming at Distinction and all students in Science are required to devote at least three hours a week to laboratory work. The laboratory work is designed to make the student familiar with ordinary laboratory operations and to lead him to solve simple problems in chemistry by experiment. Several common inorganic substances are prepared and studied; simple quantitative experiments are performed; and some time is devoted to elementary work in qualitative analysis.

*Books recommended:* Remsen's *Introduction to the Study of Chemistry*, 6th edition (H. Holt & Co.) for both class and laboratory work.

##### Chemistry 2.

*Tuesdays and Thursdays, 9—10 A. M.*

The lectures in this class are for the first few weeks devoted to a fuller treatment of chemical theory and the chemistry of the metals than is given in Chemistry 1. The remainder of the year is devoted to organic chemistry.

Students aiming at Distinction are required to devote at least three hours a week to laboratory work. This will include a fuller course in qualitative analysis than is given in Chemistry 1, and, in addition, the preparation of pure laboratory reagents and of typical inorganic and organic substances.

Students in Mining Engineering are required to take, instead of organic chemistry, additional reading in inorganic chemistry and additional laboratory work, which will include a few exercises in quantitative analysis.

*Books recommended:* Roscoe & Harden's *Inorganic Chemistry for Advanced Students* (Macmillan & Co.); Noyes' *Qualitative Chemical Analysis*. Additional for mining students: Remsen's *Inorganic Chemistry Advanced Course* (H. Holt & Co.); Newth's *Inorganic Chemistry* (Longman & Co.). In organic chemistry; Remsen's *Compounds of Carbon*, 4th edition, (D. C. Heath & Co.).

### Chemistry 3.

*One hour a week.*

The subjects of study in this class are (a) History of chemical theory; (b) Special topics in inorganic and organic chemistry in connection with the reading prescribed for the Special Course in Chemistry and Chemical Physics.

### Chemistry 4.

*At least ten hours a week.*

The work of this class consists of quantitative analysis and the preparation of inorganic substances.

One hour a week is taken for the discussion of analytical methods, and at least ten hours a week must be devoted to laboratory work. The preparations and analyses prescribed are designed to illustrate typical methods. The quantitative exercises carried out are the following: preparation of standard solutions of acids and alkalies, estimation of chlorine, sulphur, phosphorus, silicon, silver, copper, iron, manganese, calcium and magnesium, volumetric as well as gravimetric methods being employed wherever applicable.

Candidates for Distinction are required to undertake additional work selected from the following: estimation of iodine, nitrogen in nitrates, carbon in carbonates, potassium, chromium, aluminium, zinc, and lead, analysis of iron and steel, analysis of ores, water analysis.

*Books recommended:* Renouf's *Inorganic Preparations* (Johns Hopkins Press); Clowes and Coleman's *Quantitative Analysis* (J. & A. Churchill); Talbot's *Quantitative Analysis* (Macmillan & Co.); Blair's *Chemical Analysis of Iron* (J. B. Lippincott & Co.); Mason's *Examination of Water* (Wiley & Son).

### Chemistry 5.

*At least ten hours a week.*

The work of this class consists of the preparation and analysis of organic compounds. At least ten hours a week must be devoted to laboratory work. A sufficient number of organic compounds are prepared to illustrate the most important reactions and methods of working. Quantitative determinations are carried out of carbon, hydrogen, oxygen and nitrogen.

Students are permitted to substitute for the analytical work an equivalent amount of work in other branches of analysis, or in physiological chemistry.

Candidates for Distinction are required either to do additional work of the kind outlined above or to carry out a short original investigation.

*Books recommended:* Remsen's *Compounds of Carbon* (Macmillan & Co.); Cohen's *Practical Organic Chemistry for Advanced Students* (Macmillan & Co.); Clowes and Coleman's *Quantitative Analysis* (J. & A. Churchill).

#### Chemistry 6.

The work of the class will consist either (*a*) of original investigation conducted by students who have shown themselves qualified to undertake it, or (*b*) of work in analytical or synthetical chemistry in continuation of the work of either Chemistry 4 or 5.

#### CHEMICAL LABORATORY.

The general laboratory accommodates about eighty students, the quantitative laboratory about sixteen. A reference library is placed in the laboratory for students doing advanced work.

Laboratory students are allowed the use of all the more inexpensive reagents. They are required to provide themselves with the most expensive reagents, as alcohol and ether, and they are charged with the value of apparatus they have broken or injured.

All members of practical classes are required to keep a detailed record of their laboratory work. The character of this record is a factor in determining the standing of a student in the class lists.

The general laboratory is open to students in Arts on Mondays and Wednesdays from 3 to 6 p. m. The quantitative laboratory is open daily, except Saturdays, from 9 a. m. to 6 p. m.

### XV.—GEOLOGY.

Assistant Professor.....J. EDMUND WOODMAN, A. M., S.D.

#### Geology 1.

*Lectures, laboratory and field work, reports, and collateral reading, Tu and Th., 12 M.—1 P. M.; laboratory, Mon. and Wed., 9—11 A. M.; field work on Saturdays (mornings or whole days) throughout the autumn, and thereafter whenever practicable; library work replacing field trips during the winter, Fri. 3—6 P. M.*

This course is prerequisite to the other courses in the subject, and concerns itself with a general survey of the science. Chemistry 1 or its equivalent must have been passed, and Physics 1 is recommended. No text-books are required; but a course of reading is followed, embracing citations from general works and original papers, and practice is given in abstracting geological literature. The excursions deal with existing phenomena, and with the structural features of the region. No member of the class will be allowed to pass, who has not satisfactorily completed the field and laboratory work. Students aiming at Distinction will be assigned special tasks.

#### Geology 2.

*Lectures, field, library and laboratory work. Mon and Fri., 12 M.—1 P. M.; Thurs. 10—11 A. M.; field work during the open season, one day or two half-days; library and laboratory work during the winter.*

The field studies are in the nature of advanced geological surveying and problem work in dynamical history, and its accomplishment

is essential to completion of the course. In the lectures and reading the geology of Canada is used as a framework, upon which are laid studies of many of the large general problems of genesis and history, organic and inorganic. A short period of laboratory work is upon paleontology. During the second term, a thesis must be prepared, embodying the results of library work upon original papers, and in some instances this may be interwoven with the results of the autumn field studies. Candidates for Distinction will be given special additional problems.

#### Geology 3.

*Lectures, field and library work. Tu., 3-4 P. M.; Wed., 12 M.-1 P. M. Field and library work by appointment.*

This course concerns itself with the geology of economic deposits. The lectures are divided into two parts, devoted to metalliferous and non-metalliferous substances, respectively, with special reference to the economic geology of Nova Scotia.

#### Geology 4.

Course 4 occupies six weeks at the close of the college year, the time being spent in visiting and studying selected areas, chiefly economic, in various parts of Nova Scotia. It is open to any who have passed a satisfactory grade in Geology 1, and counts as a single course toward a degree. All the time will be spent in field work, and before Oct 15th a report upon all the work or parts selected by the instructor, must be handed in to him, together with the field notebook. The course offers an exceptional opportunity to become acquainted with the geology of the province.

Data regarding programme, cost, etc., may be obtained from the instructor.

#### Geology 5.

Course 5 is designed to afford opportunity for original research. No lectures are held, their place being taken by conferences, at which members will report upon the progress of their field work and reading and discuss, with the instructor, problems connected with or growing out of it.

Only students who have attained a high grade in Geology 2, 3 or 4 will be admitted. One subject will be chosen for each member, to be followed throughout the year; and miscellaneous study will not be accepted. The course will require a minimum of twelve hours a week of work.

Opportunity will be afforded the student to publish the result of any work which adds to existing knowledge, especially in problems presented by the geology of adjacent regions.

### XVI.—MINERALOGY.

*Assistant Professor.....J. E. WOODMAN, S. D.*

#### Mineralogy 1.

*Lectures and laboratory work, Tu. and Fri., 10-11 A. M.; laboratory, Mon. and Wed., (and occasionally Friday), 4-6 P. M.*

The course opens with a study of crystallography, by means of models, diagrams, and crystal specimens. Optical mineralogy is briefly treated, and physical mineralogy in somewhat greater

detail. Special collections in the latter branch are used to illustrate the different physical characters. A short time is spent in introductory blow-pipe practice, tests for the more important elements being made, and the remainder of the course is concerned with determinative mineralogy. Blowpipe tests are used; but practice is given especially in identifying species by the more easily applied methods, as with the knife, lens, streak plate, magnet and acid. The object is to familiarize the student with those minerals which are of most geological and economic importance, and about 130 species are studied in the laboratory. The lectures cover a wider field, including more species, and a study of the chemical relationship of minerals.

*Text-books:* Dana, E. S., *Text-book of Mineralogy*, 1902. Brush, G. J. and Penfield, S. L., *Determinative Mineralogy and Blowpipe Analysis*.

## XVII.—BIOLOGY.

*Lecturer*.....

*Tuesdays, 2—4 P. M., Saturdays, 11 A. M.—1 P. M.*

**BOTANY.**—The course in Botany will have special reference to the following subjects: Protoplasm and Plant-cells, the Tissue and Tissue Systems of Plants, Morphology of the Plant-body, Plant Physiology, the Principles of Classification and the Laws of Distinction, the Protophyta (Schizophyceae), the Phycophyta (Chlorophyceae and Phaeophyceae), the Carpophyta (Rhodophyceae, Ascomycetæ and Basidiomycetæ specially), the Bryophyta (Mosses and Liverworts), the Pteridophyta (Ferns, Horsetails and Club-mosses), the Anthophyta (specially the Coniferae, Gramineae, Orchidaceae, Liliaceae, Utiaceae, Labiatae, Compositae, Umbelliferae, Rosaceae, Cruciferae, Leguminosae, Ranunculaceae). The Morphology and life history (the anatomy, histology and development) of at least two common or representative species of each group of plants above named, in minute detail.

General attention will be given to the native flora of the Province, with special notice of foreign as well as native species of interest from economic, medicinal or injurious properties.

The preliminary study of Botany as indicated in Grade IX of the Public School Course, and especially the formation of a local collection of plants, even if unnamed and unclassified, will be an advantage to any student entering upon the course.

Practical instruction will be given in the collecting, drying and mounting of specimens, the use of the microscope, the preparing of microscope sections, and the general dissection of plants. The use in class of a number of microscopes will be granted the students under the care and direction of the Lecturer; but a hand lens, glass slides, cover glasses, scalpels and other apparatus or books necessary for each student, should be supplied by each for himself. Collections, notes, class-work and drawings of students will be estimated for incorporation into final class standing.

Students aiming at Distinction are required, in addition, during the summer vacation to study practically the flora or a section of the flora of some district, to present a collection of the said flora properly classified and mounted, and to pass an oral and practical examination on the same at the beginning of their next session.

*Text-book:* Bessey, *Essentials of Botany*.

Manuals for the practical work prescribed for the summer will be recommended by the Lecturer.

For reference special text-books will be recommended in each subdivision of the subject during the course of the lectures and demonstrations.

ZOOLOGY.—The course in Zoology will consist of lectures supplemented by practical work.

The following subjects will be treated in the lectures:—Organic and Inorganic bodies. Life, Vital Action, etc. Differences between plants and animals. Morphology. Physiology. Differences between Animals. Specialisation of Function. Morphological Type. Von Baer's Law of Development. Origin of Species Homology. Analogy. Reproduction. Distribution in time and space. Evolution. Classification. Also the general characters of the several sub-kingdoms will be treated of as fully as possible.

The practical part of the course will consist of dissections by students themselves, and demonstrations, microscopic, etc.

The object of the class will be to give such a comprehensive idea of the Animal Kingdom, as will form a good basis for further prosecution of the study of Biology or Comparative Anatomy and Physiology.

*Text-Books:* Parker and Haswell, *Students' Manual*. *Books of reference:* Huxley, *Anatomy of Vertebrates and Invertebrates*, 2 vols.; Claus and Sedgewick, *Text-book of Zoology*, 2 vols.; also Parker and Haswell's text-book, 2 vols.

### XVIII.—METALLURGY.

*Assistant Professor*.....FREDERIC H. SEXTON, S. B.

*Lecturer in Assaying*..... F. H. MASON, F. C. S.

#### Metallurgy 1.—Assaying.

*Tuesdays and Thursdays, 2—6 P. M., for Second Term.*

The course consists of six lectures by Mr. Mason and of laboratory work for the remainder of the term. The scope of the work is restricted as far as possible, without limiting a thorough general training, to methods which are applicable to the economic minerals of Nova Scotia. The aim in most of the wet methods of analysis is to acquaint the student, after a training in exact gravimetric and volumetric work in quantitative analysis, with quick commercial processes such as are practically employed in industrial laboratories.

As many of the following assays are carried out as time permits:

**Dry Methods:**—The fire assay of lead ores. Scorification and crucible assay for gold and silver, with reference to special methods for the treatment of Nova Scotia gold ores carrying arsenopyrite. Special processes for the determination of gold and silver in speisses, mattes, and concentrates. Crucible assay for copper. Fire assay of base bullion and gold and silver bullion. Determination of the evaporating power of coal.

**Wet Methods:**—Volumetric analysis for silver in silver bullion; for lead, copper, arsenic, antimony, manganese and zinc in their ores. Rapid methods for the determination of sulphur in ores and mattes. Special methods for analyzing blast furnace slags. Approximate analysis for the moisture, volatile matter fixed carbon, and ash in coal and coke. Determination of sulphur in coal and coke. Analysis of refractory materials.



**Metallurgy 2.—Non-ferrous Metallurgy.**

*Mondays and Wednesdays, 11—12 A. M., Tuesdays, 3—4 P. M., first term; Fridays, 3—4 P. M., second term.*

This course consists entirely of lectures and reading. The metals treated are the ones which occur in the largest economic deposits of Nova Scotia, viz., copper, lead, antimony, arsenic, and gold. Much more stress is laid upon copper than upon lead, and one whole term's work is devoted exclusively to the metallurgy of gold.

Introduction.—A brief general consideration of metallurgical appliances and operations. Furnaces;—Shaft, pot, retort, crucible, blast, hearth, and reverberatory furnaces. Processes;—Calcination. "Roasting." Smelting. Bessemerizing. Lixiviation. Electrolysis. Amalgamation. Cupellation. Liquation.

*Copper.*—Properties. Important chemical properties of copper compounds. Ores of copper. Heap roasting. Roasting ores in shaft furnaces. Gerstenhöfer, Malitra, and Spence furnaces. Roasting in long-bedded reverberatory and mechanical reverberatory furnaces. O'Harra, Pearce's Turret, Brown Horseshoe, Bruckner Cylinder, White, and Oxland furnaces.

Chemistry of copper smelting.—Smelting calcined ore in the water jacketed blast furnace. Copper blast furnace slags. Calcination of matte. Smelting of roasted matte for coarse copper. Reverberatory smelting of roasted ore and matte. Welsh process of smelting. Comparison of German and English processes of copper smelting. Anglo-German Process. Refining of coarse copper in the reverberatory furnace. The copper Bessemer process. Pyritic smelting.

Electrolytic refining of copper.—Leaching methods for the extraction of copper from its ores—lixiviation, precipitation, refining. Electro-metallurgical methods for the extraction of copper from ores and mattes.

*Lead.*—Properties. Important chemical reactions of lead compounds. Lead ores.

Air-reduction process.—Carinthian, English, and Tarnowitz processes. Air reduction process in the ore hearth.

Roasting and reduction process.—Roasting of lead ores in shaft and reverberatory furnaces. Chemistry of lead blast furnace smelting. Smelting roasted ores in American water jacketed blast furnace. Arents siphon tap. Lead slags. Flue dust. Treatment of lead speiss and matte. Iron reduction process.

Refining of lead.—Liquation process. Desilverization of work lead; Pattinson, Rozan, and Parkes processes. English and German methods of cupelling work lead.

*Antimony.*—Properties. Important chemical reactions of antimony compounds. Ores of antimony. Liquation of ores for the production of crude antimony. Extraction of metallic antimony. Roasting of antimony glance. Volatilizing roasting. Reduction of antimony tetroxide in pot, shaft, and reverberatory furnaces. Refining of metallic antimony. Wet and electrolytic methods for the extraction of antimony.

*Arsenic.*—Important chemical reactions of arsenic compounds. Extraction of arsenic. Manufacture of arsenious oxide. Manufacture of realgar and orpiment.

*Gold.*—Properties. Important chemical reactions of gold compounds. Occurrence and distribution of gold.

Placer Mining.—Shallow deposits. Rough appliances for washing gravel. Sluicing. River mining. Siberian methods. Beach mining.

Deep placer deposits. Nature and origin. Methods of working. Economic conditions.

Stamp battery.—A very brief consideration of the forms of stamps, because this is taken up fully in Mining 2. Amalgamation. Copper plates. Galvanic action in amalgamation. Designolle process. Loss of Gold. Non-amalgamable gold. A summary of various methods of concentration. Stamp battery practice in California, Colorado, Australia, New Zealand, Transvaal and Nova Scotia.

Chlorination.—Preparation of ore.—Crushing and roasting.

Vat process.—Construction of vats Charging. Generation of chlorine. Impregnation. Chemistry of Chlorination. Leaching. Precipitation.

Barrel process—Mears process. Thies process. Precipitation of gold. Modern patent processes of chlorination.

Examples of practical chlorination. Bromination.

Cyanide process.—Method of working. Precipitation of gold. Clean-up. Treatment of slimes. Treatment of sulphide telluride ores. Patent processes. Examples of cyanide practice. Chemistry of cyanide process.

Refining and parting of Gold Bullion.—Refining. Parting processes. Parting by sulphur and sulphide of antimony. Nitric acid processes. Parting by sulphuric acid. Miller's chlorine process. Moebius process.

*Books for reading:* Louis Schnabel, *Handbook of Metallurgy*; H. O. Hofman, *Metallurgy of Lead*; E. D. Peters, *Modern Copper Smelting*; T. K. Rose, *Metallurgy of Gold*.

### **Metallurgy 3—Metallurgy of Iron and Steel.**

*Mondays and Wednesdays, 2--3 P. M.*

This course consists chiefly of lectures and reading. Special attention will be paid to the subject in the summer school.

The blast furnace.—Ores, fuels and fluxes. Details of furnaces. Chemistry of iron blast furnace smelting. Slags. Thermal equation. Consideration of conditions influencing the iron produced. Blast. Utilization of gases. Cast iron.

Wrought iron.—Direct and indirect methods of production. Charcoal hearth process. Puddling.

Steel—Classification of iron products. Different kinds of special steels. Crucible process. High carbon steels.

Bessemer process. Acid Bessemer.—Details of construction method of working, calorific equation, recarburization. Basic Bessemer.—Outline of process, lining, chemistry of the basic process, calorific equation, recarburization.

Open hearth process. Fuel. Regeneration. Thermal equation. Types of furnaces. Acid open hearth.—Chemistry of acid open hearth, pig and ore process, slags. Basic open hearth.—Chemistry of basic open hearth, basic hearth, slags, recarburization.

Character of iron and steel. Segregation and influence of hot and cold working. Heat treatment and influence of foreign elements on iron and steel. Physical tests of different steels. Micro-structure of iron and steel. Welding, working, tempering, and casting of steel.

*Books for reading:*—H. H. Campbell, *The Manufacture and Properties of Iron and Steel*; H. O. Hofman, *Notes on Iron and Steel*; H. M. Howe, *Metallurgy of Steel*.

#### Metallurgy 4—Metallurgical Laboratory.

This course consists entirely of laboratory work. By means of small tests, the student duplicates practical mill and metallurgical methods and gets a first-hand acquaintance with the processes which he has heretofore seen for the most part in books. In order that the student may get practice in simple scientific research, it will be attempted to solve such mining and metallurgical problems which may crop out in the Province as the time and equipment will allow.

Table concentration, jigging, and water classification tests will be made on lead, copper, and gold ores. Stamp mill runs will be made under varying conditions to test the efficiency of the ordinary Nova Scotia stamp battery practice. The laboratory will be provided with furnaces for reverberatory roasting and smelting. Graded crushing and differential sieving tests will be made on different ores and the tabulated results interpreted.

The following laboratory tests will be required:—Plattner and barrel process of chlorination; cyanide process; free-milling test upon a gold ore; chloridizing roast. In all these tests the student will be shown how to test for a method by having but one variable at a time in the conditions of the tests. He will be required to assay the original ores and all products, and to hand in correct, neat reports made out according to approved forms.

#### Metallurgy 5—Metallography.

This course consists chiefly of laboratory work with a few lectures, the nature of which is to be determined later. The course is entirely voluntary and is intended more for research work than for regular class instruction. The nature of the experiments would be somewhat as follows:—

Calibration of a Le Chatelier pyrometer. Production and examination of different binary alloys. Examination of selected specimens of steels. The study of the heat-treatment of some special steel.

### XIX. MINING.

Assistant Professor . . . . . FREDERIC H. SEXTON, S. B.  
 Lecturer on Coal-Mining . . . . . H. S. POOLE, M. A., D. SC., F. R. S. C.  
 Special Lecturers . . . . . (E. GILPIN, JR., A. M., LL. D., F. R. S. C.  
   C. ARCHIBALD, M. E.  
   J. G. S. HUDSON, M. E.)

#### Mining 1.—General Mining.

Tuesdays and Fridays, 9—10 A. M.

This course is chiefly composed of lectures and reading with illustrative practical problems wherever these are possible. A synopsis of the course is as follows:

Ore Deposits.—A brief summary of the modes of occurrence of economic minerals.

Prospecting.—Surface indications. General natural conditions and legislation to be complied with in staking claims. General rules for setting monuments. Practical formulæ for valuing deposits and claims. General form of a report upon a new deposit or a mine recently opened. Early development of mines. Prospecting for coal, placer deposits, etc. Special rules for prospecting for gold deposits, the location of pay streaks, etc., which are peculiarly applicable to Nova Scotia gold deposits.

Boring. - By rotation—diamond drills. By percussion—with rods, with rope, American method, Mather and Plat system. Surveying boreholes.

Breaking Ground.—By hand ; by machinery. Air compressors. Principles of indicator diagrams. Wet compressors. Dry compressors (Rand and Ingersoll-Sergeant machines). Friction of air in pipes. Comparison of steam, compressed air, and electricity for use as power in mines. Percussive drills (Rand, Ingersoll-Sergeant, McKiernan, Darlington). Methods for attacking rock in quarrying, sinking and drifting. Square cut and centre cut systems. Machine mining (pick, chain-cutter, cutter-bar, and longwall machines). Comparison of hand vs. machine mining.

Blasting.—Compressed air. Hydraulic cartridges. Explosives. Classes of explosives with advantages and relative power of each. Charging and firing. Practical rules for direction of hole, weight of charge, etc. Fuses. Detonators. Electric firing.

Supporting excavations.—Selection of timbers. Formulæ for dimensions and strength of timber. Construction of frames, etc., for different kinds of walls, roofs and floors. Timbering of levels, gangways, gob-roads, etc. Square sets. Use of iron and masonry instead of timber.

Tunneling.—Method of progress and cost in hard and soft rock. English, Belgian, German, Austrian and American methods for soft ground. Spilling, poling, Durieux method. Iron shield and caissons. Masonry. Construction of arches.

Sinking.—Shaft sinking as applied to metalliferous mines. Mode of sinking and supporting. Hollenback shaft. Circular and square shafts. Tubbing in running ground. Kind-Chaudron process. Haase's system. California method. Poetsch freezing process.

Methods of mining.—Methods applied to metalliferous mines. Overhand and underhand stoping. Winning of ore from highly inclined veins. Methods pursued in ramified veins. Applications of coal methods to thick ore deposits. Special methods.

Hoisting.—Man hoist. Hoisting by horse and whim. Steam hoisting. Boilers. Engines. Brakes. Double and conical drums. Modes of equalizing work on engine. Hoisting derricks. Overwinding. Loading and unloading. Kibbles, buckets, skips and gunboats. Automatic dumps and brakes. Cages. Safety appliances. Ropes.

Haulage.—Underground haulage.—Details of equipment. Gauge and grade. Automatic devices to prevent runaways. Friction. Consumption of power. Man and animal trammig. Locomotives, smokeless, pneumatic, and electric. Gravity systems. Tail rope systems. Endless cable systems.

Surface haulage.—Burro. Aerial tramways. Bleichert, Hallidie and Huson types. Locomotive.

Pumping.—Exclusion of water. Sump. Drainage. Bailing. Suction pumps. Hydraulic rams. Single acting lift pumps. Cook, Wormer, and Bull pumps. Single action force pumps. Cornish pumps. Double acting pumps. Rotary pumps. Electric pumps.

Ventilation.—A brief consideration of ventilation as usually applied to metalliferous mines. Laws regarding the ventilation of mines. Gases encountered in metal mines. Friction of air in passages. Consumption of air by combustion, blasting, etc. Different modes of measuring air. Ventilation paradox. Natural ventilation. Artificial methods of ventilation in metal mines.

Lighting.—Use of candles, torches, lamps, gas lights, and electric lights in metal mines.

Condition of miner.—Methods of ascent and descent in mines. Employment. Accidents. Explosions, fall of ground, shaft accidents, and fatalities by machinery.

*Books for reading:* C. LeNeve Foster, *Ore and Stone Mining*; Ihseng, *Manual of Mining*.

## Mining 2. Ore Dressing and Concentration.

*Tuesday and Friday, 11—12 A. M.*

The work of the course is chiefly lectures and reading with Saturday excursions to mills within easy reach. Following is a synopsis according to the classification of the subject by Prof. R. H. Richards.

*Crushing.*—Preliminary breaking. Breaking in the mine. Blake breakers. Dodge breakers. Spindle or gyrating breakers.

Rolls.—Principle of crushing by rolls. Details of different types. Speed, angle of nip, capacity, friction and power. Graded crushing.

Stamps.—Steam stamps, details, capacity, power, and comparison with other stamps. Tremain steam stamp. Gravity stamps—principle details, feeding arrangements, height of discharge, number and height of drop, weight of stamps, water, advantages and disadvantages.

Pulverizers.—Amalgamating pans. Buhrstone. Clean-up barrels. Schranz, Huntington, and Griffin mills.

Laws of crushing.—Resistance of stone to crushing. Power required for crushing. Comparison of types of crushing machines.

*Ore Concentration*—Preliminary washers.—Trough washers. Log washers. Wash trommels. Washing pans. Hydraulic giants.

Sizing screens.—Stationary screens. Riddles. Vibrating grizzlies. Details, driving mechanism, power, and capacity of trommels. Comparison of trommels and riddles. Theory of screen sizing. Tests of mill work.

Classifiers.—Principle of action. Spigots. Trough classifiers. Deep pocket classifiers. Tubular hydraulic classifiers. Box classifiers. Surface current and whole current box classifiers. Distribution tanks. Settling tanks. Work of classifiers. Theory of free settling in water.

Hand picking.—Comparison of hand picking in the mine, in the rock-house, and in the mill. Picking tables.

Jigs.—Movable sieve hand and power jigs. Fixed sieve jigs Harz and Collom jigs. Details of jigs. Method of running jigs. Bottom bed. Skimming. Automatic discharges. Disposal of concentrates. Removal of tailings. Rules for the management of jigs. Capacity. Power. Life. Limits of sizes jigged. Theory of hindered settling. Tubular classifier tests. Pulsion jig tests. Munroe's tests. Suction. Hoppe's tests. Tests on mixed sizes. General conclusions. Investigations in mills.

Fine sand and sluice concentrators.—Side shake, end shake, and gyrating vanners. Operation and capacity of vanners. Vanner testing. Principle of vanner separation. Side bump tables. Wilfley table. Other tables with side jerk and riffled surfaces. End bump tables. Buddles. Experiments on film sizing. Riffles. Kieves.

Amalgamation.—Mercury amalgams. Outside amalgamated plates. Proportions of gold and silver in different amalgams. Distribution and absorption of amalgams. Mercury wells, riffles, and traps. Amalgamators. Cleaning, retorting, and melting amalgams. Care and purification of mercury. Losses of mercury.

Miscellaneous processes of separation. Magnetic separation. Magnetic concentration of iron ores. Magnetic concentration applied to ores with weakly magnetic constituents. Pneumatic concentration. Separation by centrifugal force, decrepitation, disintegration followed by screening or settling, weathering, and adhesion. Oil concentration.

Accessory Apparatus.—Bins. Receiving floors. Samplers. Automatic feeders. Distributors. Conveyors. Elevators. Sand wheels. Pumps. Launderers. Unwaterers. Driers.

Mill processes and management. A more or less detailed consideration of typical mills in actual stable operation which are treating gold, copper, lead, zinc, and iron ores.

Milling.—Location of mills and mill site. Plant. Power and power transmission. Design and arrangement of machines. General provision and care of mills. Costs. Accounts. Testing for a process. Regular testing of mill machines.

*Books for reading:* R. H. Richards, *Ore Dressing*; Henry Louis, *Handbook of Gold Milling*; T. A. Rickard, *Stamp Milling of Gold Ores*; Lock, *Gold Milling*.

### Mining 3.—Coal Mining.

*Monday and Wednesday, 11—12, for one term.*

The work of the course consists chiefly of lectures by Dr. Poole, and reading. The lectures refer especially to Nova Scotia practice, and to the practical side of coal mining, rather than the theoretical side.

Occurrence and composition of coal. Special consideration of faulting and the carboniferous deposits in Nova Scotia.

Breaking ground.—Coal cutting by hand and by machines. Blasting in dusty and fiery mines.

Sinking.—Vertical and inclined shafts. Location and size of shaft. Operation of sinking. Lining of shafts. Lighting and ventilation of shafts.

Methods of working.—Bord and pillar method. Longwall method. Double stall method. Working of thick seams in South Staffordshire, Pennsylvania, France, and other places. Development and prevention of spontaneous combustion.

Hoisting.—Pit frames. Pulleys. Skips and cages. Ropes. Drums. Brakes. Safety appliances. Different systems of hoisting. Fencing and signalling.

Ventilation.—Special stress will be laid upon this portion of the subject. Gases. Coal-dust. Theory of ventilation. Mechanical ventilation. Distribution of the air current. Formulae for splitting. Stoppings. Doors. Regulating doors. Air crossings. Losses of air in circulation. Measurement of air currents.

Lighting.—Naked lamps. Safety lamps. Modern types of safety lamps. Oil, wicks, and glasses. Inspection of lamps and workings. Delicate indicators.

Surface workings.—Bank heads. Surface tramming.

Preparation of coal for the market.—Tipplers. Screens. Belts. Revolving Tables. Loading chutes. Typical illustrations of practice. Coal washing. Dry coal screening. Briquetting.

*Books for reading:* Hughes, *A Text-Book of Coal Mining*; W. Gallo-way, *Lectures on Mining*.

#### **Mining 4.—Field Work in Mining Operations and Geology.**

The session of this class will be held through six weeks of May and June, the work being continuous. In 1904 the class will meet on Tuesday, May 3rd, at Bear River, and disband on Friday, June 10th.

The class will first make a detailed structural study of a limited area, to gain independence in field work. The remainder of the time will be spent in visiting mining districts in various parts of the Province, and studying the economic conditions and operations. The studies will, at various times, cover coal, gold, iron, and some of the minor classes of economic deposits. Methods of mining, milling and metallurgical treatment will be considered, and special attention will be paid to constructive criticism of mining and milling practice, and to the relations between these and the geology of the district. Each student must hand to the Professor of Mining, on or before October 15th in his fourth year, a detailed written report of the mining studies made in this class, together with his field note book and any maps or sketches which he may have, bearing upon the problems.

In 1903 the class made its structural studies at Arisaig; a detailed examination of the Sydney coal field, and an examination of the old rocks of the Mira river and the district between George's river and the Little Bras d'Or lake; a study of parts of the Pictou coal fields; of the Londonderry iron deposits and a section of the rocks from the Bay of Fundy to the carboniferous north of the Cobequid mountains; and a detailed survey of about fifteen miles of the Joggins shore. Mining methods were examined in the Sydney field and at Londonderry.

In 1904 the structural study will be made in the vicinity of Bear River, Digby County. The other field studies will be in gold and iron districts, the mines being selected which offer the most important information concerning methods of development or treatment, or equipment, or the structure of the rocks or method of occurrence of the ores.

Because of the number of available localities, the same mines and districts may not be visited in consecutive years, selection being made for each session of the class.

### SENIOR THESIS AND CONFERENCE.

Fourth year students in mining and metallurgy are required to prepare a thesis upon some mining or metallurgical topic. The object is to acquaint the student with the general methods of scientific research, or to give him a measure of ability in making a detailed practical report upon mines or works in actual operation.

The thesis will probably fall into one of three classes :

(1) For students wishing to specialize in metal mining, the paper will treat either of some metalliferous mine and its operation, or some problem in ore dressing. If the former the study will include the structure and economic geology of the locality, the cost method of working for that particular deposit, design for mill if the operations have not begun, or a plan and specifications of the works if already established. If an ore dressing problem is studied, the thesis will treat of such subjects as the combination of graded crushing, jigging, water classification, table concentration, etc., which will give the best results at the lowest cost on any special ore which may be selected as offering special difficulties.

(2) For students specializing in coal mining the thesis will usually take the form of a detailed report on the operation of some colliery which may be selected as typical of modern practice, or of some coking or coal washing plant.

(3) For students wishing to specialize in metallurgy, the thesis will under ordinary circumstances take the form of a special research in assaying, or some metallurgical method, or in metallography. If desired, the student may take up the study of some of the departments of a steel works, such as the operating of a blast furnace, an open hearth furnace, a converter, a rolling-mill, etc.

The work of the Thesis is in part interwoven with the ordinary classes of the fourth year, and some of the field, laboratory and library work of these classes will bear directly upon it. The beginning of the study will be made during the summer vacation preceding the fourth year, at the close of the regular Summer Session. Problems connected with the Thesis will be discussed in regular conferences, held at stated intervals with the instructors in Mining, Metallurgy and Geology, and occasionally other members of the Faculty.

### XX.—MINING LAW.

Lecturer..... B. RUSSELL, M. A., D. C. L., K. C., M. P.

Subjects of lectures :—

Mining covenants. Forfeiture of leases. License to search. Injunctions. Liability of owners for negligence of miners, etc. Revised Statutes of Nova Scotia, Chapters 18, 19 and 20.

### XXI.—DRAWING.

The following classes conducted by the Victoria School of Art and Design are recognized as qualifying for a degree. The classes in Mechanical and Architectural Drawing are held in Dalhousie College and are subject in all respects to the regulations of the Faculty of



Science regarding attendance, examinations, fees, etc. The class in Freehand Drawing and Modelling is held in the rooms of the Victoria School of Art on Argyle Street. Candidates offering this class for a degree must present certificates, showing that they have given the required attendance and have satisfactorily completed the work of the Class. Blank forms of certificate may be had from the Dean or the Secretary of the Faculty of Science. Information regarding hours of meeting of the class, fees, etc., may be obtained on application to Mr. Alexander McKay, Secretary of the Victoria School of Art and Design.

**Mechanical Drawing.**

*Tuesdays, Thursdays and Fridays, 4—6 P. M., Wednesdays, 7.30—9.30 P. M.*

A.—Plane Geometry and Scales. Lettering. Projection of lines, planes and solids. Sections. Developments. Penetrations. The Involute; the Cycloid; the Epicycloid; the Helix; the Parabola; the Hyperbola. Isometric Projection,

B.—Rivets and riveted joints. Joints and girders. Screws, bolts and nuts. Keys. Cotters. Shafting. Couplings. Cranks. Bearings. Pulleys, spur-wheels and pinions. Bevel-gearing. Machine design. Shading and colouring.

*Books recommended: Low's Machine Drawing and Design.*

*For reference: Low and Bevis' Machine Drawing and Design; Unwin's Machine Design.*

**Architectural Drawing.**

*Tuesdays, Thursdays and Fridays, 4—6, P. M., Wednesdays, 7.30—9.30 P. M.*

A.—As under A. of the Class in Mechanical Drawing.

B.—Styles of Architecture. Perspective as applied to Architectural or Engineering design. Bonds of brickwork and stone. Details of construction in stone, brick, wood and iron. The framing of timbers. Fire-proof construction and strength of materials. Preparation of specifications.

**Free-hand Drawing and Modelling.**

Free-hand Drawing. Geometrical Drawing. Shaded Drawing from the Round. Modelling in clay. Principles and practice of Decorative Design and elements of Perspective.

**XXII.—DESCRIPTIVE GEOMETRY.**

*Lecturer . . . . . S. A. MORTON, M. A.*

*Saturdays, 9—11 A. M.*

This course of lectures will include the following subjects: Plane Geometry: construction of scales, construction and areas of plane figures, properties and construction of curves. Solid Geometry: problems on the straight line and plane, projection of lines, planes and solids, simple intersections of planes and solids, easy examples of projection of shadows.

*Books recommended: Angel's Practical Plane Geometry and Projection, Millar's Descriptive Geometry, Spanton's Science and Art Drawing.*

## XXIII.—APPLIED MECHANICS.

Lecturer .....STEPHEN M. DIXON, M. A., A. M. I. C. E.

Tuesdays and Thursdays, 3—4 P. M.

The object of this course is to study the practical application of Dynamics to the various branches of Engineering. The series of lectures will form a two year's course, so arranged that students may enter the class at the beginning of either year. The subjects studied will be as follows :

**Applied Mechanics 1.**

In 1904-05. Résumé of the Principles of Statics : The Theory of Structures, including the determination of stresses in framed structures, investigation of shearing forces and bending moments, discussion of strength of materials, and design of individual members of various trusses. A short course in Graphic Statics is given, and students are required to work out detailed design of a wood or steel truss.

*Books of reference:* Cotterill, *Applied Mechanics*; Alexander and Thomson, *Elementary Applied Mechanics*; Hoskins, *Elements of Statics* (Macmillan and Co.); Lanza, *Applied Mechanics*; Bovey, *Theory of Structures* (J. Wiley and Son).

**Applied Mechanics 2.**

In 1905-06. Résumé of the Principles of Dynamics—The Mechanics of Machinery, including (a) Kinematics ; relative velocities and accelerations ; velocity and acceleration diagrams ; link-work, wheel-teeth, belts, cams, the screw, conic mechanisms, bevel and skew gearing, parallel motions, etc. (b) Dynamics : equilibrium of mechanisms, force and work diagrams, inertia of moving parts, fly-wheels, governors, friction, brakes. During the year students will be required to make dimension sketches of details of machines, and also make a complete design of some machine.

Students will be expected to acquire considerable power in solving problems, and to read privately specified portions of books of reference on subjects not fully discussed in class.

*Books of reference:* Kennedy, *Mechanics of Machinery*; Cotterill *Applied Mechanics* (Macmillan and Co.); Unwin, *Machine Design*; Low and Bevis, *Machine Drawing and Design* (Longmans).

## XXIV.—SURVEYING.

Lecturers ..... { R. McCOLL, M. C. S. C. E.  
H. W. JOHNSTON, M. C. S. C. E.

The course is intended to give the student a practical training in the methods of land surveying, and in the field work of engineering operations, and is divided as follows :

**Surveying 1.**

Fridays, 3—5 P. M., first term.

Chain and Angular Surveying. The construction, use and adjustments of various instruments. Topography, Levelling and Contour Survey. Plotting.

**Surveying 2.**

*Fridays, 3-5 P. M., second term.*

Preliminary and Location Surveys of a railway. Construction Survey, including curves, setting out work and calculation of quantities. Hydrographic Surveying and Mining Surveying.

The field work will consist of:—(1) A Chain Survey. (2) A Chain and Compass Survey. (3) A Triangular Survey with sextant. (4) A Contour Survey. (5) A Survey with transit and chain. (6) A Survey and location of a line of road with topography and contour and staking-out for construction. (7) A Hydrographic Survey. (8) An Underground Survey or one at night to illustrate underground methods.

Students are required to keep complete notes and from them to prepare all plans, drawings, etc., of the work.

**XXV.—CIVIL ENGINEERING.\***

*Lecturer*.....M. MURPHY, D. Sc., C. E.

*Once a fortnight.*

The subjects treated will be:—Materials and Constructions. Earth-work. Masonry. Carpentry. Structures of timber, stone and iron. The construction of Common Roads, Railways. Bridges. Water Supply for Towns Reclamation of land from the sea.

Such works as are named above are generally in operation in Nova Scotia, under the supervision of the Provincial Engineer, and advanced Students in the Engineering Class will be afforded an opportunity of examining them under construction.

**XXVI.—HYDRAULIC ENGINEERING.\***

*Lecturer*.....C. E. W. DODWELL, B. A., M. I. C. E.

*Mondays, 9-10 A. M.*

The subjects treated will be as follows:

Flow of water through orifices and short tubes, and in pipes and open channels.

Water supply to cities and towns. Quantity and quality necessary. Rainfall, watershed, springs, wells, lakes and rivers. Storage of water in natural and artificial reservoirs. Measuring weirs and steam gauging. Filtration and other methods of treating impure waters. Construction of dams of stone, earth and timber. Details of construction of a town supply. Mains and distribution pipes, thickness, weight, strength, methods of moulding, preserving and laying. Valves, hydrants, etc. Pumping engines.

Turbines and water-wheels.

River improvements.

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If in any year there should not be a sufficient number of students to form a class in this subject, the lectures will not be given, but the students will pursue a course of reading under the supervision of the Lecturer.

**XXVII.—MUNICIPAL ENGINEERING.\***

Lecturer.....F. W. W. DOANE, C. E.

*Once a fortnight.*

The subjects treated will be :—Streets,—laying out, opening formation, sidewalks, paving, cleaning, sprinkling, street railways, obstructions, etc ; works of sewerage (separate and combined)—grades, materials, foundations, sectional form, course, ventilation, flushing, subsoil, drainage, intercepting sewers, tidal sewers, sewage disposal, etc. ; house drainage and plumbing, roof-water disposal, cess-pits, disposal of garbage, etc. ; water supply, plumbing—service pipes, stopcocks, effects and prevention of waste, etc.

**XXVIII.—ANATOMY.**

The University provides no instruction in this subject, but the Junior or the Senior Anatomy Class and the Practical Anatomy Class, conducted in the Halifax Medical College by Professor A. W. H. Lindsay, M. D., are recognized as qualifying for a degree. The Junior Anatomy Class meets on Mondays, Wednesdays and Fridays at 12—1 P. M. The Senior Class meets on Tuesdays and Thursdays at 12—1 P. M., and Saturdays at 10—11 A. M. The fee for each of these classes is \$15.00. The Practical Anatomy Class meets daily (Saturdays excepted), at 3.30—5.30 P. M. ; fee, \$15.00.

Undergraduates who have taken the Practical Anatomy Class as part of their course are required to produce evidence of having, during their attendance on such class, carefully dissected at least three "parts" of the body.

Undergraduates who have taken the above classes as part of their course are required either to present certificates of having passed the examinations conducted by the Faculty of Medicine, or to pass before the examiner of this Faculty a written examination in the subjects of the Junior or Senior Anatomy Class, and an oral or practical examination on such "parts" of the body as they may have dissected. In the latter case an examination fee of \$3 00 is payable, which covers both written and oral examination.

**XXIX.—HISTOLOGY.**

The University provides no instruction in this subject, but the class conducted by Professor G. M. Campbell, B A., M. D. and H. D. Weaver, M. D., in the Halifax Medical College, is recognized as qualifying for a degree. The class meets on Mondays, Wednesdays and Fridays, at 11 A M.—12 M. The fee for the course is \$15.00

Undergraduates who have taken this class as part of their course are required either to present a certificate of having passed the examination of the Faculty of Medicine or to pass an examination conducted by the Examiner of this Faculty. In the latter case a fee of \$3.00 is payable.

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\*If in any year there should not be a sufficient number of students to form a class in this subject, the lectures will not be given, but the students will pursue a course of reading under the supervision of the Lecturer.

**XXX.—PHYSIOLOGY.**

The University provides no instruction in this subject, but the class conducted in the Halifax Medical College by Professor L. M. Silver, M. B., is recognized as qualifying for a degree. The class meets on Tuesdays, Thursdays and Saturdays, at 11 A. M.—12 M. The fee for the course is \$15.00

The regulations as to examinations are [the same as in the case of Histology.

**XXXI.—THEORY AND HISTORY OF MUSIC.**

The classes in the Theory of Music, conducted in the Halifax Conservatory of Music by Mr. Percy Gordon, Director, and other members of the staff, and those in the History of Music, conducted by Rev. R. Laing, M. A., are recognized as qualifying for the degree of Bachelor of Music. In the Theory the course extends over three years; in the History, over two. Information as to details of subjects studied in the classes, fees, text-books, etc., may be obtained on application to the Director of the Conservatory.

# Faculty of Law.

## § XLVIII.—Courses of Lectures.

The following Courses of Lectures to be given in the Session of 1904-05, will begin on the 7th of September 1904, and end on the 23rd February, 1905.

### CONSTITUTIONAL AND INTERNATIONAL LAW.

(George Munro Professorship.)

Professor.....R. C. WELDON, K. C.

#### Constitutional Law.

*Two lectures per week.*

Subjects of lectures :

Constitutional Conventions. Royal Prerogative.  
*Lex Parliamenti*. Colonial Laws Validity Act.  
Select Cases ; Cartwright's Cases.

#### Constitutional History.

*Two lectures per week.*

Subjects of lectures :

Feudalism in England. Origin and growth of the two Houses of Parliament. Origin and Development of trial by Jury. Origin and Development of the Courts of Law. The Royal Prerogative. History of the Law of Treason. The Liberty of the Person. The Liberty of the Press. History of Party Government. Origin and Development of the Cabinet System. History of the Reform Bills. The written Code of the Constitution. *Magna Charta*, Petition of Right. Bill of Rights. *Habeas Corpus*.

*Text-book* : Taswell-Langmead's Constitutional History of England

#### Conflict of Laws.

*One lecture per week.*

Subjects of lectures :

Leading rules as to (1) personal capacity, (2) rights of property (3) rights of obligation, (4) rights of succession, (5) family rights, (6) forms of legal acts. The use of courts by strangers. The effect of foreign judgments. Select cases upon the Conflict of Laws.

*Text-book* : Nelson's Private International Law.

**International Law.**

*One lecture per week.*

Subjects of lectures :

History of North Atlantic Fisheries, Convention of London, 1818. Territorial Waters. Treaty of Washington, A. D., 1871. Consuls. Commercial Treaties. Naturalization. Extradition. Blockade. Contraband. Intervention. Capture. Prize Courts.

*Text-book :* Hall's International Law.

**CRIMES.**

*Lecturer*.....W. B. WALLACE, LL. B., J. C. C.

*Two lectures per week.*

Subjects of lectures :

Sources of Criminal Law. Offences against Public Order, internal and external. Offences affecting the administration of Law and Justice. Offences against Religion, Morals and Public Convenience. Offences against the Person, and Reputation. Offences against rights of property and rights arising out of Contract and offences connected with trade. Procedure. Proceedings after conviction.

*Text-book :* The Canadian Criminal Code, 1892.

**SHIPPING.**

*Lecturer*.....PROFESSOR WELDON.

Subjects of lectures :

Registration of Shipping. Transfer. Mortgage. Bottomry and Respondentia. Charter party. Bills of Lading. Collision. Damage. Salvage. Freight. Towage. General Average.

**CONTRACTS.**

*Professor*.....B. RUSSELL, M. A., D. C. L., K. C., M. P.

*Two lectures per week.*

Subjects of lectures :

Definition of terms; agreement, consideration, proposal, acceptance, promise, &c. Persons who may contract. Principal and agent. Disabilities arising from infancy, coverture, lunacy, intoxication, &c. Express and implied contracts. Verbal and written contracts. Specialties, Statutory requirements as to the validity and authentication of contracts; Statute of Frauds. Causes vitiating agreements; mistake, fraud, duress, &c. Discharge of contracts, rescission, performance, payment, release, merger, &c. Leading cases,

*Text-books :* Finch's Cases, and Anson on Contracts.

**EQUITY JURISPRUDENCE.***Lecturer*.....PROFESSOR RUSSELL.*One lecture per week extending over two years.***Subjects of lectures :**

Trusts, Mortgage, Frauds, Mistake, Specific Performance of Contracts, Administration of Assets, Election, Account, Discovery, Injunction.

*Text-book* : Smith, H. A.**SALES OF PERSONAL PROPERTY.***Lecturer*.....PROFESSOR RUSSELL.*One lecture per week.*

[1905-6.]

**Subjects of lectures :**Capacity to buy and sell. Executed and executory contracts of sale. Statute of Frauds. Lord Tenterden's Act. Rules as to passing of property. Reservation of *jus disponendi*. Stoppage *in transitu*. Condition. Warranty, express and implied. Remedies of seller and buyer.*Text-book* : Benjamin on Sales.**NEGOTIABLE INSTRUMENTS.***Lecturer*.....PROFESSOR RUSSELL.*One lecture per week.*

[1904-5.]

**Subjects of Lectures :**

Formal Requisites, Consideration. Indorsement and Transfer. Real and Personal Defences. Over-due Paper. Notice of Dishonor. Protest.

*Text-book* : McLaren on Bills.**EVIDENCE.***Lecturer* ... ..MR. H. A. LOVITT, B. A., LL. B.*One lecture per week.*

[1905-6.]

**Subjects of lectures :**

Nature of proof Production and Effect of Evidence. Relevancy. Instruments of Evidence.

*Text-book* : Greenleaf on Evidence; Judicature Act and Rules.



**PARTNERSHIP AND COMPANIES.**

Lecturer.....MR. H. A. LOVITT, B. A., LL. B.

*One lecture per week.*

[1904-5.]

Subjects of lectures :

Constitution. Liability of partners *inter se* and to third persons. Change of firm. Retirement of partners. Dissolution. Mining ventures. Joint-stock Companies. Canada Joint-stock Companies Act.

*Text-book* : Lindley on Partnership.

**PRACTICE AND PROCEDURE.**

Lecturer .....MR. HECTOR MCINNES, LL. B.

Subjects of lectures :

Judicature Act and Rules, General Principles of Pleading, and Rules of Practice.

Candidates for the Degree of LL. B. are not required to attend lectures or take the examination in Procedure.

**TORTS.**

Lecturer.....

*One lecture per week.*

Subjects of lectures :

Definitions. Torts considered with reference to Crimes and Contracts. Deceit. Slander and Libel. Malicious Prosecution. Conspiracy Assault and Battery. False Imprisonment. Enticement and Seduction. Trespass to Property. Conversion. Violation of Water Rights and Rights of Support. Nuisance. Negligence.

*Text-book* : Bigelow, or Pollok.

**REAL PROPERTY (First Year).**

Lecturer.....MR. JOSEPH A. CHISHOLM, LL. B.

§ XLIX.—**Admission of Students.**—(1.) Students may enter the University by (a) entering their names in the Register, and (b) paying the prescribed fees.

(2.) Registered students may, on payment of the proper fees, enter any of the classes of the University.

(3.) Students who wish to obtain University Degrees must become undergraduates. They must become undergraduates by (a) passing the Matriculation Examination of the Arts Faculty or a recognized equivalent, or (b) producing

certificates of Articled Clerkship, or the like, in cases where they rely on having passed the preliminary law examinations in their several provinces, and (c) entering their names on the Register as Undergraduates.

(4.) Students who are not undergraduates are known as General Students.

**§ L.—Degree of Bachelor of Laws.**—(1.) All candidates for the Degree of LL. B., are required to pass the Matriculation Examination of the Arts Faculty, or a recognized equivalent, to attend not less than five-sixths of the lectures given in each subject of the Course of Study, to pass the prescribed Examinations in the subjects of the three years Course of Study, and to argue at least two cases in the Moot Court.

(2.) Candidates for the Degree of LL. B., must be presented at the Convocation in which their degrees are given.

(3.) Graduates and undergraduates in Arts of any recognized College or University, and articled clerks or law students who have passed the preliminary law examinations in any of the Provinces of the Dominion of Canada, in Newfoundland, or in any of the British West India Islands, shall be admitted to the standing of Undergraduates of the First Year in the Faculty of Law, without passing any examination.

(4.) Undergraduates of other Law Schools may, on producing satisfactory certificates of standing, be admitted to similar standing in this Law School if they are found qualified to enter the classes proper to their years. But if their previous courses of study have not corresponded to the course on which they enter in the University, they may be required to take extra classes.

*Students presenting themselves for the first time for registration as undergraduates in law must submit to the Dean their diplomas or certificates to establish their qualifications as graduates, undergraduates, or enrolled law students, respectively. Without such diplomas or certificates students cannot be registered as Undergraduates in law.*

## § LI.—Course of Study for the Degree of LL.B.

### First Year.

- |                   |                            |
|-------------------|----------------------------|
| 1. Real Property. | 4. Torts                   |
| 2. Crimes.        | 5. Constitutional History. |
| 3. Contracts.     |                            |

**Second Year.**

- |                               |                        |
|-------------------------------|------------------------|
| 1. Equity.                    | 4. Constitutional Law. |
| 2. Partnership and Companies. | 5. Shipping.           |
| 3. Negotiable Instruments.    | 6. Wills.              |

**Third Year.**

- |                       |                                |
|-----------------------|--------------------------------|
| 1. International Law. | 4. Equity.                     |
| 2. Conflict of Law.   | 5. Sales of Personal Property. |
| 3. Evidence.          |                                |

The faculty urgently recommend that students devote their whole time during Sessions to the work of the School, experience having proved that students who undertake office work in addition to the work of their classes, receive comparatively little advantage from the lectures.

§ LII. — **Sessional Examinations.**—(1.) The Sessional Examinations will begin next Session on February 24th, 1905.

(2.) Students are forbidden to bring any book or manuscript into the Examination Hall, except by direction of the Examiner, or to give or receive assistance, or to hold any communication with one another at the examinations. If a student violate this rule, he shall be excluded from the Sessional Examinations of the session, and such other penalty shall be imposed as the Faculty may determine.

(3.) If an Undergraduate fail to pass in two subjects at the Sessional Examinations, he shall be allowed a supplementary Examination in such subject or subjects at the beginning of any subsequent Session.

(4.) If an Undergraduate fail to pass in more than two subjects at any Sessional Examination, he shall lose his Session.

(5.) Undergraduates who wish to present themselves at a Supplementary Examination, must give notice addressed to the Secretary of the Faculty, Dalhousie Law School, Halifax, on or before August 30th, 1904.

(6.) The Supplementary Examinations for the present year will begin September 6th at 3 p. m. Fee \$5, payable on the day of the Examination.

§ LIII.—**Moot Courts.**—Moot Courts are held weekly.

The case to be argued is stated by the Professor or Lecturer who is to preside. Every candidate for a degree shall

be required to take part in at least two arguments at the Moot Court. The senior counsel on either side shall file briefs with the Dean one day before the day on which the case is argued. A record is kept of the values assigned to the arguments made, and these values may be considered by the Faculty in recommending a candidate for his degree.

§ LIV.—**Residence and Discipline.**—The regulations as to residence and discipline in this Faculty are the same as in the Faculty of Arts. See Arts Calendar.

§ LV.—**Academic Costume.**—Bachelors of Law are entitled to wear gowns and hoods. The gowns are similar to those worn by Barristers-at-Law. The hoods are of black silk stuff, with a lining of white silk brodered with gold coloured silk.

§ LVI.—**The Library.**—The Library is in charge of a Librarian, who will endeavor to make its resources available to the Students. The Library will be found to contain almost all the reports an undergraduate will have occasion to consult.

§ LVII.—**Fees.**—The following are the fees payable by students of the Faculty of Law. *They are in all cases payable in advance.*

Students are requested to pay their Class Fees and sign the University Register on Tuesday, 6th September, 1904, in the office of the Law School.

Registration Fee, payable only by General Students.....	\$ 2 00
Fee for each class attended, per Session, payable by General Students.....	10 00
Fee for each class attended, per session, payable by students of the Affiliated Course.....	6 00
Fee for the classes of the First Year, payable by undergraduates.	40 00
Fee for the classes of the Second Year, payable by undergraduates.....	40 00
Fee for the classes of the Third Year, payable by undergraduates.....	40 00
Fee for LL. B. diploma, which is payable before the final examination, and will be returned in case of failure.....	10 00
Fee for the Supplementary Examination.....	5 00

Students of any year are permitted to attend lectures in the subjects of an earlier year without extra charge.

*Students will not hereafter be admitted to the Lecture Rooms unless they have paid their class fees.*

# Faculty of Medicine.

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## THE PRESIDENT, (*ex officio.*)

GEORGE L. SINCLAIR, M. D.	FRED. W. GOODWIN, M. D.
DONALD A. CAMPBELL, M. D., C. M.	F. U. ANDERSON, M. R. C. S., Eng.
A. W. H. LINDSAY, M. D., C. M.	EBENEZER MACKAY, Ph. D.
DANIEL MCNEIL PARKER, M. D.	WILLIAM H. HATTIE, M. D.
ANDREW J. COWIE, M. D.	GEORGE M. CAMPBELL, M. D.
JOHN F. BLACK, M. D.	NORMAN E. MACKAY, M. D.
ALEXANDER P. REID, M. D.	STEPHEN M. DIXON, M. A.
MATTHEW A. CURRY, M. D.	H. H. MACKAY, M. D.
MURRAY McLAREN, M. D.	MURDOCH CHISHOLM, M. D.
WILLIAM TOBIN, F. R. C. S., Ire.	NORMAN F. CUNNINGHAM, M. D.
HON. MR. JUSTICE HENRY	JOHN W. MACKAY, M. D.
LOUIS M. SILVER, M. B., C. M.	

*Dean of the Faculty:* DR. SINCLAIR.

*Secretary of the Faculty:* DR. LINDSAY.

Correspondence should be addressed:

*"The Secretary, Faculty of Medicine,  
Dalhousie College, Halifax."*

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§ LVIII.—**Courses of Instruction.**\*—1. Instruction is provided by the University in the following subjects of the Medical Curriculum:—

### I.—CHEMISTRY.

(*McLeod Professor.*)

*Professor*..... E. MACKAY, PH. D.

#### **Junior Chemistry Class.**

*Mondays, Wednesdays and Fridays, 9.—10 A. M.*

CLASS WORK.—The lectures in this class deal in an elementary way with the principles of general chemistry. In the earlier part of the course the preparation and characteristic properties of common acids and bases are studied, and then the chemistry of fire, of water and of air, the order of historical development being followed as nearly as possible. When some acquaintance with chemical facts has thus

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\*It is to be distinctly understood that the program and regulations regarding courses of study and examinations contained in this Calendar hold good for year ending April 30, 1905 only, and that the Faculty, while fully sensible of its obligations towards the students, does not hold itself bound to adhere absolutely for the whole four years of a student's course to the conditions now laid down.

been gained, the fundamental laws of combination are taken up and the atomic theory and chemical formulæ are introduced. Chlorine, nitrogen, carbon and some of their typical compounds are then studied, and thereafter the principal remaining elements, each in connection with the group of elements in the periodic system to which it belongs. Examinations, oral or written, are held fortnightly, and occasionally written exercises are required.

**LABORATORY WORK.**—Every student is required to devote at least three hours a week to laboratory work. The laboratory course is designed to make the student familiar with ordinary laboratory operations and to lead him to solve simple problems in chemistry by experiment. Several common inorganic substances are prepared and studied; simple quantitative experiments are performed; and some time is devoted to elementary work in qualitative analysis.

*Books recommended:* Remsen, *Introduction to the Study of Chemistry* (Macmillan & Co.), for both class and laboratory work.

#### Senior Chemistry Class.

*Saturdays, 9.—10 A. M., for first half-year; Tuesdays, Thursdays and Saturdays, 9.—10 A. M., for second half-year.*

**CLASS WORK.**—The subjects of study in this class include pure chemistry and the applications of chemistry to medicine.

The subjects of study in pure chemistry are: review of the chemistry of the metals, noting especially compounds having medicinal or toxic properties; compounds of carbon—their purification and analysis; the paraffins and their chief derivatives; ethylene; acetylene; benzene and its chief derivatives.

The subjects of study in medical chemistry are: air; water; its sanitary analysis and purification; adulteration of foods; the proximate principles of the body and of food; typical foodstuffs as milk, flour, bread, meat; the blood; the digestive fluids and digestion; urine.

**LABORATORY WORK.**—All members of the class are required to devote at least three hours a week to laboratory work. This will consist of qualitative analysis including the detection of the more commonly occurring poisons, the detection of adulterations in milk, simple quantitative exercises in the analysis of air and water, and the quantitative estimation of glucose, albumen and urea. In the course in qualitative analysis practice is given in the identification of the chief inorganic compounds of the following elements: arsenic, antimony, tin, bismuth, copper, mercury, lead, silver, iron, chromium, aluminium, manganese, zinc, magnesium, barium, calcium, potassium, sodium, chlorine, bromine, iodine, sulphur, nitrogen, phosphorus, carbon, boron; and in the identification of the following organic compounds: acetic, tartaric, oxalic, hydrocyanic, salicylic and citric acids and their salts, alcohol, chloroform, chloral, glucose, cane sugar, starch, phenol, quinine, morphine, strychnine.

*Books recommended:* For class use:—Roscoe and Harden, *Inorganic Chemistry for Advanced Students* (Macmillan & Co.); Remsen, *Compounds of Carbon* (Macmillan & Co.); Platt, *Qualitative Analysis and Medical Chemistry* (J. J. M'Vey); Halliburton, *Essentials of Chemical Physiology* (Longman, s.). For reference:—Remsen, *Inorganic Chemistry, Advanced Course* (H. Holt & Co.); Hammarsten, *Text-books of Physiological Chemistry*, translated by Mandel (Wiley & Sons).

## CHEMICAL LABORATORY.

The chemical laboratory accommodates about one hundred students. A reference library is placed in the laboratory for the use of students doing analytical work.

Laboratory students are allowed the use of all the more inexpensive reagents. They are required to provide themselves with the more expensive reagents, as alcohol and ether, and they are charged with the value of apparatus they have broken or injured.

The laboratory is open to students of the Junior Class on Mondays, Wednesdays and Fridays from 10 to 11 a. m., and to students of the Senior Class on Tuesdays and Thursdays from 10 to 11 a. m., and on Fridays from 11 a. m. to 12 m.

## II.—ELEMENTARY BIOLOGY.

(A.)—BOTANY.

Lecturer.....

Saturdays, 11 A. M.—1 P. M.

The course in Botany will have special reference to the following subjects: Protoplasm and Plant-cells, the Tissue and Tissue System of Plants, Morphology of the Plant-body, Plant Physiology, the Principles of Classification and the Laws of Distribution, the Proto-phyta (Schizophyceæ) the Phycophyta (Chlorophyceæ and Phæophyceæ), the Carpophyta (Rhodophyceæ, Ascomycetæ and Basidiomycetæ specially), the Bryophyta (Mosses and Liverworts), the Pteridophyta (Ferns, Horse-tails and Club-mosses), the Anthophyta (specially the Coniferæ, Gramineæ, Orchidaceæ, Liliaceæ, Urticaceæ, Labiata, Compositæ, Umbelliferae. Rosaceæ, Leguminosæ, Cruciferae, Ranunculaceæ). The Morphology and life history (the Anatomy, Histology and Development) of at least two common or representative species of each group of plants named above, in minute detail.

General attention will be given to the native *flora* of the province, with special notice of foreign as well as native species of interest from economic, medicinal or injurious properties.

The preliminary study of Botany as indicated in Grade IX of the Public School Course (Spotton's *Structural Botany and Flora*), and especially the formation of a local collection of plants, even if unnamed and unclassified, will be an advantage to any student entering upon the course.

Practical instruction will be given in the collecting, drying and mounting of specimens, the use of the microscope, the preparing of microscopic sections, and the general dissection of plants; and all students will be required to present a collection of at least 100 plants representing the local flora examined by them, together with their notes and drawings of microscopic work done during the session, as a portion of their terminal examination. The use in class of a number of microscopes will be granted the students under the care and direction of the lecturer; but a hand lens, glass slides, cover glasses, scalpels and other apparatus, and books necessary for each student, shall be supplied by each for himself.

*Text Books*:—Elementary.—Bessey, *Essentials*; Spotton, *Structural Botany*. For reference:—Special texts will be recommended in each subdivision of the subject during the course of the lectures and demonstrations.

## (B.)—ZOOLOGY.

Lecturer.....

*Thursdays, 2—4 P. M.*

The work of the class will consist of a course of lectures supplemented by practical work.

The following subjects will be treated of in the lectures :—Organic and Inorganic Bodies ; Differences between Plants and Animals, Morphology, Physiology, Differences between Animals, Specialization of Function, Morphological Type, Von Bar's Law of Development, Origin of Species, Homology, Analogy, Reproduction Distribution in Time and Space, Evolution and Classification with special reference to the *fauna* of Nova Scotia.

The practical part of the course will consist of Dissections and Demonstrations, Microscopic, &c.

The object of the class will be to give such a comprehensive idea of the Animal Kingdom, as will form a good basis for anyone wishing to prosecute still further the study of Biology, or Comparative Anatomy and Physiology.

*Text Books* : Parker and Haswell, *Student's Manual*. Reference Text Books :—For each sub-division of the subject special texts will be recommended in the course of the lectures and demonstrations.

## III.—MEDICAL PHYSICS.

Professor.....STEPHEN M. DIXON, M. A.

*Tuesdays and Thursdays, 11 A. M.—12 M.*

In this class the following subjects will be treated :—The properties of solids and fluids (including the elements of dynamics) ; heat ; electricity and magnetism The lectures will be fully illustrated by experiments and the amount of mathematical knowledge assumed will be no greater than may be acquired in Grade XI. of the Public Schools. Students will be expected to show an intimate knowledge of the apparatus used in the illustrations and to work up carefully the subjects treated in the lectures ; but they will not be required to carry on any extensive private reading.

*Books recommended for reference* : Daniell, *Physics for Students of Medicine* (Macmillan & Co.) ; Robertson, *Physiological Physics* (Cassell & Co.) ; Jones, *Heat, Light and Sound* (Macmillan & Co.) ; Thompson, *Lessons in Electricity and Magnetism*.

2. Students wishing to attend the above courses may do so either as General Medical Students without preliminary examination, or as regular Undergraduates in Medicine. In either case they must enter their names in the University Register at the beginning of the Session. By reference to §§ xv and xxix Undergraduates in Arts and Science will see how they at the same time may be registered with the Medical



Faculty and so secure the benefit of certain classes of the Arts and Science Courses, as regular Undergraduates in Medicine.

3. In other subjects the necessary classes may be attended at any other University or College recognized by the Senate.

4. Attendance on classes by those registered as General Medical Students will not qualify for Degree Examinations in this Faculty except as provided in §LXIII 1 (A) (2) c.

5. Certificates indicating less than 90 per cent. of attendance upon any class will not be accepted without valid reason for absence being shown.

**§ LIX.—The Academic Year.**—The Academic year consists of one session of eight months duration. The Session of 1904—1905 will begin on Thursday, August 25th 1904, and end on Tuesday, April 25, 1905.

**§ LX.—Degrees.**—Two Medical Degrees are conferred by this University, viz., Doctor of Medicine (M. D.) and Master of Surgery (C. M.); but neither degree is conferred on any person who does not at the same time obtain the other.

**§ LXI. — Matriculation Examination. — 1.** Candidates for medical degrees must give evidence of having obtained a satisfactory general education, by presenting certificates of having passed, before entering on the course of study qualifying for the degrees, either the Preliminary Examination of the Provincial Medical Board of Nova Scotia, the Junior Matriculation Examination of this University, with Latin as one of the languages selected, or some other examination recognized by the Board as sufficient.\*

2. The examinations recognized *pro tanto* by the Provincial Medical Board will be similarly recognized by this Faculty.

3. Candidates who may have passed in all but one of the subjects required for the Preliminary Examination of the Provincial Medical Board either before the Board's Examiners or at any of the recognized Examinations indicated above, provided they shall have made at least 25% in such subject, may enter as undergraduates, but will subsequently be required to comply with the Board's regulations as regards the remaining subject of examination before being admitted to the classes of the second year.

\*All information in reference to Requirements for the Preliminary Examination of the Provincial Medical Board, Exemptions, etc., may be obtained on application to the Registrar of the Board, Dr. A. W. H. Lindsay, 241 Pleasant Street, Halifax.

§ **LXII.—Degree Examinations.**—1. Candidates for the degrees of M. D. and C. M. shall be required to pass two main examinations—the Primary and the Final M. D., C. M. Examinations—and to have satisfied at the dates of the examinations certain conditions as to fees, attendance on classes, etc. Tickets of admission will be issued to all candidates who have satisfied these requirements of the Faculty, which tickets shall be produced at each examination.

2. The Regular Degree Examinations will be held during the second and third weeks in April of each year.

3. At all examinations a minimum of 50% in each subject will be required to obtain a “*Pass*,” except under the conditions specified in §LXIV, 4\*. Candidates making 75% or over in any subject shall be indicated in the published class lists as having “*Passed with distinction*.” The names in the two divisions of the class lists and in the general pass lists shall be placed in simple alphabetical order.

4. Should the candidate fail to pass or to hand in a paper in any subject or subjects at the Regular Examinations, his fee will not be returned to him, but he will be permitted a *supplementary* examination in such subject or subjects on payment of \$5.00 for each subject, with or without evidence of further attendance on said subject or subjects as the Faculty may direct.

5. A candidate who has been prevented by exceptional circumstances from presenting himself at the Regular Examinations may by special permission of the Faculty be allowed a *special* examination, but such examination shall only be allowed at the dates specified in the University Almanac for the supplementary examinations, and the fee shall be \$5.00 for each subject of examination.

6. Candidates are not permitted to present themselves for examination in selected subjects, but are required to take each section as hereafter defined (§§LXIII—LXIV) as a whole, except (a) Candidates obtaining the special permission of the Faculty; (b) Students taking one of the affiliated courses (LVIII, 2).

In either case the fee will be \$5.00 for each subject, and such examination shall only be allowed at the dates specified in the University Almanac for the supplementary or the regular examinations.

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\*In Chemistry and in Physics the same percentage will be required of Students in Medicine as of other professional students in these subjects.

7. Candidates who have been granted supplementary examinations, will be required to pay the examination fee whether they take the examination in the Autumn or at the time of the regular April examinations.

§ LXIII.—**Primary M. D., C. M. Examination.**\*—1. This examination shall consist of two parts as follows:—

(A.) PRIMARY EXAMINATION, SECT. A.

(1.) This examination shall include Anatomy, Chemistry, Elementary Biology, and Medical Physics, to the extent indicated in the following synopsis:—

**Anatomy.**

A written examination on Osteology, including general physical characters, chemical composition and coarse structure of bone, ossification. Arthrology; classification of Joints, structure and mechanism of the most important (hip, knee, shoulder, elbow, ankle, etc.)

**Chemistry.**

Elementary general chemistry, as in the course of the Junior Chemistry Class, outlined on pp. 93, 94.

**Elementary Biology.**

Candidates will be expected to show a practical acquaintance with the topics indicated as forming the subject matter of the courses of lectures and instruction in Botany and Zoology, outlined at pp. 95, 96

**Medical Physics.**

A written examination on the subject matter included under this heading at p. 96.

(2) Candidates for this examination shall be required to produce certificates to the following effect:

(a) Of having passed the Preliminary Examination of the Provincial Medical Board of Nova Scotia; the Junior Matriculation Examination of this University with Latin; or other examination recognized as sufficient, at least one academic year previously, and of having completed their sixteenth year before the passing of said examination.

(b) Of having, after passing the Preliminary Examination or other equivalent examination, attended either in this University, or in some other University or College approved by the Senate, during at least one medical session of eight months duration a course in *Anatomy, (Osteology and Arthrology)* of at least 75 lectures and demonstrations with 10 hours laboratory work per week for six months.

\*See foot note, p 93.

(c) Of having, either before or after passing the Preliminary Examination or other equivalent examination attended either at this University, or at some other University or College approved by the Senate, the following courses of lectures and instruction, viz., *Chemistry*, a course of at least 75 lectures with a laboratory course of not less than three hours per week for six months; *Elementary Biology*, a course of at least 100 hours of lectures and laboratory work; *Medical Physics*, a course of at least 50 lectures.

(3) Exemption from examination in any or all of these subjects may be allowed on production of satisfactory certificates.

#### (B.) PRIMARY EXAMINATION, SECT. B.

(1.) This examination shall include Anatomy, Physiology and Histology, and Chemistry, to the extent indicated in the following synopsis:—

##### **Anatomy.**

This examination will be partly written and partly *viva voce*. The paper may include questions in Descriptive and Regional Anatomy Surgical and Medical Anatomy. At the oral examination, candidates will be examined on the skeleton, recent dissections, models, preparations, etc.

##### **Physiology and Histology.**

A written and an oral examination on: (a) The physiology of digestion, absorption, circulation, respiration, secretion, nutrition, animal heat, animal motion; the functions of the nervous system and sense organs; reproduction and development.

(b) The composition of food, and of the tissues, secretions, excretions and other fluids of the body.

(c) Histology.

At the oral examinations microscopical preparations of the tissues and organs of the body will also be submitted for identification and description.

##### **Chemistry.**

Inorganic, organic and medical chemistry as in the course of the Senior Chemistry Class, outlined on page 90. The examination will include (a) A written paper. (b) A practical examination in the laboratory. (c) An oral examination, in which questions may be put to candidates upon the entire work of the Junior and Senior courses.

(2) Candidates for this examination shall be required to produce certificates to the following effect:

(a) Of having passed the Preliminary Examination, or other examination recognized as sufficient, at least two academic years previously, and of having completed their sixteenth year before the passing of said examination.

(b) Of having passed in the subjects of the first part of the Primary Examination either at this University or at some other University or College recognized by the Senate.

(c) Of having, after passing the Preliminary Examination or other equivalent examination, attended either in this University, or in some other University or College approved by the Senate, during at least two medical sessions each of eight months duration, the following courses of lectures and instruction, in addition to those prescribed under § LXIII 1 (A) (2) for Sect. A of the Primary Examination, viz. : *Senior Anatomy*, a course of at least 75 lectures and demonstrations with 10 hours laboratory work per week for six months\* ; *Senior Chemistry*,† a course in Organic and Medical Chemistry of 50 lectures with a laboratory course of not less than 3 hours per week for six months ; *Physiology*, a course of at least 75 lectures ; *Histology*, a course of at least 75 hours of lectures and laboratory work.

(3.) (a) Candidates who have not passed Sect. A of the Primary Examination may, by special permission of the Faculty, be allowed to complete their Primary Examination in both sections at the same time.

(b) Exemption from Examination in any or all of the subjects† of the Primary Examination, may be allowed on production of satisfactory certificates.

2. The Primary M. D., C. M. Examination will be held in the second and third weeks in April. Candidates are required to hand in their applications and to transmit as far as possible the certificates specified above for Sect. A or Sect. B, as the case may be, to the Secretary of the Faculty at least fourteen days before the date of the examination, and the remainder of the required certificates not less than two days before the date of the examination, to enter their names in the Register of Undergraduates of the University before the date of the examination, and to pay before the date of the examination, one-sixth of the amount of the graduation fee in the case of candidates for Sect. A, and one-third of the graduation fee in the case of candidates for Sect. B.‡

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\*On completion of their courses in Practical Anatomy candidates will be required to show by certificate that they have satisfactorily dissected each of the "parts" of the body twice.

†In Chemistry, exemption from further attendance or from further examination may be allowed although the Preliminary Examination may not have been taken previous to the attendance or the passing of the examination in that subject.

‡Candidates exempted from Sect. A of the Primary Examination will be required to pay one-half of the graduation fee before being admitted to Sect. B.

§ LXIV.—Final M. D., C. M. Examination.\*

1. This examination shall also consist of two parts as follows :

(A.) FINAL EXAMINATION, SECT. A.

(1) This examination will include the following subjects :—Materia Medica, Pharmacy and Therapeutics ; Pathology and Bacteriology ; Medical Jurisprudence and Insanity, and Hygiene.

**Materia Medica, Pharmacy and Therapeutics.**

This examination will be partly written and partly oral. Candidates will require to possess a knowledge of :—

(a) The general nature and composition, and the most important physical and chemical characters of the Pharmacopœial drugs, named in the annexed Schedule.

(b) The composition of the Pharmacopœial preparations of these drugs, and the process employed in making them.

(c) The doses, therapeutical uses and modes of administration of these drugs and their preparations ; writing prescriptions.

At the oral examination, candidates will also be required to recognize the drugs indicated by *italics* in the annexed Schedule :

*Calx Chlorinata* ; Liquor Sodæ Chlorinatæ.  
 Ammonii Bromidum ; *Potassii Bromidum* ; Sodii Bromidum.  
 Iodum ; *Potassii Iodidum* ; Sodii Iodidum ; Plumbi Iodidum.  
 Sulphur Sublimatum ; *Sulphur Præcipitatum* ; Calx Sulphurata ;  
 Potassa Sulphurata.  
 Phosphorus ; Calcii Phosphas ; Sodii Phosphas ; *Ferri Phosphas* ;  
 Calcii Hypophosphis ; Sodii Hypophosphis.  
 Acidum Hydrochloricum ; Acidum Nitricum ; Acidum Sulphuricum.  
 Acidum Aceticum ; Acidum Citricum ; Acidum Tartaricum.  
 Acidum Boricum ; Acidum Sulphurosum.  
*Acidum Hydrocyanicum Dilutum*  
 Liquor Ammonia ; Liquor Potassæ ; Potassa Caustica.  
 Ammonii Carbonas ; *Ammonii Chloridum* ; Liquor Ammonii Acetatis.  
 Potassii Bicarbonas ; Potassii Sulphas ; Potassii Chloras ; Potassii  
 Tartaras Acidus ; *Potassii Permanganas*.  
 Sodii Bibarbonas ; Sodii Sulphas ; Sodii Nitris ; Borax.  
 Calx ; Calcii Hydras ; Creta Præparata ; Calcii Carbonas Præcipitatus.  
 Magnesia ; Magnesii Carbonas ; *Magnesii Sulphas*.  
 Alumen ; *Alumen Exsiccatum*.  
 Zinci Oxidum ; Zinci Chloridum ; Zinci Sulphas.  
 Cupri Sulphas  
 Argenti Nitras.  
 Hydrargyrum ; *Hydrargyri Oxidum Flavum* ; *Hydrargyri Oxidum  
 Rubrum* ; *Hydrargyri Subchloridum* ; *Hydrargyri Perchloridum*  
*Hydrargyri Iodidum Rubrum* ; Hydrargyrum Ammoniatum ;  
 Hydrargyri Oleas ; Liquor Hydrargyri Nitratidis Acidus.  
 Plumbi Oxidum ; *Plumbi Acetas* ; Liquor Plumbi Subacetatis Fortis.  
 Antimonium Tartaratum.  
 Acidum Arseniosum ; *Ferri Arsenias* ; Sodii Arsenias ; Arsenii Iodidum ;  
 Liquor Arsenii et Hydrargyri Iodidi.  
 Bismuthi Subnitras ; Bismuthi Carbonas ; Bismuthi Salicylas.

\*See foot-note p. 93.

Ferrum; *Ferri Sulphas*; *Ferri Sulphas Exsiccatus*; *Ferri Carbonas Saccharatus*; *Syrupus Ferri Iodidi*; *Liquor Ferri Acetatis*; *Liquor Ferri Perchloridi*; *Liquor Ferri Pernitratidis*; *Liquor Ferri Persulphatis*; *Ferri et Ammonii Citras*; *Ferri et Quininae Ferrum Tartaratum*; *Ferrum Redactum*.  
 Alcohol Absolutum; *Spiritus Rectificatus*.  
*Æther*; *Chloroformum*; *Iodoformum*.  
*Chloral Hydras*; *Butyl Chloral Hydras*; *Paraldehydum*; *Sulphonal*.  
*Amyl Nitris*; *Tabellæ Trinitrini*; *Liquor Trinitrini*; *Spiritus Ætheris Nitrosi*.  
*Acetanilidum*; *Phenacetin*; *Phenazonum*.  
 Colloidum.  
*Creosotum*; *Acidum Carbolicum*; *Acidum Salicylicum*; *Sodii Salicylas*; *Salol*.  
*Aconiti Radix*; *Aconitina*.  
*Opium*; *Morphinæ Hydrochloridum*; *Morphinæ Acetas*; *Morphinæ Tartaras*; *Apomorphinæ Hydrochloridum*; *Codeina*; *Codeinæ Phosphas*.  
*Cocæ Folia*; *Cocaina*; *Cocainæ Hydrochloras*.  
*Jaborandi Folia*; *Pilocarpinæ Nitras*.  
*Quassia Lignum*; *Calumbæ Radix*; *Gentianæ Radix*.  
*Physostigmatis Semina*; *Physostigminæ Sulphas*.  
*Caffeina*; *Caffeinæ Citras*.  
*Conii Fructus et Folia*.  
*Asafetida*; *Ammoniacum*; *Myrrha*; *Guaiaci Resina*.  
*Cinchonæ Rubra Cortex*; *Quinina Sulphas*; *Quinina Hydrochloridum*; *Quinina Hydrochloridum Acidum*.  
 Salicinum.  
*Ipecacuanhæ Radix*; *Senegæ Radix*.  
 Glycerinum.  
*Nux Vomica*; *Strychnina*; *Strychninæ Hydrochloridum*.  
*Belladonnæ Radix et Folia*; *Atropina*; *Atropinæ Sulphas*; *Hyoscyami Folia*; *Stramonii Semina et Folia*; *Homatropinæ Hydrobromidum*.  
*Cannabis Indica*.  
*Digitalis Folia*; *Strophanthi Semina*.  
*Oleum Ricini*; *Oleum Crotonis*; *Aloe Barbadosensis*; *Aloe Socotrina*; *Aloinum*; *Cascara Sagrada*; *Colocynthis Pulpa*, *Elaterium*; *Elaterinum*; *Jalapa*; *Podophylli Rhizoma*; *Rhei Radix*; *Senna Alexandrina et Indica*; *Camphora*; *Oleum Terebinthina*.  
*Acidum Tannicum*; *Acidum Gallicum*; *Kino*; *Catechu*; *Hamamelidis Cortex et Folia*.  
*Acidum Benzoicum*.  
*Copaiba*. *Cubebæ Fructus*.  
*Colchici Cormus et Semina*.  
 Scilla.  
*Filix Mas*. *Santoninum*.  
 Ergota.  
*Oleum Morrhuæ*.  
 Cantharis.

#### Medical Jurisprudence and Insanity, and Hygiene.

The examination will be partly written, partly oral. Candidates will be examined on the following topics:—

##### Forensic Medicine.

- I. Examinations of Persons found Dead, with reference to:—(1) Identification; (2) Time of Death; (3) Cause of Death.
- II. Violent causes of Death:—(1) Drowning; (2) Strangulation; (3) Suffocation; (4) Mechanical Injuries and Wounds

- III. Poisons and Poisoning:—(1) Symptoms and post-mortem appearances in cases of poisoning by the following agents:—Inorganic—Mineral Acids; Solutions of Alkalis; Copper Lead; Mercury; Antimony; Arsenic; Phosphorus. Organic—Oxalic Acid; Carbolic Acid; Opium; Strychnine; Belladonna; Aconite; Chloroform; Chloral Hydrate; Cyanides. (2) Duties of medical men in cases of Poisoning as regards:—Observation; Treatment and Preservation of parts for Analysis. (3) Preliminary Tests for Poisonous Substances for Clinical Use before reference to an Analyst.
- IV. Medico-legal points in connection with:—Pregnancy, Delivery, Rape, Criminal Abortion, Infanticide, Assaults and Homicide, Wounds and other external Injuries; Mental Capacity in relation to Criminal Responsibility, Contracts, and Wills; Malpractice, and Neglect of Duty.
- V. Forms of Insanity. Examination of persons supposed to be insane. The Lunacy Laws in so far as they effect the Medical Practitioner when signing Certificates of Lunacy.

#### *Hygiene.*

- I. WATER, in its relation to Health and Disease:—(1) The Character and Classification of Drinking Water. (2) The Causes and Sources of the Impurities found in Water and Methods of Purification. (3) The Diseases conveyed by Water, and the Methods of dealing with Epidemics of such Diseases.
- II. AIR, in relation to Health and Disease:—(1) The Causes and Sources of the Impurities found in Air. (2) The Diseases conveyed through the Air. (3) The quantity of Air necessary for Health; the Principles of Ventilation.
- III. SOIL, in relation to Health and Disease:—(1) The Causes and Sources of the Impurities in the Soil, and the Methods of dealing with them. (2) Diseases connected with the Soil. (3) The Methods of dealing with Excreta and Sewage.
- IV. FOOD, in relation to Health and Disease:—(1) Dietetics. (2) The common Adulterations of the Chief Articles of Diet. (3) Diseases connected with Deficiency or Impurity of Food-supply.
- V. The Dwelling, in relation to Health and Disease:—The Principles of House Drainage.
- VI. The Principles of Disinfection, and the mode of Action of the chief Disinfecting Agents.
- VII. The Provisions of "The Act for the Notification of Disease."

#### **Pathology and Bacteriology.**

The Examination will be partly written, partly *viva voce*. Candidates will be expected to possess a knowledge of:—

(a) *General Pathology*, including Degenerative Processes. Inflammation, Morbid Growths, etc.

(b) *General Etiology*, with reference to Parasitic and Infective Diseases.



(c) *Systematic Pathology*, the more important diseases of the principal systems and organs of the body.

(d) *Bacteriology*, to include the General Morphology and Life History of Micro-Organisms; Characters of Organisms Pathogenic to the Human Subject, and their modes of producing diseases, etc.

At the oral examination candidates will be examined on gross and microscopical preparations, and will be expected to possess a knowledge of the Preparation of Culture Media, Methods of Isolation and Cultivation, Staining, Separation of Bacterial Products, Inoculation

(2) Candidates for this examination shall be required to furnish certificates to the following effect, viz. :—

(a) Of having passed the Preliminary Examination, or other examination recognized as sufficient, at least three academic years previously, and of having completed their sixteenth year before the passing of said examination.

(b) Of having passed the Primary M. D., C. M. Examination at this University, or of having passed an equivalent examination at some other University or College recognized by the Senate.

(c) Of having, after passing the Preliminary Examination, or other equivalent examination, attended at some University or College approved by the Senate, during at least three medical sessions, each of eight months' duration, the following courses of lectures and instruction, in addition to those prescribed under §LXIII for the Primary Examination, viz. :—*Materia Medica*, a course of at least 75 lectures; *Therapeutics*, a course of at least 25 lectures; *Medical Jurisprudence (including Insanity)*, a course of at least 50 lectures and demonstrations; *Hygiene*, a course of at least 25 lectures and demonstrations; *Pathology and Bacteriology*, a course of at least 150 hours of lectures, demonstrations and laboratory work.

(d) Of having, after passing the Preliminary Examination, or other equivalent examination, attended at some University or College, approved by the Senate, one course of instruction of at least thirty lessons in Practical Dispensing, or under the same conditions had three months practice in the dispensing of drugs with a registered apothecary or dispensing medical practitioner;

(B.) FINAL EXAMINATION, SECT. B.

(1) This examination will include the following subjects:—Surgery, Clinical Surgery, Medicine, Clinical Medicine, Obstetrics and Diseases of Women and Children.

### Surgery.

The Examination in this subject will be partly written and partly *viva voce*. The candidates will be expected to possess a knowledge of the Principles and Practice of Surgery, of Surgical Pathology, Surgical Anatomy, and Operative Surgery. They will also be examined on the more common Diseases of the Skin, of the Eye, Ear, Throat and Nose.

### Clinical Surgery.

This examination will be partly practical and partly oral. Cases will be submitted for diagnosis and treatment. Candidates will also be examined on the application of Splints and Bandages, and on the uses of Surgical Instruments and Appliances.

### Medicine.

In this subject there will be a written and an oral examination on the Clinical History, Causes, Diagnosis, Prognosis and Treatment of the Diseases of the different Systems and Organs of the Body. The examination will also include Infectious Diseases, Constitutional Diseases, Mental Diseases, and Diseases of the Nervous System. Candidates may also be questioned on Medical Anatomy and on Therapeutics.

### Clinical Medicine.

The examination in Clinical Medicine will be partly practical and partly oral. Patients will be submitted for Examination, Diagnosis and Treatment. Examination of specimens of Urine, Sputa, etc., will be required.

### Obstetrics and Diseases of Women and Children.

In these subjects there will be a written and an oral examination, which will embrace the following:—

- (a) The Anatomy and the Physiology of the Female Organs of Reproduction.
- (b) The Physiology, Pathology and Therapeutics of Pregnancy.
- (c) Parturition, natural and morbid.
- (d) Hygiene, Pathology and Therapeutics of the Puerperal State.
- (e) Hygiene, Pathology and Therapeutics of Infancy and Childhood.
- (f) Special Pathology and Therapeutics of the Female Organs of Reproduction.

At the oral Examination, candidates may also be questioned on Gynaecological Operations and the use of Instruments and Appliances,

(2) Candidates for this examination will be required to furnish certificates to the following effect, viz. :—

(a) That they have completed their twenty-first year, or that they will have done so, on or before the day of graduation. This certificate shall be signed by themselves, and shall be after the following form :

HALIFAX, ..... , 19....

I, the undersigned, being desirous of obtaining the Degrees of Doctor of Medicine and Master of Surgery, do hereby declare that I have attained the age of twenty-one years (or if the case be otherwise), that I shall have attained the age of twenty-one years before the next graduation day.

(Signed),

A. B.

(b) Of having passed the Preliminary Examination, or other equivalent examination, at least four academic years previously, and of having completed their sixteenth year before the passing of said examination ;

(c) Of having passed the Primary M. D., C. M. Examination at this University, or having passed an equivalent examination at some other University or College recognized by the Senate ;

(d) Of having passed the First part (Sect. A) of the Final Examination at this University ;

(e) Of having, after passing the Preliminary Examination, or other equivalent examination, fulfilled the following requirements :

*a.* Attended at some University or College recognized by the Senate, during at least four academic years, each of at least 8 months' duration, two courses of at least 75 lectures each in each of the following, in addition to the subjects prescribed under §LXIII 1 and §LXIV 1 (A) (2), viz. : *Surgery, Medicine, Obstetrics and Diseases of Women and Children, Clinical Surgery, Clinical Medicine* ; and one course of at least 25 lectures and demonstrations in *Ophthalmology, Otology and Laryngology.*

*β.* Attended at some University or College recognized by the Senate, a course in Operative Surgery, and of having performed operations on the dead body to the satisfaction of the Teacher\* ;

*γ.* Attended during at least eighteen months the practice of the Victoria General Hospital, or that of some other General Hospital approved by the Senate, or attended such hospital practice for twelve months with at least six months additional attendance on the practice of a recognized Dispensary, or of the out-patient department of an approved Hospital ;

*δ.* Attended at a recognized Hospital or Dispensary courses of practical instruction of at least 25 lessons or

\* Blank certificates will be issued to candidates which must be filled out and signed by the proper authorities.

demonstrations each, in Medicine and in Surgery, including :— the methods of examining various organs and other parts of the body, in order to detect the evidence of disease or the effect of accidents, the employment of instruments and apparatus used in diagnosis or treatment, the examination of the Urine and other secretions, and of morbid products ;

ε. Served at least three months as a dresser in the Surgical wards, and three months as a Clinical Clerk in the Medical wards of a recognized Hospital, and reported at least 10 Medical and 10 Surgical cases, or of having done other equivalent practical work in Surgery and Medicine\* ;

ζ. Attended at least four cases of midwifery, under a recognized practitioner\* ;

η. Attended the Post Mortem Examinations in a recognized Hospital for a period of at least six months, during which they have received practical instruction in the methods of making Post Mortem Examinations and in framing Reports. such certificates to be accompanied by reports of at least six autopsies which the candidate has attended.

θ. Received instruction and attained proficiency in the practice of Vaccination, under a recognized medical practitioner.\*

(3) Candidates who have not passed Sect. A of the Final Examination, may, by *special* permission of the Faculty, be allowed to complete their Final Examination in both sections at the same time.

2. The Final M. D., C. M. Examination will be held in the second and third weeks in April. Candidates are required to hand in their applications and to transmit as far as possible the certificates specified above for Section A or Section B, as the case may be, to the Secretary of the Faculty, at least fourteen days before the date of the examination, and the remainder of the required certificates not less than two days before the date of the Examination, and to enter their names in the register of undergraduates before the date of the examination, and to pay before the date of the examination, one-sixth of the amount of the graduation fee in the case of candidates for Section A, and one-third of the graduation fee in the case of candidates for Section B.

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\*Blank certificates will be issued to candidates, which must be filled out and signed by the proper authorities.

3. Candidates who may have been exempted from passing the Primary Examination under the provisions of §LXIII 1, (A) (3), (B) (3) (b) will be required to pay the balance of the full graduation fee before being admitted to the last part of the Final Examination.

4. A candidate having failed to make 50% in any subject of Sect. B of the Final Examination will also be required to pass again in any other subject in which he may have made less than 60% with or without evidence of further attendance on such subject or subjects as the Faculty, in their discretion may determine. At all such Supplementary Examinations candidates are required to make at least 60% in each subject.

**§ LXV.—Medals and Prizes.**—MEDICAL FACULTY MEDAL.—This Medal will be awarded on graduation to the student who stands first at the Final M. D., C. M. Examination (Section B), provided he shall have obtained distinction in at least three of the five subjects of examination.

DR. LINDSAY'S PRIZE.—A prize of Books will be awarded to the student who stands first among those taking Section B of the Primary M. D., C. M. Examination, provided he shall have obtained distinction in at least two of the three subjects of examination.

THE SIMSON PRIZE.—An Annual Prize of twenty-five dollars is offered by Frank Simson, Esq., to be awarded to the student who, at the end of his third year, has during his course, passed the best examinations in Chemistry, Practical Chemistry, Materia Medica and Therapeutics.

**§ LXVI.—Residence, Discipline, Academic Costume.**—For regulations see §§ II, IV, VII University Calendar.

**LXVII.—Sponsio Academica.**—Before receiving his degree, the candidate will be required to sign the following oath or affirmation :

SPONSIO ACADEMICA.

In facultate Medicinæ Universitatis Dalhousianæ.

Ego, Doctoratus in Arte Medica titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo :—me in omni grati animi officio erga Universitatem Dalhousianam ad extremum vitæ halitum, preseveraturum. Tum porro Artem Medicam caute, caste, probeque exercitaturum et quoad poterò, omnia ad ægrotorum corporum salutem conducentia, cum fide procuraturum. Quæ denique, inter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.



# Institutions.

## THE UNIVERSITY LIBRARIES.\*

The Arts Library was instituted in 1868, as the result of an appeal made by the Rev. George M. Grant, at Convocation in 1867. Until 1888 the number of volumes did not exceed 3,000; to-day there are about 12,000 volumes and 3,000 pamphlets.

When the Law Faculty was organized in 1883, the Dean received a number of very generous contributions for a Library. A useful collection of Law books was secured, partly through the exertions of the late Mr. Bulmer. To-day the number of volumes exceeds 7,000.

The Arts Library contains the MACKENZIE COLLECTION of works on Mathematical and Physical Science, which was presented to the College by the relatives of the late Professor J. J. MacKenzie; the ROBERT MORROW COLLECTION of works on Northern Antiquities and Languages, presented by Mrs. Robert Morrow; the SETH COLLECTION of Philosophical works, purchased with the proceeds of a course of public lectures on Psychology given by Professor James Seth; the DEMILLE MEMORIAL, presented by Professor MacMechan from the proceeds of a course of Lectures on Shakspeare; the LAWSON LIBRARY, presented by the daughters of the late Professor George Lawson, LL. D.; the McCULLOCH COLLECTION, from the Library of the late Rev. W. McCulloch, D. D.; the EDWIN P. ROBINS MEMORIAL COLLECTION of Philosophical books; the MACDONALD LIBRARY, presented by the son of the late Professor Charles Macdonald, M. A.; the DEMILLE COLLECTION, presented by Mrs. J. DeMille; also the following CLASS MEMORIAL COLLECTIONS:—

Class of 1894: Classical Dictionaries.

Class of 1895: Sophocles' Plays and Bacon's Works.

Class of 1896: Jesuits' Relations.

Class of 1897: Dryden's Works, and Economics.

Class of 1898: Standard Editions of Plato and of Aristotle.

\*Students have access, subject to certain conditions, to the Citizens' Free Library, the Legislative Library, and the Libraries of the N. S. Institute of Science and of the Mining Society. Of the other Libraries in the city, the Garrison Library and the Law Library of the Barristers' Society should be mentioned.

Class of 1899 : New English Dictionary, General Literature.

Class of 1900 : Dictionary of National Biography.

Class of 1901 : Supplementary volumes of the Encyclopædia Britannica, Mathematical and Physical Books.

Class of 1902 : Works on Geology and Metallurgy.

Class of 1903 : Darwin's Works, Stevenson's Works.

The Class memorials are the most important contributions to the Library. The set of the *Jesuits' Relations*, seventy-three volumes in all, is now complete, and to its cost the class of 1896 has contributed \$210. Two more volumes have been added to the New English Dictionary. This is part of the gift of the class of 1899, whose total contributions have now reached the large sum of \$257.17. The Class of 1901 has given \$125.84, which has been expended on the Supplementary Volumes of the Encyclopædia Britannica and on Mathematical and Physical Books. The gift of the Class of 1903 is devoted to the purchase of works on Geology, Metallurgy, and Astronomy. Complete sets of the works of Darwin and Stevenson have been obtained with part of the gift of the Class of 1903. The Class of 1904 has given \$179.34. These gifts reflect the greatest credit both on the givers and the College that has such generous students.

The Accession book shows that about 460 books and pamphlets were given to the Library during the session 1902-03.

The following graduates have presented copies of their publications to the Library :

James Barnes, M. A. : *Analysis of Bright Spectrum Lines, Light scattered and transmitted by fine particles* ; Rev. P. M. Macdonald, M. A. : *Letters from the Canadian West* ; Professor D. A. Murray : *Infinitesimal Calculus* ; W. H. Ross, M. Sc. : *Contribution to the Study of Hydroxylamine and its Salts*.

Books have been received from :—Various funds, 118 ; Macmillan & Co., 31 ; Professor MacMechan, 10 ; A. H. R. Fraser, 10 ; E. W. Nichols, 10 ; Professor Woodman, 7 ; President Forrest, 4 ; G. M. Acklom, 4 ; Walter Crowe, 2 ; St. Andrew's University, 2 ; H. W. Toombs, 2 ; Professor W. C. Murray, 7 ; Rev. E. A. Cooke, 1 ; J. J. Anderson, 1. *Theses* (20) have been received from Johns Hopkins University. The American Museum of National History (New York) has given a complete set of reports, memoirs, and bulletins.



Reports have been received from:—Dominion Government, 28; U. S. Government, 15; British Columbia Government, 10; Ontario Government, 5; Smithsonian Institution, University of Michigan, University of the State of New York, 4 each; Historical Society of Manitoba, 3; N. S. Government, Lowell Observatory, Y. M. C. A., 2 each; N. Y. State Museum, Natural History Society of N. B., Toronto Public Library, Governments of Manitoba, North-West Territory, New Brunswick, Quebec, Prince Edward Island, 1 each.

Calendars and Reports have been received from the following Universities and Colleges:—Edinburgh, Glasgow, Aberdeen, St. Andrews, Birmingham, Bristol, Dublin, Trinity College (Dublin), Sydney, Adelaide, Manitoba, St. Boniface, Toronto, Trinity (Toronto), Toronto School of Practical Science, Queen's, Ottawa, McGill, Laval, Wesleyan College (Montreal), Bishop's, New Brunswick, Mount Allison, St. Joseph's, Acadia, St. Francis Xavier, Presbyterian College (Halifax), Prince of Wales, Royal Military College, Montpelier, Lille, Harvard, Columbia, Pennsylvania, Johns Hopkins, Chicago, Northwestern, Michigan, Nebraska, Yale, Wisconsin, Hobart, Howard, Brown, Vassar, Bryn Mawr, Niagara, Massachusetts Institute of Technology, Detroit College of Medicine, Auburn Theological Seminary, Hartford Theological Seminary, Union Theological Seminary.

Periodicals have been regularly placed on the reading tables and in many cases given to the library by the following:—Professor W. C. Murray: *Nation*, *International*, *Journal of Ethics*, *Psychological Review*, *Philosophical Review*, *Educational Review* (N. Y.); Professor E. Mackay: *Weekly Times*, *Popular Science Monthly*; Professor J. E. Woodman: *The World's Work*, *Outlook*, *Harvard Graduates' Magazine*; Professor H. Murray: *American Review of Reviews*, *McClure*, *Cosmopolitan*; Professor Falconer: *Spectator*; Professor Weldon: *Contemporary Review*; Professor MacMechan: *Monthly Review*, *Queen's Quarterly*; Miss Eliza Ritchie: *Academy and Literature*; Professor D. A. Murray: *Fortnightly*, *Science*; Professor Dixon: *Nature*; A. H. R. Fraser-Esq., LL. B.: *American Historical Review*, *Economic Studies*, *Publications of American Economic Association*.

The Library has been open five days each week of the Session from 10 to 1 and from 3 to 5 p. m. Between fifty and sixty readers per day made use of the Library. Students have free access to all catalogued books. At the end of April thirty-four books were unaccounted for.

The duties of Assistant to the Librarian were efficiently discharged by Mr. John Barnett.

Abstract of Current Class Memorial Accounts :—

CLASS OF 1899.

*Receipts.*

1903, May 11. Reported to date . . . . . \$256 66

*Expenditures.*

1902, May 10. Reported to date . . . . . 231 55  
1903 Historical and Mathematical works . . . . . 25 62

CLASS OF 1901.

*Receipts.*

1903, May 8. Reported to date . . . . . 114 84  
1904. Additions to fund . . . . . 11 00

125 84

*Expenditures.*

1903, May 8. Supplementary volumes of the Encyclopædia  
Britannica . . . . . 71 25  
Works in Philosophy, Mathematics and  
Physics . . . . . 49 50

120 75

CLASS OF 1902.

1902, May 10. Reported to date . . . . . 100 00  
1904, May 10. Interest . . . . . 7 00

107 00

*Expenditures.*

1903-4. Works on Geology and Metallurgy . . . . . 46 61  
Balance to be expended on works on Metal-  
lurgy and Astronomy.

CLASS OF 1903.

1903, Oct. Amount received . . . . . 107 00

*Expenditures.*

1903-4. Darwin's works . . . . . 32 00  
Stephenson's works . . . . . 52 00

84 00

CLASS OF 1904.

1904, April 27. Amount received . . . . . 179 34

The Library Committee for the Session 1904-5 consists of the Librarian and Professors MacMechan and Walter Murray.

## MACDONALD MEMORIAL LIBRARY FUND.

## GENERAL COMMITTEE.

John F. Stairs,	F. J. A. McKittrick,
President Forrest,	W. E. Maclellan,
Principal Pollok,	Robert Maclellan,
Dr. A. H. MacKay,	E. A. Macleod,
Judge Trueman,	Rev. D. Macrae, D. D.,
A. S. Barnstead,	Dr. W. H. Magee,
George S. Campbell,	Rev. E. D. Millar, D. D.,
W. R. Campbell,	A. M. Morrison,
Rev. A. F. Carr, D. D.,	Alexander Robinson,
Prof. J. E. Creighton,	George S. Robinson,
Alfred Dickie,	Judge Sedgewick,
D. Finlayson, M. P. P.,	Principal Soloan,
Judge Fraser,	Dr. John Stewart,
Prof. A. R. Hill,	J. J. Stewart,
Prof. F. E. Jordan,	Dr. Dugald Stewart,
Dr. A. W. H. Lindsay,	F. I. Stewart,
Douglas McIntosh,	H. M. Stramberg,
Prof. A. S. Mackenzie,	Prof. John Waddell.

EXECUTIVE COMMITTEE.—Prof. E. Mackay, *Chairman*; S. A. Morton, M. A., *Secretary*; G. M. Campbell, M. D.; J. W. Logan; Prof. D. A. Murray; George Patterson, M. A., M. P. P.; Theodore Ross; G. A. R. Rowlings; G. H. Sedgewick; H. B. Stairs.

The Board of Governors has agreed that as soon as the subscriptions to the Fund shall reach the sum of twenty-five thousand dollars, and the amount of cash paid thereon eight thousand dollars, the Board will undertake the erection of the Library Building. On May 1, 1904, the state of the Fund was: Amount subscribed, \$23,761.00; Cash paid thereon, \$7,300.00.

At a meeting held after Convocation on April 28, 1903, a committee on plans and specifications was appointed, consisting of John F. Stairs, *Chairman*; George S. Campbell, J. J. Stewart, J. W. Logan, Prof. Howard Murray, Hugh Mackenzie, A. K. Maclean, M. P. P., R. M. MacGregor, G. A. R. Rowlings, S. N. Robertson, and Dr. W. G. Putnam. This Committee has asked architects to submit plans.

The following portraits, views and busts have been presented to the College and are placed in the Libraries:

Portrait of George Munro, painted by J. Colln Forbes, and presented by Helen Munro Schurman; Portrait of Sir William Young, painted by Barrett, and presented by the Faculty of Arts; Portrait of Lord Dalhousie, painted by J. Watson Gordon, and engraved by Thomas Lipton, presented by Professor MacGregor; Portrait of John Young ("Agricola") presented by his son, Judge Young, of Prince Edward Island; Portrait of Mr. Justice Ritchie, presented by his daughters; an engraving of Faed's "Scott and his Literary Friends"; an engraved view from Cowie's Hill in 1805, showing

Melville Island, also an original Drawing of Halifax from Fort Needham, both presented by Miss Eliza Ritchie, Ph. D.; Photograph of a portrait of "Sam Slick" presented by his daughter, Mrs. Weldon; Photograph of Mr. Justice Sedgewick; Photograph of "Old Dalhousie"; Bust of John Locke, presented by Professor MacGregor.

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## THE UNIVERSITY LABORATORIES.

The laboratories are in charge of the professors of the departments for which they were established. A committee, consisting of the President and Professors Mackay, Dixon, Woodman and Sexton, is appointed by the Senate to authorize and supervise all expenditures on the laboratories and museum, subject to the approval of the Board of Governors.

The Chemical Laboratory, comprises a general laboratory with working accommodation for 80 students and a quantitative laboratory accommodating 16 students, with additional rooms for weighing and for storing apparatus and reagents.

The Physical Laboratory occupies a main laboratory, affording accommodation for 16 students working simultaneously, and several smaller adjoining rooms.

The Geological Laboratory occupies a large, well-appointed room, having 1500 feet of floor space, and two smaller rooms. The main laboratory accommodates 16 students working simultaneously. One of the smaller rooms is fitted for photographic work. The laboratory contains good collections, constantly being added to, of typical rock and mineral specimens, as well as collections of crystals, crystal models, geological maps, etc., for class instruction.

The Biological Laboratory accommodates about 25 students doing simultaneous microscopic work.

The Assaying Laboratory, recently completed, contains one muffle furnace and two pot furnaces, with their accessories, and separate working desks for 12 students.

The new Mining Laboratory will be ready for occupation it is expected, at the opening of the Session. The machinery being installed includes a stamp-mill, crushers, jigs, a Wilfley table, and other appliances necessary for the complete testing of ores.

The following donations have been made to the laboratories :

## To the Physical Laboratory :

From the Canadian General Electric Co., through F. Nichols, Esq:

A motor-generator set, consisting of a 2 H. P. induction motor and a direct current generator; a switch-board with one astatic voltmeter, two astatic ammeters, rheostat, automatic cut-outs, fuses and switches.

From the Alumni Association :

A storage battery of 26 "chloride-accumulator" cells, including cost of installation.

From Dr. A. P. Reid :

A motor-car storage cell.

## To the Geological Laboratory :

From the Alumni Association :

A petrographic microscope; a collection of rock and mineral specimens; a collection of crystals.

From John Moffatt, Esq., Glace Bay :

A fine collection of local fossils.

## To the Mining Laboratory :

From the Massachusetts Institute of Technology :

A Collom jig; an experimental Bartlett table.

From the Canadian Rand Drill Co :

A compressor.

From the Truro Foundry Co. :

A Wilfley table.

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 THE UNIVERSITY MUSEUM.

The Museum\* consists chiefly of the THOMAS McCULLOCH and the PATTERSON COLLECTIONS.

THE THOMAS McCULLOCH COLLECTION was presented to the University in 1881, by the late Rev. William McCulloch, D. D., of Truro, with a fund of \$1,400 for extending the collection. It formed the museum of Professor Thomas McCulloch, who occupied the chair of Natural Philosophy

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\*The Provincial Museum, in the New Provincial Building, contains collections illustrating the Mineralogy, Geology, and Zoology of the Province, and is open to the public daily. It may be conveniently used by students.

from 1863 to 1865. It contains a large and valuable collection of birds, especially of the native birds of the Maritime Provinces, many specimens of minerals, especially of Nova Scotian species, also rock specimens, a set of Carboniferous fossils, chiefly Nova Scotian, and a collection of European Cretaceous fossils, Indian implements, shells of recent Mollusca, native plants, etc. These collections were made in part by Rev. Thomas McCulloch, D. D., the first president of the College. The McCulloch collection of birds has recently been increased by additions paid for out of the McCulloch Museum Fund. An arrangement has been made with Mr. T. J. Egan, by which his valuable collection, containing about 30 cases of native birds, has been placed in the Museum on loan. The geological and mineralogical specimens of the McCulloch Collection are kept in the geological laboratory.

THE PATTERSON ARCHEOLOGICAL COLLECTION.—This collection of Indian Antiquities was made by the late Rev. George Patterson, D. D., LL. D., F. R. S. C., while engaged during a number of years in researches regarding the history and mode of life of the aborigines of Nova Scotia. The collection was presented by him to the College in 1889, on the condition that the Governors should make suitable "provision for the preservation and exhibition of the same in such a manner as is usual in well managed Museums." It is kept as a separate collection. It contains 288 specimens, separately catalogued, and is arranged conveniently for reference. About 250 of the specimens have been obtained in Nova Scotia. They illustrate the stone age of its original inhabitants, and form an almost complete representation of the articles usually found among the remains of the native races of North America. There are also a number of similar articles from the United States, Scotland, the West Indies, and especially the New Hebrides. The classified catalogue of the collection, which is arranged according to the method adopted in the description of the archæological collections of the Smithsonian Institution, contains full particulars of the localities where the several specimens were obtained.

The Zoological Section of the Museum, containing between 500 and 600 specimens, was catalogued by the late Dr. A. Halliday, Lecturer on Zoology.

## THE GYMNASIUM.

All male students on paying the regular fee of one dollar and fifty cents, are entitled to the services of the Instructor, and to the use of the Gymnasium. During the past session instruction was given by Sergt.-Major Long.

The Gymnasium is under the management of a Committee of Six, of whom three are appointed by the Senate and three by the Dalhousie Amateur Athletic Club. The representatives of the Senate for the year 1904-5 are President Forrest, Professors Liechti and H. Murray.

Drs. George M. Campbell and W. D. Forrest are examining Physicians for the College.

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## THE ALUMNI ASSOCIATION.

(Incorporated 1876.)

### EXTRACT FROM THE LAWS.

1. The object of the Association shall be the promotion of the interests of the University.
2. The Association shall consist of Ordinary and Associate Members.
3. All Graduates of the University, all persons who during at least one academic year have been registered students, either of Dalhousie College or of other colleges which have been merged in or united with Dalhousie College, and all other persons who have at any time been educated by means of the funds of Dalhousie College, shall be eligible for ordinary membership. But no persons other than graduates shall become members until three years have elapsed from the date of their first entering the college, except by special permission of the Executive.
4. Persons not eligible for membership under Section 3 may be elected Associate Members.

### ABSTRACT OF MINUTES OF ANNUAL MEETING.

The Thirty-second Annual Meeting of the Association was held in the Munro Room of the College, Monday, April 25th, at 8 p. m., the President, Mr. J. H. Trefry, M. A., in the chair.

The report of the Executive Committee, the Treasurer, and the Dean of the Science Faculty were read and adopted.

The membership of the Association has been increased during the year by 37, making the total number 315.

The financial standing of the Association is shown in the Treasurer's statement as below :—

THE ALUMNI ASSOCIATION OF DALHOUSIE COLLEGE *in account with S. A. MORTON, Treasurer.*

*Receipts.*

1903.			
April 25.	Balance.....	\$326	69
June 19.	W. R. Fraser, special contribution and dues.....	50	00
30.	Interest, Government savings bank .....	6	88
1904.			
Feb. 29.	Graham Creighton, special contribution and dues	10	00
April 22.	A member, special contribution and dues.....	10	00
23.	Members' dues during the year.....	217	09
			<hr/>
		\$620	57

*Disbursements.*

1903.			
Sept. 23.	Prof. Mackay, grant to the Science Faculty. ....	250	00
Oct. 24.	McAlpine Publishing Co., printing Annual Report	12	50
1904.			
Jan. 20.	T. C. Allen & Co., file, index drawer and printing	13	00
April 20.	S. A. Morton, Directory of Alumni, etc.....	50	00
23.	Postage during the year.....	28	25
"	Discount on checks, etc.....	1	06
"	Balance.....	265	76
			<hr/>
		\$620	57

The following are the officers of the C. B. Branch :—

<i>Honorary President</i> .....	CHAS. S. CAMERON, B.A.
<i>President</i> .....	E. A. MACLEOD, B.A., LL.B.
<i>Vice-President for Cape Breton Co.</i> ....	R. F. PHALEN, LL.B.
"	<i>Richmond Co.</i> .....M. G. MACNEIL, LL.B.
"	<i>Inverness Co.</i> .....D. S. MACINTOSH, B.A., B.SC.
"	<i>Victoria Co.</i> ... .G. F. MACRAE.
<i>Secretary</i> .....	N. J. LOCKHART, LL.B.
<i>Treasurer</i> .....	J. W. G. MORRISON, B.A.
<i>Executive Committee</i> :	G. A. R. ROWLINGS, B.A., LL.B.; G. H. MURPHY, M.D.; M. T. MCLEAN, M.D.; CHARLES J. BURCHELL, M.A., LL.B.; F. B. A. CHIPMAN, M.A., LL.B.

Dr. E. Mackay, Dean of the Science Faculty, reported that the Faculty of Science obtained \$335.12 from the Alumni



Society, and this was divided between the departments of Geology and Biology. The department of Biology received \$87.82. The department of Geology received \$247.30, which was expended on apparatus and specimens needed in the classwork.

The usual grant to the Science Faculty was continued, and the amount was increased to \$450.

Applications from members of the Graduating Classes for membership in the Association were read, and the applicants duly elected.

The following officers were elected for the ensuing year.

<i>President</i> .....	J. H. TREFRY, M. A.
<i>1st Vice-President</i> .....	J. W. LOGAN, B. A.
<i>2nd</i> ".....	E. D. FARRELL, M. D.
<i>Secretary-Treasurer</i> .....	S. A. MORTON, M. A.
<i>Other Members of the Executive Committee</i> .....	A. S. BARNSTEAD, B. A., LL. B.
	J. W. WELDON, B. A., LL. B.
	W. J. LEAHY, LL. B.
	E. MACKAY, PH. D.
<i>Auditors</i> .....	D. A. MURRAY, PH. D.
	G. K. BUTLER, M. A.
	J. F. PUTNAM, B. A.

## STUDENTS' SOCIETIES.

### University Students' Council.

Meetings are held regularly in November and February to conduct business in which all the Students of the University are interested. Special meetings may be called by the President at any time.

<i>President</i> .....	W. S. MACDONALD, B. A.
<i>Vice-Presidents</i> .....	V. H. SHAW.
	A. R. MCBAIN.
	J. B. MORROW.
<i>Secretary-Treasurer</i> .....	A. S. PAYZANT.
<i>Executive Committee</i> .....	T. G. MACKENZIE.
	W. H. COFFIN, B. A.
	R. C. BUCKLEV.
	A. A. MACGILLIVRAY.
<i>Reading Room Committee</i> .....	J. H. CHARMAN.
	A. MOXON.
	C. T. BAILLIE.

The DALHOUSIE GAZETTE is published by the students of the University under the authority of the Council.

The following have been appointed by the students of the Arts and Science Faculties as Editors for 1904-5:—

R. B. FORSYTHE, (Arts, '05).	V. H. SHAW, (Law, '05).
H. C. FRASER, (Arts, '06).	J. A. PROUDFOOT, (Med, '05).
<i>Financial Editor</i> .....	C. J. DAVIS.

Others will be appointed at the opening of the Session by the lady students, and the students of the Faculties of Law and Medicine.

#### Arts and Science Students' Society.

This Society meets in October and April to conduct business in which the Arts and Science Students alone are interested. Special meetings may be called at any time by the President.

##### OFFICERS.

<i>President</i> .....	J. BARNETT.
<i>Vice-President</i> .....	C. G. CUMMING.
<i>Secretary-Treasurer</i> .....	G. L. McCAIN.
<i>Executive Committee</i> .....	{ G. M. J. MACKAY.
	{ A. S. PAYZANT.
	{ H. PATTERSON.

#### Law Students' Society.

This Society meets at the opening of the Session for general business, and thereafter at such times as the President may deem necessary.

##### OFFICERS.

<i>President</i> .....	J. A. REDMOND.
<i>Vice-President</i> .....	B. W. ROSCOE, B. A.
<i>Secretary-Treasurer</i> .....	B. S. COREY.
<i>Executive Committee</i> .....	{ G. O. CHASE, B. A.
	{ W. M. FOSTER.
	{ B. GRAHAM.

#### The Mock Parliament.

The Mock Parliament meets every Saturday night until the Christmas vacation. All students of the University are welcome, but only students taking Law Classes are allowed to take part in the debates, which are wholly of a political character on current questions.

## OFFICERS.

<i>Speaker</i> .....	R. TRITES.
<i>Deputy Speaker</i> .....	J. J. CAMERON.
<i>Clerk</i> .....	E. C. LOCKE.
<i>Sergeant-at-Arms</i> .....	T. CHURCH.

## The Moot Court.

The Moot Court is intended for law students only, so far as arguing is concerned. It is conducted as nearly as possible after the manner of the Supreme Courts; and all law students of second and third years' standing are required to take part in at least one case during the session. (See Law Faculty).

## The Medical Debating Club.

The meetings of this Society are held weekly throughout the session. Topics of general interest are discussed, and papers on medical subjects are read.

## OFFICERS.

<i>President</i> .....	F. W. JARDINE.
<i>Vice-President</i> .....	MARY MACKENZIE.
<i>Secretary</i> .....	J. C. BALLEM.
<i>Treasurer</i> .....	D. R. MCRAE.
<i>Executive Committee</i> .....	A. F. MILLER.
	J. A. PROUDFOOT.
	W. S. MACDONALD, B. A.
	P. MCF. CARTER.

## The Sodales Debating Club.

The Sodales Debating Club meets fortnightly during the session, subjects of general interest being discussed. A series of lectures by prominent public men will be given under the auspices of the club.

<i>Honorary President</i> .....	PROF. S. M. DIXON.
<i>President</i> .....	G. M. J. MACKAY.
<i>Vice-President</i> .....	J. BURNETT.
<i>Secretary-Treasurer</i> .....	M. A. LINDSAY, B. SC.
<i>Executive Committee</i> .....	G. M. J. MACKAY, (Arts)
	W. C. ROBERTSON, (Law).
	N. MACDONALD, (Medicine).
	J. A. FERGUSON, (Science).
<i>Lecture Course Committee</i> .....	L. BREHAUT.
	D. G. DAVIS.
	E. B. ROSS.
	E. BLACKADAR.
	J. A. REDMOND.

### Young Men's Christian Association.

Meetings of the Association are held every Saturday evening at the College.

#### OFFICERS.

<i>Honorary President</i> .....	PROF. WALTER MURRAY.
<i>President</i> .....	W. I. GREEN.
<i>Vice-President</i> .....	H. F. MACRAE.
<i>Recording Secretary</i> .....	H. C. FRASER.
<i>Corresponding Secretary</i> .....	N. G. CAMPBELL.
<i>Treasurer</i> .....	H. MILLER.

### Young Women's Christian Association.

Meetings of the Association are held every Monday afternoon at 5 o'clock.

#### OFFICERS.

<i>President</i> .....	MINNIE G. SPENCER.
<i>Vice-President</i> .....	ANNA E. MCLEOD.
<i>Treasurer</i> .....	ETHEL M. MUNRO.
<i>Recording Secretary</i> .....	LOTTIE L. ROSS.
<i>Corresponding Secretary</i> .....	LINA GRANT.

### The Dalhousie Amateur Athletic Club.

<i>Honorary President</i> .....	PRESIDENT FORREST.
<i>President</i> .....	C. MACDONALD.
<i>Vice-President</i> .....	T. T. FULTON.
<i>Secretary</i> .....	C. T. BAILLIE.
<i>Honorary Treasurer</i> .....	G. M. J. MACKAY.

<i>Executive Committee</i> .....	J. RANKINE, B. A.
	W. F. CARROLL, B. A.
	M. A. LINDSAY, B. Sc.
	H. MILLER.
	HORACE A. DICKEY.
<i>Captain</i> .....	E. CHURCH.
<i>Trophy Committee</i> .....	E. CHURCH.
	H. A. DICKIE.
<i>Grounds Committee</i> .....	J. A. MCKINNON, B. A., LL. B.
	R. T. MACILREITH, LL. B.
	J. C. O'MULLIN, LL. B.
<i>Auditors</i> .....	T. G. MACKENZIE,
	W. M. CORBETT, B. A.

### The Glee Club.

The Club meets once a week for practice of glees and choruses.

#### OFFICERS.

<i>Honorary President</i> .....	PROF. S. M. DIXON.
<i>President</i> .....	C. T. BAILLIE.
<i>Vice-President</i> .....	MINNIE SPENEER.
<i>Secretary-Treasurer</i> .....	J. M. BEATON.

	}	DALMENEY MILLER.
		MABEL MURRAY.
<i>Executive Committee</i> .....		F. F. SMITH.
		O. HILL.
		E. A. KIRKER.
<i>Conductor</i> .....	C. B. WIKEL.	
<i>Accompanist</i> .....	G. ISABELLA WOOD.	

**The Delta-Gamma Society.**

The Delta-Gamma Society meets bi-monthly during the session. All lady students are eligible for membership. Debates are held, and literary programmes are prepared.

OFFICERS.

<i>President</i> .....	HATTIE M. BAYER.
<i>Vice-President</i> .....	ELIZA MACKENZIE.
<i>Secretary</i> .....	ELEANOR STANFIELD.
<i>Treasurer</i> .....	JOYCE HARRIS.

**The Philosophical Club**

This Society meets five or six times during the session, when papers are read by different members.

<i>Honorary President</i> .....	PROF. WALTER MURRAY.
<i>President</i> .....	E. B. ROSS.
<i>Secretary</i> .....	C. J. CROWDIS.

**AFFILIATED COLLEGES.**

**The Prince of Wales College.**

(Founded in 1860.)

STAFF.

- S. N. ROBERTSON, M. A. (Dal.), Principal, *Latin, Greek and School Management.*
- H. H. SHAW, B. Sc. (McGill), Vice-Principal, *Chemistry, Physics and Psychology.*
- E. E. JORDAN, M. A. (Dal), *Mathematics and Book-keeping.*
- C. J. MACMILLAN, M. A. (McGill), *English and History.*
- E. J. MACMILLAN, B. Sc. A. (Tor), *Agriculture and Botany.*
- J. D. COLLIER, *Drawing and Manual Training.*
- J. A. MACDONALD, B. A. (Laval), *French and Latin.*

Prince of Wales College, Charlottetown, was amalgamated with the Provincial Normal School of Prince Edward Island

in 1879. The institution, as at present conducted, is intended to provide for young people of both sexes a liberal education in Literature and Science, and also to educate and train the teachers for the Public Schools of the Province. Its curriculum is conformed to the common needs of the teacher and of the student seeking a general education.

The College course is planned for a term of three years. Admission to the College is to the First Year, or local class. Students who attain a high mark at the matriculation examination will be permitted, if on further examination found worthy, to enter the Second Year.

To the Second Year are admitted all students who have made 60 per cent. in the examinations of the First Year, and also those persons who hold a Provincial license of the Second Class.

To the Third Year are admitted those who have made 60 per cent. in the Second Year work, and also those persons who hold a license of the First Class.

At the close of the session Honour Diplomas are granted to Third Year students who make over 65 per cent. in the examinations of their year; to those students who have shown throughout their course exceptional merit, High Honour Diplomas are issued.

Certificates are granted to Second Year students who make an average of 65 per cent. in the examinations of their year. These certificates entitle their holders to First-Class license without further examination, providing that Normal training has also been taken.

Students holding High Honour Diplomas are admitted to the Third Year of the B. A. Course in Dalhousie, those holding Honour Diplomas to the Second, those holding certificates or First Class licenses to the First Year.

#### Halifax Ladies' College.

*Principal* ..... REV. ROBERT LAING, M. A.

The object of the College is to provide a liberal education for girls and young women. It has three departments of study—the Primary, the Preparatory and the Collegiate.

In the Collegiate department the course of study extends over four years, and includes English, French, German, Latin, Greek (optional), Mathematics and Elementary

Science. The teaching staff in this department for 1903-4 was as follows :

- MISS M. E. WINDSOR (Newnham College), Honours Mathematical Tripos, Cambridge, *Mathematics*.  
 MRS. J. S. TRUEMAN, M. A., Dalhousie, *History, Literature and Latin*.  
 MISS ELIZA HUNTER, B. A., New Brunswick University, (absent on leave).  
 MISS MARY OLLER, B. A., Smith College, *Science*.  
 MISS FRANCES CAMERON, B. A., McGill, (Honours Mod. Languages), Certificat des Etudes Francaises (Grenoble University), *Modern Languages*.  
 HERR H. LOTHAR BOBER, M. A., *French and German*. Saturday Conversation Classes.  
 MISS HELEN VEALE, M. A., London, *English and English Literature*.  
 MISS NORA MCKAY, B. A., Dalhousie, *Primary Department*.  
 MISS ELLEN M. OLSON, Emerson School of Oratory, Boston, *Elocution*.  
 MISS HELEN MOWAT, *Art*.  
 MISS M. E. FLETCHER, *Stenography*.  
 MISS NORA MCKAY, B. A., Dalhousie, *Stenography and Typewriting*.  
 MISS JEAN CAMERON, Boston Cooking School, *Household Science*.  
 SERGT-MAJOR LONG, Army Gym. Staff, *Gymnastics and Calisthenics*.

Young women who have completed a four years' course are admitted to the first year in the Arts and Science Faculties in this University without examination in subjects which formed parts of the course.

The College Buildings include a Hall or Residence as well as Class Rooms and an Assembly Hall.

The College has an Art Studio, in which instruction in Fine Art is given by Miss Helen Mowat.

#### Halifax Conservatory of Music.

President.....REV. ROBERT LAING, M. A.

#### FACULTY OF INSTRUCTION.

- Piano*—MR. PERCY GORDON, Royal Conservatory at Leipsic.  
 “ MRS. M. WALLACE.  
 “ MR. J. H. LOGAN, Royal Hochschule at Berlin, and pupil of Godowsky.  
 “ MISS HELEN TILSLEY, Royal Conservatory at Leipsic.  
 “ MISS ESTHER CLARK, Halifax Conservatory of Music.  
 “ MISS LOUISE C. TUPPER, Halifax Conservatory of Music.  
*Fletcher Music Method*—MISS HELEN TILSLEY.  
*Violin*—MR. EDSON W. MORPHY, New England Conservatory of Music.  
 “ MISS BEATRICE L. WHIDDEN, Royal Conservatory at Leipsic.  
 “ MISS GRACE BILLMAN.

- Voice*—MR. CHARLES B. WIKEL, New York.  
 “ MISS MABEL L. DAVIS, Boston.
- Organ*—MR. PERCY GORDON.  
 “ MR. FRED N. CLARKE.  
 “ MR. J. H. LOGAN.
- Viola*—MR. EDSON W. MORPHY.
- Cello*—MISS MABEL KAISER.
- Clarinet*—MR. HARRY HANSON.
- Cornet*—MR. T. L. COVEY.
- Mandolin and Guitar*—MR. JAMES IVIMEY.  
 “ “ MISS AGNES HARRINGTON.
- String Bass*—MR. HENRY STREETER.
- Theory and Composition*—MR. PERCY GORDON.  
 “ “ MR. J. H. LOGAN.
- Harmony*—MR. PERCY GORDON.
- History of Music*—REV. ROBERT LAING, M. A.
- Violin Normal Department*—MR. EDSON MORPHY.  
 “ “ “ MISS GRACE BILLMAN.
- Orchestral Department*—Strings: Violin, Viola, Cello, Bass  
 Instructors—EDSON W. MORPHY, BEATRICE WHID-  
 DEN, W. F. COOPER, Bandmaster 5th R. G., MABEL  
 KAISER, HENRY STREETER.
- Brass Wind: Cornet, Euphonium, Althorn, French Horn,  
 Slide and Valve Trombone. Instructors—W. F.  
 FRASER, Band Sergeant 5th R. G., T. L. COVEY,  
 JAMES AYTON, late 17th Leicestershire Band.
- Wood Wind: Flute, Clarinet, Oboe, Bassoon. Instruc-  
 tors—JAMES IVIMEY, HARRY HANSON.
- Instruments of Percussion: Drums, etc. Instructor—  
 WILLIAM PUTNAM

The classes in Theory, Composition and Harmony, con-  
 ducted by Mr. Gordon, and in History by Rev. R. Laing,  
 are recognized by this University as qualifying for the  
 Degree of Bachelor of Music.

The Conservatory opens on the first WEDNESDAY of  
 SEPTEMBER, and closes on the last WEDNESDAY of JUNE in  
 each year.

Applications for information should be addressed to the  
 President, REV. ROBERT LAING, Halifax, N. S.



# University Lists.

## DEGREES.

Conferred September 16th, 1903.

### DOCTOR OF MEDICINE AND MASTER OF SURGERY.

EDWIN EGBERT DICKEY, Upper Canning.

LEWIS OBID FULLER, Avonport.

Conferred April 26th, 1904.

### DOCTOR OF LAWS.

(*Honoris Causa.*)

REV. DANIEL MINER GORDON, M. A., D. D. (Glasgow), *Principal of Queen's University*. In recognition of distinguished public services, more particularly to the cause of Education.

REV. ARTEMAS WYMAN SAWYER, B. A. (Dart.), D. D. (Colby), LL. D. (Acadia), *Professor of Metaphysics*, and former *President of Acadia University*. In recognition of long and distinguished services in the cause of Education.

### MASTER OF ARTS.

DUNCAN McDONALD CAMPBELL, B. A., B. Sc.—*By Examination in Mathematics.*

ALFRED EDWARD DAVISS, B. A.—*By Examination in Political Economy,*

REV. ARTHUR WENTWORTH H. EATON, B. A.—*By Thesis on The New York Loyalists in Nova Scotia.*

REV. ALEXANDER LOUIS FRASER, B. A., B. D.—*By Examination in Tennyson.*

ALEXANDER JOHN WILLIAM MYERS, B. A.—*By Examination in Philosophy.*

### MASTER OF SCIENCE.

WILLIAM HORACE ROSS, B. Sc.—*By Thesis on Hydroxylamine and its Salts.*

### BACHELOR OF ARTS.

HARRIET MUIR BAYER ..... Halifax.

ELIZABETH FLORENCE BLACKWOOD ..... Halifax.

ESTELLA MABEL BURRIS ..... Lower Musquodoboit.

MARGARET PRIMROSE DICKSON CAMPBELL ..... Tatamagouche.

CATHERINE McNIVEN ..... New Westminster, B. C.

ELLA DAWSON PERKINS ..... Charlottetown, P. E. I.

JOSEPH LEON ACHAM ..... Trinidad, W. I.

GEORGE ALLEN ANDREW ..... Arichat, C. B.

JOHN CEDRIC BALLEM .....	Mt. Albion, P. E. I.
LOUIS BREHAUT .....	Murray Harbour, P.E. I.
HOWARD DAYNE BRUNT .....	Halifax.
MICHAEL JAMES CARNEY .....	Halifax.
WILLIAM MELVILLE CORBETT .....	Rockburn, Que.
GRAHAM CREIGHTON .....	Halifax.
CHARLES JACOB CROWDIS .....	Margaree, C. B.
DAVID GRAY DAVIS .....	Clifton.
ALEXANDER FERGUSON .....	Port Morien, C. B.
ALLAN CHESTER JOHNSON .....	Loch Broom.
GILBERT WEBSTER LANGILLE .....	River John.
FRANK ROBERT LOGAN .....	Musquodoboit Harbour.
CAMPBELL MACDONALD .....	Sydney, C. B.
JAMES ROLAND MELLISH .....	Halifax.
WILLIAM KENT POWER .....	Halifax.
GEORGE CARRUTHERS READ .....	Summerside, P. E. I.
EDWIN BYRON ROSS .....	Peel, N. B.
JAMES AMOS SCRIMGEOUR .....	Amherst.
ROBERT HIRAM SUTHERLAND .....	River John.
HOWARD DONALD URQUHART .....	St. Peter's C. B.

**BACHELOR OF SCIENCE.**

DANIEL ALEXANDER MCKAY .....	River John
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**BACHELOR OF LAWS.**

ISAAC HARTLEY BELL .....	New Glasgow.
JOHN JAMES CAMERON .....	Port Hawkesbury.
JOHN MCKINLAY CAMERON .....	Pictou.
WILLIAM FRANCIS CARROLL, B. A. (St. F. X.) .....	Margaree Forks, C. B.
GEORGE OWEN CHEESE, B. A. (Oxon.) .....	Bucks, England.
HENRY ALAN DICKIE .....	Truro.
JOHN ARCHIBALD HAVILAND .....	Chatham, N. B.
GORDON SYDNEY HARRINGTON .....	Halifax.
DAVID D McCURDY .....	Sydney, C. B.
THOMAS JOSEPH NEIL MEAGHER .....	Halifax.
LEMUEL JAMES MILLER, B.A. (Dal.) .....	Charlottetown, P. E. I.
RALPH BRECKEN MOUNCE, B. A. (Mt. All.) .....	Avondale.
JAMES ARTHUR REDMOND .....	Pugwash.
BARRY WENTWORTH ROSCOE, B.A. (Acad.) .....	Kentville.
RALEIGH TRITES, B. A (Mt. All.) .....	Sackville, N. S.

**BACHELOR OF ARTS.***(Ad eundem gradum.)*

REV. ARTHUR WENTWORTH H. EATON, B.A.,	New York.
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**BACHELOR OF LAWS.***(Ad eundem gradum.)*

WILLIAM EDWARD MACLELLAN, LL. B. ....	Halifax.
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## DOCTOR OF MEDICINE AND MASTER OF SURGERY.

CLARENCE EDWARD AVERY BUCKLEY	Halifax.
JAMES BEARISTO CHAMPION	Alberton, P. E. I.
ALLAN RUPERT CUNNINGHAM, B.A. (Dal.)	Dartmouth.
WILLIAM O'BAN FARQUHARSON, B.A. (Dal.)	Halifax.
FREDERICK W. JARDINE	Freetown, P. E. I.
THOMAS ROSS JOHNSON	Onslow Mountain, Col.
MURDOCH ALEXANDER MACAULAY	Glace Bay, C. B.
THOMAS HENRY MACDONALD	New Glasgow.
ELIZA MARGARET MACKENZIE	Flat River, P. E. I.
JEMIMA MACKENZIE	Waterside, Pictou
STELLA MAY MESSINGER	Tupperville, Annapolis.
ARTHUR FREDERICK MILLER	Charlottetown, P. E. I.
BLANCHE MARGARET MUNRO	Antigonish, N. S.
FREDERICK WILLIAM HARCOURT PILOT	St. John's, Nfld.
JOHN RANKINE, B.A. (Dal.)	Halifax.

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HONOURS, PRIZES, Etc., 1903-04.

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HONOURS.
*Classics.*

ALLAN C. JOHNSON..... High Honours.

*Latin and English.*

WILLIAM M. CORBETT ..... Honours.

*Greek and English.*

LOUIS BREHAUT ..... High Honours.

*English and History.*

W. KENT POWER ..... High Honours.

*Philosophy.*

EDWIN B. ROSS ..... High Honours.

CHARLES J. CROWDIS ..... Honours.

## GENERAL DISTINCTION.

E. FLORENCE BLACKWOOD..... Distinction.

HOWARD D. BRUNT ..... Distinction

## MEDALS.

LOUIS BREHAUT ..... University Medal.

W. KENT POWER ..... University Medal.

EDWIN B. ROSS ..... University Medal.

A. R. CUNNINGHAM, B. A..... Medical Faculty Medal.

## SCHOLARSHIPS AND PRIZES.

GILBERT S. STAIRS, B. A.....	Rhodes Scholarship
WILLIAM H. ROSS, B. SC.....	Nomination to 1851 Exhibition
E. FLORENCE BLACKWOOD.....	Avery Prize. [Science Scholarship]
ARTHUR MOXON.....	North British Bursary
CHARLES T. SULLIVAN.....	Waverley Prize.
CECIL L. BLOIS.....	Johnson Mathematical Prize
GEORGE A. DUNN.....	Lindsay Prize.
JAMES A. PROUDFOOT.....	Frank Simson Prize.

*Senior Entrance Scholarships.*

ARTHUR MOXON.....	Professors' Scholarship.
EDWARD NICHOLS.....	Professors' Scholarship.
ANNA E. McLEOD.....	Sir Wm. Young Scholarship.

*Junior Entrance Scholarships.*

JOHN E READ.....	MacKenzie Bursary.
FREDERIC C. KNIGHT.....	Professors' Scholarship.
JAMES H HAMILTON.....	Professors' Scholarship.
WILLIAM C ROSS.....	Sir Wm. Young Scholarship

## EXAMINATIONS, 1903-1904.

## FACULTIES OF ARTS AND SCIENCE.

## MATRICULATION.

## BY EXAMINATION.

SENIOR.—*Passed*: Arthur Moxon, Edward W. Nichols, Anna E. McLeod.

*Passed in Certain Subjects*: S. C. Anderson in *English*; H. J. Fraser, in *Latin and Greek*; Amy K. Pennington, in *Latin, French and English*; J. Barnett and E. B. Ross, in *Latin*; H. D. Brunt, in *German*; D. A. McKay, in *French and German*; A. W. Seaman and L. Thorlief, in *Chemistry*; J. McNiven, in *English and Chemistry*.

JUNIOR.—*First Class*: J. E. Read, F. C. Knight. *Second Class*: J. H. Hamilton; W. C. Ross. *Passed*: Alice E. Gray, Ella Hoffard, Rupert Hagen, C. M. Chapman, Clara E. Lindseth, Mabel A. Lord.

*Passed in Certain Subjects*: D. R. McLean, in *English History and Geometry*; G. E. Mahon, in *Latin, French, English History and Algebra*; Lily Armstrong and A. G. McAulay, in *Algebra*; T. P. Bentley, in *French and Algebra*; Gertrude Ankers in *French, English History and Algebra*; W. P. Grant, in *Latin and Greek*; R. H. Sutherland, in *Latin and French*; H. H. McLeod and D. McLean, in *French and German*; W. M. Ross, T. S. Begin, H.

Miller, in *Greek*; Primrose Campbell, Florence Blackwood, in *French*; G. L. McCain, in *Latin*; J. H. Logan, in *French, German, English and Geometry*; W. W. Woodbury, in *German*.

## BY CERTIFICATE.

SENIOR.—*Passed in all Subjects*: J. G. Bruce, H. S. Patterson, A. W. Seaman.

*Passed in Certain Subjects*: A. C. Harlow and C. T. Sullivan, in all except one foreign language; Blanche E. Murphy, in all except *Algebra, Trigonometry and Chemistry*; Edna P. Sinnott and H. H. MacKenzie, in all except *Mathematics and Chemistry*; C. J. Davis, in *German*; H. H. McLeod, in *English*; E. C. MacKenzie, in *French, English, History and Trigonometry*; Alex. Ferguson, in *Algebra*.

JUNIOR.—*Passed in all Subjects*: R. L. Cox; A. F. Matthews; J. H. Prowse; B. Lois MacKay; H. T. Dickie; R. W. Maclellan; C. H. S. Cahan; F. Muriel Cunningham; M. G. Burris; J. R. Archibald.

*Passed in Certain Subjects*: H. H. McLeod, in *History and Geometry*; E. C. MacKenzie, in *Greek, Algebra and Geometry*; W. H. Sweet, in all except *Algebra*; Alex. Sinclair, A. G. McAulay, J. R. Miller, W. P. Grant, W. F. Burns, J. J. MacRitchie, R. A. Watson, D. S. Wickwire, Cassie I. Gourley, H. F. MacRae, N. Luta MacKay, D. H. Marchant, D. McLean, in all except *Foreign Languages*; A. M. Grant, T. P. Bentley and J. M. Beaton, in all except *Foreign Languages and Algebra*; R. E. Dickie, in all except *Latin*; A. J. Barnes and H. H. Marshall, in *History*; C. L. Blois, Lina Grant, E. Foster, J. S. Snook and W. M. Ross, in all except one *Foreign Language*; E. M. Yeoman (for *Science*), in all except *Algebra*.

## SUPPLEMENTARY EXAMINATIONS.

LATIN.—*First Year (Dec. Exam.)*: Alexander Ferguson. *Second year*: Ella Perkins; (*Dec. Exam.*), Muriel Hill, Euphemia McInnis, and Lulu Murray. *Third year (Dec. Exam.)*: C. McNiven, R. H. Sutherland.

GREEK.—*Second Year (Dec. Exam.)*: J. M. Trueman, Alexander Ferguson.

FRENCH.—*Second*: G. L. McCain, H. H. McLeod. *Third*: J. R. Mellish.

GERMAN.—*Second*: C. R. MacIntosh.

ENGLISH.—*First*: W. K. Fraser, R. H. Sutherland. *Second*: Muriel Hill, H. Thorne. *Third*: Ella D. Perkins, T. S. Begin, J. M. Trueman.

POLITICAL ECONOMY.—J. R. Mellish.

PHILOSOPHY.—*Junior*: A. S. Weir, H. Thorne. *Senior*: J. R. Mellish.

MATHEMATICS.—*First*: Lulu Murray (*Algebra*), J. B. Morrow (*Trigonometry*), C. G. Dickie (*Trigonometry*). H. D. Brunt

(Geometry), J. M. Stewart (Trigonometry), G. A. R. MacKean (Algebra). *Second*: C. McNiven, Ella Perkins (Algebra), G. C. Read (Algebra), G. W. Langille (Algebra).

PHYSICS.—*Junior*: Ella Perkins, C. McNiven, E. Stanfield, Mabel Murray, G. Creighton. *Senior*: J. L. Wilson.

CHEMISTRY.—*Junior*: C. McNiven, S. C. Anderson. *Senior*: C. Macdonald.

HYDRAULIC ENGINEERING.—J. L. Wilson.

## DEGREE EXAMINATIONS.

### CLASS LISTS.

In these lists the names in Class I and in Class II are arranged in alphabetical order; the others are arranged in the order of merit.

The asterisk indicates a High First Class.

#### LATIN.

LATIN 1.—*Class I*.—Read, J. E.; Matthews, A. F. *Class II*.—Ross, W. C. *Passed*—Sweet, W. H.; Prowse, J. H.; Arbuckle, J. W.; Blois, C. L.; (Grant, Lina; Grant, W. P.); Burris, M. G.; MacKay, Barbara Lois; MacRae, H. F.; MacLellan, R. W.; Cunningham, F. Muriel; (Buckley, R. C.; McLean, D. R.); Reid, F. H.; Dickie, R. E.; Burns, W. F. *Passed the December Exam*.—Cox, R. L. *passed the April Exam*.—Dickie, H. T.; Anderson, S. C.; Miller, J. R.; Kirker, E. A.

LATIN 2.—*Class I*.—\*Moxon, A.; Seaman, A. W. *Class II*.—Archibald, J. R.; Bruce, J. G.; Fraser, H. C.; Layton, F. P. H.; Murphy, Blanche E.; Nichols, E. W.; Smith, W. M. *Passed*—Faulkner, Dora G.; McLeod, A. A.; Grant, F. A.; Swanson, P. I.; McLeod, Anna E.; MacKenzie, Mary L.; Barnstead, Winifred G.; Lindsay, W. S.; McDougall, E.; Sinclair, F. D.; Farquhar, G.; (MacKenzie, H. H.; Patterson, H. S.; Sinnott, Edna P.); Stewart, J. M.; Robertson, R. B. H.; Pennington, Amy K.; Hill, O. D.; McKay, D. A.; Sullivan, C.; (Dickie, C. G.; Townsend, C. G.); Creighton, H. J.; Watson, A. D.; Davis, C. J.; McLellan, J. A. *Passed the April Exam*.—MacKenzie, E. C.; Burns, R. C.; Bauld, W. A. G.; Fraser, W. K.; MacAloney, C. W.; Lawrence, M. Gladys.; Fraser, A.

LATIN 3.—*Class I*.—\*Brehaut, L.; Brunt, H. D.; Corbett, W.; M.; Cumming, C. G.; Johnson, A. C.; McLean, M. C.; Neish, C. W. *Class II*.—Aham, J. L.; Davis, D. G.; Miller, Dalmeny, E.; Payzant, A. S. *Passed*—Smith, F. F.; Haverstock, Alice M.; Stanfield, Eleanor A.; Lawrence, C. S.; Baillie, C. T.; (McNiven, Catherine, Murray, Lulu M.; Spencer, Minnie G.); Urquhart, H. D.; McDonald, R. A.; Gladwin, Alice P.; Munro, Ethel M.; Turner, Christina J.; Gerrard, Louise F.; Murray, E. Mabel; (Curry, W. A.; Hill, Muriel O.; McInnis, Euphemia); McBain, A. R.; Perkins, Ella D.; Ross, Lottie L. *Passed the December Exam*.—Williams, Mildred E.; Batton, Viola, M. *Passed the April Exam*.—Blackwood, E. Florence.

## GREEK.

GREEK 1.—*Class I.*—Read, J. E. *Class II.*—Ross, W. C. *Passed*—Sweet, W. H.; Grant, Lina; McRae, H. F.; McLellan, J. A.; Baillie, C. T.; Grant, W. P.; Watson, R. A.; Dickie, H. T.; McLean, D. R.

GREEK 2.—*Class I.*—\*Moxon, A. *Class II.*—Fraser, H. C.; Payzant, A. S.; Seaman, A. W.; Smith, W. M. *Passed*—McLeod, A. A.; Layton, F. P. H.; Lindsay, W. S.; Murphy, Blanche E.; MacKenzie, H. H.; McDougall, E.; Sinnott, Edna P.; Hill, O. D.; Robertson, R. B. H.; Farquhar, G.; Scrimgeour, J. A.; Townsend, C. G.; Crowdis, C. J. *Passed the April Exam.*—MacPherson, W.

GREEK 3.—*Class I.*—\*Brehaut, L.; Johnson, A. C.; McLean, M. C.; Neish, C. W. *Class II.*—Acham, J. L. *Passed*—Miller, Dalmeney, E.; Davis, D. G.; Munro, Ethel M. *Passed the April Exam.*—Miller, H.

## FRENCH.

FRENCH 1.—*Class II.*—Wickwire, D. S. *Passed*—Yeoman, E. M.; Blois, C. L.; Mahon, G. E.; Reid, F. H.; MacKay, Nettie L.; Bentley, T. L.; Gourley, Cassie I.; Dickie, R. E.; McAulay, A. G.; Marchant, D. H.; Batton, Viola M.; MacRitchie, J. J.; Snook, John S.; Burris, M. E.; Foster, Edward; Reid, J. W.

FRENCH 2.—*Class I.*—McLeod, Anna E.; Nichols, E. W. *Class II.*—Arbuckle, J. W.; Bruce, J. G.; Moxon, Arthur; Pennington, Amy K. *Passed*—Cahah, C. H. S.; Matthews, A. F.; Fraser, W. K.; MacKenzie, E. C.; Grant, Lina; Sullivan, C. T.; Peppard, Sadie.; MacKay, B. Lois; Patterson, H. S.; MacKenzie, H. H.; Fraser, Alister; Maclellan, R. W.; Cunningham, Muriel F.; Sinclair, F. D.; Bauld, W. A. G.; Prowse, J. H.; Turner, Christina J.; Dickie, C. G.; Barnes, A. J.; Buckley, R. C.; Morrison, E. S.; Burns, R. C.; Watson, A. D.; Archibald, J. R.; Urquhart, J.; Greenwood, T. C.

FRENCH 3.—*Class I.*—Murphy, Blanch E. *Class II.*—Barnstead, Winifred G.; Knight, F. C.; McKay, D. A.; Murray, E. Mabel; Faulkner, Dora G.; Sinnott, Edna P. *Passed*—Miller, Dalmeney E.; Barnett, John; Read, G. C.; Murray, Lulu M.; Carney, M. J.; Curry, W. Allan.; Lawrence, C. S.; Ross, Lottie L.; MacKenzie, Mary L.; Gerrard, Louise F.; Perkins, Ella D.

## GERMAN.

GERMAN 1.—*Class I.*—Fraser, H. C. *Class II.*—Farquhar, G.; Layton, F. P. H.; Murray, Lulu M.; Murray, E. Mabel; Smith, W. M. *Passed*—Yeoman, E. M.; MacKay, Nettie L.; Wickwire, D. S.; Gerrard, Louise F.; Fielding, H. W.; Prowse, J. H.; MacRitchie, J. J.; McAulay, A. G.

GERMAN 2.—*Class I.*—Bruce, J. G.; McInnis, R. J.; Swanson, P. I. *Class II.*—Burris, E. Mabel; McInnis, Euphemia M.; Seaman, A. W.; Smith, F. F. *Passed*—Grant, F. H.; Woodbury, W. W.; Campbell, N. G.; Barnes, A. J.; Burgess, L. L.; Creighton, H. J.

GERMAN 3.—*Class I.*—Turner, Christina J.; McKay, D. A. *Class II.*—Christie, C. V.; Munro, Ethel M. *Passed*—Tait, W. D.;

Davidson, M. D.; MacIntosh, C. R.; Read, G. C.; Davis, C. J.; Stapleton, W. C.

## ENGLISH.

ENGLISH 1.—*Class I.*—Matthews, A. F. *Class II.*—Fraser, Muriel; Gourley, Cassie I.; MacKay, Nettie L.; Maclellan, R. W. *Passed.*—Burris, M. G.; Arbuckle, J. W.; Read, J. E.; Grant, W. P.; Cunningham, Francis; (Grant, Lina; Wickwire, D. S.; Ross, W. C.); (McLean, D. R.; Sweet, W. H.); (MacRae, H. F.; Prowse, J. H.); Grant, A. M.; (MacKay, Lois; Macleod, C. G.; Yeoman, E. M.); Bentley, T. P.; (Crichton, Josephine; Fraser, W. K.); Foster, E.; Dickie, R. E.; (Blois, C. L.; Dickie, H. T.; Knight, F. C.; McAulay, A. G.; McRitchie, J. J.); (Snook, J. S.; Watson, R. A.); Woodbury, R. H.; Miller, J. R.; Cahan, C. H. S.

ENGLISH 2.—*Class I.*—Farquhar, G.; Fraser, H. C.; Harlow, A. G.; Moxon, A.; Murphy, Blanche; Patterson, H. S.; Seaman, A. W. *Class II.*—Bruce, J. G.; Layton, F. P. H.; MacKenzie, H. H.; Nichols, E. W.; Robertson, R. B. H.; Sinclair, F. D.; Sinnott, Edna P. *Passed.*—Pennington, Amy K.; McDougall, E.; McLellan, J. A.; Grant, F. A.; Stewart, J. M.; Lintlsay, W. S.; McLeod, A. A.; Logan, J. H.; MacKenzie, E. C.; Barnstead, Winifred; Burns, W. F.; MacKenzie, Mary L.; Smith, W. M.; Creighton, H. J.; Townsend, C. G.; Bauld, W. A. G.; Faulkner, Dora G.; Lawrence, Gladys; McLeod, Anna E.; MacAloney, C. W.; MacLearn, F. H.; Burton, C. F.; Burns, R. C.; Swanson, P. I.; Dickie, C. G.; MacPherson, W. M.; Sullivan, C.; Barnes, A. J.; Buckley, R. C.; Morrison, E. C.; Archibald, J. R.; Fraser, A.; Hill, O. D.; Beaton, J. M.; MacKenzie, D. H.; Hall, W. E. G.; Morrow, J. B.

ENGLISH 4.—*Class I.*—Barnett, Jno.; \*Brehaut, L.; Brunt, H. D.; \*Power, W. K. *Class II.*—Campbell, Primrose; Spencer, Minnie G.; Stanfield, Eleanor A. *Passed.*—Wallis, Bessie; Bayer, Harriet M.; Tait, W. D.; Cumming, C. G.; Andrew, G. A.; Fraser, F.; McLean, M. C.; Murray, Lulu M.; Scrimgeour, J. A.; Davis, D. G.; McDonald, R. A.; Begin, T. S.; Boak, Lily M.; Logan, F. R.; Corbett, W. M.; Baillie, C. T.; Munro, Ethel M.; Toombs, H.; Miller, Dalmeney E.; Davidson, M. D.; Davis, C. J.; Langille, G. W.; Lawrence, C. S.; McNiven, Catherine; Campbell, N. G.; MacKean, G. A. R.; Ross, Lottie L.; Gerrard, Louise; Ferguson, A.; McBain, A. R.; Smith, F. F.; Trueman, J. M.; McKay, D. A.; Miller, H.; Payzant, A. S.; Ross, D. K.; Green, W. I.; Stapleton, W. C.; Gladwin, Alice P.; McCain, G. L.; Murray, Mabel.

## BIBLICAL LITERATURE.

*Class II.*—Andrew, G. A.; Noble, Mary E.; Stanfield, Eleanor A.; Toombs, H. W. *Passed.*—Burris, Estella M.; Miller, H.; Begin, T. S.; Ferguson, A.; McDonald, R. A.; Creighton, G.; Kirker, E. A.; Langille, G. W.; Ross, D. K.; Ross, Lottie L.; Turner, Christina J.; Ross, W. M.; Green, W. I.

## HISTORY AND POLITICAL ECONOMY.

HISTORY 1.—*Class I.*—\*Barnett, J.; Charman, J. H.; McInnes, Euphemia; Payzant, A. S.; Spencer, Minnie G. *Class II.*—Burns, W. F.; Forsythe, R. B.; Lawrence, C. S.; Murray, E. Mabel; Stanfield, Eleanor A. *Passed.*—Toombs, H. W.; Baillie, C. T.;



McDonald, R. A.; Turner, Christina J.; Haverstock, Alice; Gladwin, Alice P.; McBain, A. R.; Murray, Lulu M.; Ross, Lottie L.; Curry, W. A.; Kirker, E. A.; Ross, D. K.; Beaton, J. M.; Gerard, Louise F.; Hill, A. Muriel; Thorne, H.

HISTORY 2.—*Class I.*—\*Power, W. K.; Acham, J. L.; Blackwood, E. Florence; Bayer, Harriet M.; Campbell, M. Primrose D.; McKay, D. A.; MacKenzie, T. G. *Passed*—Andrew, G. A.; McNiven, Catherine; Perkins, Ella D.;

HISTORY 3.—*Passed*—MacKenzie, T. G.; Fraser, Everett.

POLITICAL ECONOMY 1.—*Class I.*—Acham, J. L.; Bayer, Harriet M.; McKay, D. A. *Passed*—Carney, M. J.; Stapleton, W. C.; MacIntosh, C. R.; Woodbury, W. W.; Andrew, G. A.; MacKenzie, T. G.; Davidson, M. D.; Trueman, J. M.; Read, G. C.; Sutherland, R. H.; Macleod, W. A.; Robertson, R. B. H.; McPherson, W.; Ross, W. M.; Begin, T. S.

## PHILOSOPHY.

PHILOSOPHY 1.—*Class I.*—Layton, F. P. H.; McDougall, E.; \*Moxon, A.; Nichols, E. W.; Patterson, H. S. *Class II.*—Archibald, J. R.; Bruce, J. G.; Farquhar, G.; Fraser, H. C.; Hill, O. D.; McLeod, A. A.; McLeod, Anna E.; Seaman, A. W.; Smith, W. M.; Watson, A. D. *Passed*—Sullivan, C. T.; Swanson, P. I.; MacKenzie, Mary E.; McKay, D. A.; Barnstead, Winifred G.; Sinnott, Edna P.; Burns, R. C.; Woodbury, W. W.; Davis, C. J.; Burns, W. F.; Pennington, Amy K.; Lawrence, Mary G.; Lindsay, W. S.; Stewart, J. M.; Buckley, R. C.; Bauld, W. A. G.; Murphy, Blanche E.; McLellan, J. A.; Dickie, C. G.; Fraser, A.; Robertson, R. B. H.; Faulkner, Dora G.; Sinclair, F. D.; MacKenzie, H. H.; MacKenzie, E. C.; MacKenzie, D. H.; MacPherson, W.

PHILOSOPHY 2.—*Class I.*—Brunt, H. D.; \*Ross, E. B.; Tait, W. D. *Class II.*—Campbell, N. G.; Crowdis, C. J.; Power, W. K. *Passed*—Cumming, C. G.; Ballem, J. C.; McDougall, E.; Davidson, M. D.; Toombs, H. W.; Davis, D. G.; Payzant, A. S.; Corbett, W. M.; Logan, F. R.; Townsend, C. G. *Special*—Scrimgeour, J. A.

PHILOSOPHY 5.—*Class I.*—Brunt, H. D.; Campbell, N. G.; Ross, E. B.; Tait, W. D. *Class II.*—Bayer, Hattie M.; Crowdis, C. J.; Cumming, C. G.; McLean, M. C. *Passed*—McDonald, R. A.; Wallis, Bessie; Toombs, H. W.; Burns, Estella M.; Green, W. I.; Payzant, A. S.; Creighton, G.; Spencer, Minnie G.; Ferguson, A.; Ross, D. K.; Baillie, C. T.; MacKean, G. A. R.; Neish, C. W.; Weir, A. S.; Smith, F. F.; Miller, H.; Forsythe, R. B.; Gladwin, Alice P.; Langille, G. W.; Perkins, Ella D.; MacKenzie, D. H.

PHILOSOPHY 6.—*Passed*—Scrimgeour, J. A.

## EDUCATION.

*Class I.*—Blackwood, E. Florence; \*Brunt, H. D. *Class II.*—Acham, J. L. *Passed*—Burris, Estella M.; Campbell, M. Primrose D.; Davis, D. G.; Bayer, Hattie M.; Davis, C. J.; Davidson, M. D.; Ferguson, A.; Miller, G. W.; McNiven, Catherine; Perkins, Ella D.; MacKean, G. A. R. *Special*—Scrimgeour, J. A. *Half-Course*—Malcolm, J.; Smith, A. A.

## MATHEMATICS.

MATHEMATICS 1.—*Class I.*—\*Blois, C. L.; Grant, W. P.; \*McKay, Nettie; Read, J. E.; Snook, J. S. *Class II.*—Burris, M. G.;

Gourley, Cassie I.; Knight, F. C.; Marchant, D. H. M.; Matthews, A. F.; MacKay, B. Lois; MacRitchie, J. J.; Prowse, J. H.; Sweet, W. H.; Wickwire, D. S. *Passed*—Ross, W. C.; (McAulay, A. G.; MacRae, H. F.); Dickie, H. T.; (Grant, A. M.; Watson, R. A.); Morrison, E. S.; (Maclellan, R. W.; Smith, F. F.; Tait, W. D.); Ross, W. M.; Bentley, T. P. *Passed in Geometry*—McLean, D. R.; *Passed in Algebra*—Buckley, R. C.; MacKean, G. A. R.; Murray, Lulu M. *Passed in Trigonometry*—Cox, R. L.; Grant, Lina; Greenwood, T. C.; Hall, W. G.; Macleod, C. G.; Sinclair, A. *Passed in Algebra and Trigonometry*—Cahan, C. H.; Green, W. I. *Passed in Algebra and Geometry*—Dickie, R. E.; Foster, E. *Passed in Geometry and Trigonometry*—Miller, J. R.

MATHEMATICS 2.—*Class I.*—Campbell, M. Primrose D.; \*Moxon, A.; \*Sullivan, C. T. *Class II.*—Grant, F. A.; Harlow, A. C.; Lindsay, W. S.; MacAloney, C. W.; MacLearn, F. H. *Passed*—Layton, F. P. H.; (Archibald, J. R.; Creighton, J.); *Passed in Analytic Geometry.*—Barnes, A. J.; Faulkner, Dora G.; MacKay, G. M. J.; Nichols, E. W.; Smith, A. D.

MATHEMATICS 5.—*Class I.*—McInnis, R. J. *Class II.*—Burgess, L. L.; Carney, M. J.; Watson, A. D. *Passed*—Peppard, Sadie.

## PHYSICS.

PHYSICS 1.—*Class I.*—Harlow, A. C.; \*McInnis, R. J. *Class II.*—Creighton, H. J.; Cumming, C. G.; Grant, F. A.; McInnis, Euphemia; MacIntosh, C. R.; Swanson, P. I. *Passed*—Toombs, H. W.; Miller, H.; Morrison, E. S.; Burns, R. C.; McLearn, F. H.; Barnes, A. J.; Thorne, H.; McDonald, R. A.; McBain, A. R.; Brunt, H. D.; Hill, Muriel; McLeod, Anna E.; MacAloney, C. W.; Pennington, Amy K.; Ross, Louise L.; Macleod, C. G.; Nichols, E. W.; Smith, A.; McLeod, H.; Sinclair, F. D.; Murray, E. Mabel; Barnstead, Winifred G.; Buckley, R. C.; Ross, D. K.; Gladwin, Alice P.; Begin, T. S.; Peppard, Sarah; Perkins, Ella D.; Dickie, C. G.; MacKenzie, E. C.; Creighton, G.; Burton, C. F.; Anderson, S. C.; Kirker, E. A.; MacKenzie, Mary E.

PHYSICS 2.—*Class I.*—McInnis, R. J. *Passed*—MacKay, G. M. J.; Carney, M. J.; Burgess, L. L.; Watson, A. D.; Fulton, T. T.; MacKenzie, T. G.; Stapleton, W. C.; Urquhart, J.; Wilson, J. L.

PHYSICS 6.—*Passed*—Burgess, L. L.; Carney, M. J.; Smith, A. D.; Thorne, H.

PHYSICS 7.—*Class II.*—Fulton, T. T.

## CHEMISTRY.

CHEMISTRY 1.—*Class I.*—\*Blois, C. L.; Burris, M. G.; MacKay, P. Lois; Prowse, J. H. *Class II.*—Arbuckle, J. W.; Bruce, J. G.; Dickie, H. T.; Grant, A. M.; Knight, F. C.; MacKenzie, H. H.; Marchant, D. H.; Read, J. E.; Snook, J. S.; Wickwire, D. S. *Passed*—Nichols, C. W.; Bentley, T. P.; (Maclellan, R. W.; MacRitchie, J. J.); Cahan, C. H.; Moxon, A.; Morrison, E. S.; Dickie, R. E.; Patterson, H. S.; McAulay, A. G.; Matthews, A. F.; Sullivan, C. T.; McDonald, R. A.; Sweet, W. H.; Ross, W. C.; MacKay, Nettie L.; Gourley, Cassie I.; Watson, R.; Bauld, W. A. G.; Grant, W. P.; (Hill, Muriel; McLean, D. R.) Ross, W. M.; Anderson, S. C.; Grant, Lina. *Special Exam.*—Christie, C. V.

CHEMISTRY 2.—*Class I.*—Burgess, L. L.; \*Davidson, M. D.; \*Harlow, A. C.; *Class II.*—Campbell, Primrose; Creighton, J.

Stapleton, W. C. *Passed*—Barnes, A. J.; Grant, F. A.; Urquhart, J.

CHEMISTRY 4.—*Class I.*—Fulton, T. T.; Macdonald, C.

## BOTANY.

*Class I.*—Burris, Estella M. *Passed*—Woodbury, W. W.; MacIntosh, C. A.; Noble, Mary E.; MacLeod, W. A.; Logan, F. R.; Davis, C. J.; Creighton, G.; Read, G. C.; Mellish, J. R.

## ZOOLOGY.

*Class I.*—Blackwood, E. Florence. *Class II.*—Woodbury, W. W. *Passed*—Logan, F. R.; Macleod, W. A.; MacIntosh, C. R.; Ballem, J. C.; Davis, C. J.; Curry, W. A.; Read, G. C.; Mellish, J. R.

## GEOLOGY.

GEOLOGY 1.—*Passed*—MacLearn, F. H.; Grant, A. M.; McKenzie, J. G.; Macdonald, C.; Christie, C. V.; Snook, J. S. (conditionally); Burton, C. F. (conditionally).

## MINERALOGY.

MINERALOGY 1.—*Class I.*—Blackwood, E. Florence. *Passed*—Macdonald, C.; Fulton, T. T.

## MINING.

MINING 1.—*Passed*—Fulton, T. T.; Macdonald, C.; McKenzie, J. G.

## METALLURGY.

METALLURGY 2.—*Passed*—Fulton, T. T.

## MECHANICAL DRAWING.

*Class I.*—Christie, C. V.; Macleod, C. G. *Class II.*—Barnes, A. J. Burton, C. F.; Harlow, A. C.; McKenzie, J. G.; MacLearn, F. H.; Morrison, E. S.; Wickwire, D. S. *Passed*—Grant, A. M.; Snook, J. S.; Foster, E.; Morrow, J. B.; Hall, W. E. G.

## FREEHAND DRAWING.

*Passed*—McKay, D. A.

## DESCRIPTIVE GEOMETRY.

*Class I.*—Christie, C. V.; Grant, A. M.; Snook, J. S.; *Class II.*—Barnes, A. J.; Fulton, T. T. *Passed*—Macleod, C. G.; Knight, F. C.; Morrow, J. B.

## APPLIED MECHANICS.

APPLIED MECHANICS 2.—*Passed*—Christie, C. V.; Urquhart, J.

## SURVEYING.

*Class II.*—McKenzie, J. G. *Passed*—Urquhart, J.

## HISTOLOGY.

*Passed*—Ballem, J. C.; Read, G. C.; Sutherland, R. H.

## PHYSIOLOGY.

*Passed*—Ballem, J. C.; Sutherland, R. H.

## HARMONY.

*Passed*—Logan, J. H.

## FACULTY OF LAW.

## DEGREE EXAMINATIONS.

## CLASS LISTS.

NOTE.—The names in Class I are placed in order of merit: the pass list is arranged in alphabetical order and gives no indication of the relative merits of the candidates.

## INTERNATIONAL LAW.

*Class I.*—Miller, L. J.; Bell, I. H.;

*Class II*—Dickie, H. A.; Carroll, W. F.; Haviland, J. A.; McCurdy, D. D.; Ross, E. B.; Cameron, J. J.; Redmond, J. A.; MacKay, Ira; Harrington, G. S.

*Passed*—Cameron, J. McK.; Cheese, G. O.; MacLean, D.; Magher, T. J. N.; Moulton, G. A.; Wood, J.;

## CONFLICT OF LAWS.

*Class I.*—McCurdy, D. D.; Trites, R.; Roscoe, B. W.

*Class II.*—Mounce, R. B.; Carroll, W. F.; Cameron, J. J.; Miller, L. J.

*Passed*—Wood, J.

## EQUITY.

*Class I.*—Trites, R.; MacKay, I.; Roscoe, B. W.; Carroll, W. F.; McCurdy, D. D.; MacKay, R. G.; Bell, I. H.; Shaw, V. H.; Mounce, R. B.; Haviland, J. A.; Cameron, J. J.

*Class II.*—Harrington, G. S.; McLennan, D.; Fenerty, L. H.; Cameron, J. M.; Elliot, P. St. C.; McLeod, J. A.; Meagher, T. J. N.

*Passed*—Cheese, G. O.; Church, E.; Corey, B. S.; Dickie, H. A.; Dickey, Horace, A.; Eagar, M. W.; Foster, W. G.; Landry, A. F.; MacDonald, A. E. M.; Redmond, J. A.; Sanderson, C. L.; Wood, J.

## PARTNERSHIP AND COMPANIES

*Class I.*—Miller, L. J.; Harrington, G. S.; MacKay, R. G.; Bell, I. H.; Carroll, W. F.; Cameron, J. J.; MacKay, Ira.; McCurdy, D. D.; McLennan, D.; Wood, J.; Corey, S. B.

*Class II.*—Shaw, V. H.; Sanderson, C. L.; Cameron, J. McK.; Cheese, G. O.; Mounce, R. B.; Roscoe, B. W.; Elliot, P. St. C.; Fenerty, L. H.; Dickey, Horace, A.; Trites, R.; Dickie, H. A.; Meagher, T. J. N.

*Passed*—Edgar, M. W.; Foster, W. G.; Gilpin, T. B.; Landry, A. F.; MacDonald, A. E. M.; MacLean, D.; MacLeod, J. A.; Redmond, J. A.

## BILLS AND NOTES.

*Class I.*—Roscoe, B. W.; Haviland, J. A.; Trites, R.; Miller, L. J.; Shaw, V. H.; Cameron, J. M.; Mackay, R. G.; MacKay, Ira.; Carroll, W. F.; MacLennan, D.

*Class II*—Harrington, G. S.; McCurdy, D. D.; Cameron, J. J.; Fenerty, L. H.; Bell, I. H.; Dickey, Horace, Foster, W. G.

*Passed*—Cheese, G. O.; Corey, B. S.; Dickie, H. A.; Elliot, P. St. C.; Landry, A. F.; MacDonald, A. E. M.; MacLeod, J. A.; Meagher, T. J. N.; Mounce, R. B.; Redmond, J. A.; Sanderson, C. L.; Wood, J.

## CONSTITUTIONAL LAW.

*Class I*—Ross, E. B. MacLean, D.; Mackay, R. G.; Shaw, V. H.

*Class II*—MacKay, Ira.; MacLennan, D.; Landry A. F.; Elliot, P. St. C.

*Passed*—Fenerty, L. H.; Sanderson, C. L.; Wood, J.

## SHIPPING

*Class I.* Shaw, V. H.; MacKay, I.; Mackay, R. G.; Locke, E. C. Trites, R.

*Class II.*—MacLennan, D.; Roscoe, B. W.; Fenerty, L. H. and Mounce, R. B.; (equal); Corey, B. S.; Foster, W. G.;

*Passed*—Dickey, Horace A.; Edgar, M. W.; Landry, A. F.; Wood, J.

## REAL PROPERTY.

*Class I.*—McCurdy, D. D.; Locke, E. C.; Morrisey, . S

*Class II.*—Elliot, P. St. C.; Elliot, Murray.; Seller, L. A.

*Passed*—Chisholm, J. E.; Graham B. T.; Lyons, J. B.; MacGil, livray, A. A.; MacDonald, B. D.; MacLeod, J. A.; Sanderson, C. L.

## TORTS.

*Class I.*—Barnett, J.; Locke, E. C.; Morrisey, W. S.; McLeod, J. A.; Sanderson, C. L.

*Class II.*—Lyons J. B.; Graham, B. T.; Chisholm, J. E.; Elliot, M.; Sterne, G. H.

*Passed*—MacGillivray, A. A. MacDonald, B. D.; Elliot, P. St. C.; Seller, L. A.

## CONSTITUTIONAL HISTORY.

*Class I*—Baillie, C. T.; Charman J. H. (equal); Bayer, Miss H. M.; Toombs, H. W.; (equal); Seller, L. A.

*Class II*—Gladwin Miss A. P.; Morrisey, W. S.; MacDonald, B. D.; Lyons, J. B.; (equal); Ballem, J. C.

*Passed.*—Andrew, G. A.; Chisholm, J. E.; Elliot, M.; Logan, F. R. MacNiven, Miss C.; Sutherland, R. H.; Sterne, G. H.; Trueman, J. M. Weir, A. S.

## CONTRACTS.

*Class I*—Barnett, J.; Charman, J. H.; Morrisey, W. S.; Locke, E. C.

*Class II.*—Elliot, M.; MacDonald, B. D.; MacGillivray, A. A.

*Passed*—Chisholm, J. E.; Graham, B. T.; Lyons, J. B.; Seller, L. A.

## CRIMES.

*Class I.*—Locke, E. C.; Morrisey, W. S.; Seller, L. A.

*Class II.*—Elliot, M.; McLeod, J. A.; MacGillivray, A. A.; Elliot, P. St. C.

*Passed*—Chisholm, J. E.; Church, E.; Graham, B. T.; Lyons, J. B.; MacDonald, B. D.; MacLean, D.; Sterne, G. H.; Sanderson, C. L.

## FACULTY OF MEDICINE.

## GENERAL PASS LIST.

(Alphabetical Order).

## PRIMARY M. D., C. M. EXAMINATION

*Section "A"—First Year.*

Ballem, J. C. ; \*Boudreau, F. E. ; Carter, P. M. ; †Ferguson, J. A. ; †\*Goodwin, J. C. ; LeBlanc, B. A. ; Lindsay, M. A. ; MacDonald, John. ; Macleod, W. A. ; \*Pilot, F. W. H. ; \*Robbins, E. E. ; Shatford, R. O. ; †Smith, C. V. ; Sutherland, R. H. ; Woodbury, W. W.

*Section "B"—Second Year.*

Boudreau, F. E. ; Coffin, W. H. ; Devine, M. E. ; Donovan, O. G. ; Dunn, G. A. ; Ferguson, J. A. ; Hennigar, Annie ; Killam, H. E. ; \*MacDonald, D. R. ; Macdonald, W. S. ; †MacKenzie, Mary ; McRae, D. R. ; Melanson, A. R. ; \*Murray, W. D. ; \*O'Connell, J. I. ; \*Pilot, F. W. H. ; Urquhart, H. D.

## FINAL M. D., C. M. EXAMINATION.

*Section "A"—Third Year.*

Blackadder, E. ; \*Dickey, E. E. ; Ferguson, J. A. ; MacDonald, D. R. ; MacDonald, T. G. ; MacIntosh, G. A. ; MacKay, V. N. ; MacKenzie, Mary ; Miller, A. W. ; Murray, J. A. ; Murray, W. D. ; O'Connell, J. I. ; †\*Pilot, F. W. H. ; Proudfoot, J. A. ; \*Wallace, P. J.

*Section "B"—Fourth Year.*

Buckley, C. E. A. ; Champion, J. B. ; Cunningham, A. R. ; \*Dickey, E. E. ; Farquharson, W. O. ; \*Fuller, L. O. ; Jardine, F. W. ; Johnson, T. R. ; MacAulay, M. A. ; MacDonald, T. H. ; MacKenzie, Eliza M. ; MacKenzie, Jemima ; Messinger, Stella M. ; Miller, A. F. ; Munro, Blanche M. ; Pilot, F. W. H. ; Rankine, John.

## DEGREE EXAMINATIONS.

## CLASS LISTS.

(Alphabetical Order)

## MEDICAL PHYSICS.

*Distinction*—MacIntosh, C. R.*Passed*—LeBlanc, B. A. ; MacDonald, John ; Macleod, W. A. ; Shatford, R. O.*Supplementary, Sept., 1903*—Robbins, E. E.*Supplementary, April, 1904*—Goodwin, J. C.

## JUNIOR CHEMISTRY.

*Passed*—Carter, P. M. ; LeBlanc, B. A. ; Longley, I. F. ; MacDonald, John ; Macleod, W. A. ; Shatford, R. O.*Supplementary, Sept., 1903*—Boudreau, F. E. ; Goodwin, J. C.*Supplementary, April, 1904*—Dickson, R. B.

\*Supplementary, September, 1903.

†Supplementary, April, 1904.

‡Special, September, 1903.

§Special, December, 1903.

## BIOLOGY.

*Passed*—Carter, P. M. ; Chisholm, H. D. ; LeBlanc, B. A. ; Lindsay, M. A. ; Longley, I. F. ; MacDonald, John ; MacIntosh, C. R. ; Macleod, W. A. ; Shatford, R. O. ; Woodbury, W. W.

*Supplementary, Sept., 1903, [Botany]*—Pilot, F. W. H.

*Supplementary, April, 1904, [Botany]*—Ballem, J. C.

## JUNIOR ANATOMY.

*Distinction*—Carter, P. M. ; Chisholm, H. D. ; LeBlanc, B. A. ; MacIntosh, C. R. ; Sutherland, R. H.

*Passed*—Ballem, J. C. ; Lindsay, M. A. ; Longley, I. F. ; MacDonald, John ; Macleod, W. A. ; Read, G. C. ; Shatford, R. O. ; Woodbury, W. W.

*Supplementary, April, 1904.*—Ferguson, J. A. ; Smith, C. V. ;

## SENIOR CHEMISTRY.

*Distinction*—Devine, M. E. ; Donovan, O. G. ; Dunn, G. A.

*Passed*—Boudreau, F. E. ; Coffin, W. H. ; Hennigar, Annie ; Killam, H. E. ; Macdonald, W. S. ; McRae, D. R. ; Melanson, A. R.

*Special, September, 1903*—MacKenzie, Mary.

*Special, April, 1904*—Lindsay, M. A. ; Urquhart, H. D.

## SENIOR ANATOMY.

*Distinction*—Coffin, W. H. ; Devine, M. E. ; Donovan, O. G. ; Dunn, G. A. ; Killam, H. E. ; Macdonald, W. S. ; Melanson, A. R.

*Passed*—Boudreau, F. E. ; Ferguson, J. A. ; Goodwin, J. C. ; Hennigar, Annie ; McRae, D. R. ; Urquhart, H. D.

## PHYSIOLOGY AND HISTOLOGY.

*Distinction*—Coffin, W. H. ; Dunn, G. A.

*Passed*—Boudreau, F. E. ; Devine, M. E. ; Donovan, O. G. ; Ferguson, J. A. ; Hennigar, Annie ; Killam, H. E. ; Macdonald, W. S. ; McRae, D. R. ; Melanson, A. R. ; Smith, C. V. ; Urquhart, H. D.

*Supplementary, September, 1903*—MacDonald, D. R. ; Murray, W. D.

*Special, September, 1903*—O'Connell, J. I.

*Special, April, 1904.*—Ballem, J. C.

## MATERIA MEDICA AND THERAPEUTICS.

*Distinction*—MacKay, V. N. ; Miller, A. W. ; Proudfoot, J. A.

*Passed*—Blackadder, E. ; Ferguson, J. A. ; MacDonald, D. R. ; MacDonald, T. G. ; McIntosh, G. A. ; MacKenzie, Mary ; Miller, A. W. ; Murray, J. A. ; Murray, W. D. ; O'Connell, J. I. ; Pilot, F. W. H.

*Supplementary, September, 1903*—Wallace, P. J.

\*Supplementary, September, 1903.

‡Supplementary, April, 1904.

§Special, December, 1903.

## MEDICAL JURISPRUDENCE AND HYGIENE.

*Distinction*—Ferguson, J. A. ; O'Connell, J. I. ; Proudfoot, J. A.

*Passed*—Blackadder, E. ; MacDonald, D. R. ; MacDonald, T. G. ; McIntosh, G. A. ; MacKay, V. N. ; MacKenzie, Mary ; Miller, A. W. ; Murray, J. A. ; Murray, W. D.

*Supplementary, September, 1903*—Wallace, P. J.

*Special, September, 1903*—Pilot, F. W. H.

## PATHOLOGY AND BACTERIOLOGY.

*Distinction*—MacKay, V. N.

*Passed*—Blackadder, E. ; Ferguson, J. A. ; MacDonald, D. R. ; MacDonald, T. G. ; McIntosh, G. A. ; MacKenzie, Mary ; Miller, A. W. ; Murray, J. A. ; Murray, W. D. ; O'Connell, J. I. ; Proudfoot, J. A.

*Supplementary, September, 1903*—Dickey, E. E. ; Wallace, P. J.

*Special, December, 1903*—Pilot, F. W. H.

## SURGERY.

*Distinction*—Champion, J. B. ; Cunningham, A. R. ; MacKenzie, Jemima.

*Passed*—Buckley, C. E. A. ; Farquharson, W. O. ; Jardine, F. W. ; Johnson, T. R. ; MacAulay, M. A. ; MacDonald, T. H. ; MacKenzie, Eliza M. ; MacKenzie, Jemima ; Messinger, Stella M. ; Miller, A. F. ; Munro, Blanche M. ; Pilot, F. W. H. ; Rankine, John

*Supplementary, September, 1903*—Fuller, L. O.

## CLINICAL SURGERY.

*Distinction*—Cunningham, A. R. ; Rankine, John.

*Passed*—Buckley, C. E. A. ; Champion, J. B. ; Farquharson, W. O. ; Jardine, F. W. ; Johnson, T. R. ; MacAulay, M. A. ; MacDonald, T. H. ; MacKenzie, Eliza M. ; MacKenzie, Jemima ; Messinger, Stella M. ; Miller, A. F. ; Munro, Blanche M. ; Pilot, F. W. H.

## MEDICINE.

*Distinction*—Cunningham, A. R. ; Rankine, John

*Passed*—Buckley, C. E. A. ; Champion, J. B. ; Farquharson, W. O. ; Jardine, F. W. ; Johnson, T. R. ; MacAulay, M. A. ; MacDonald, T. H. ; MacKenzie, Eliza M. ; MacKenzie, Jemima ; Messinger, Stella M. ; Miller, A. F. ; Munro, Blanche M. ; Pilot, F. W. H.

*Supplementary, September, 1903*—Fuller, L. O.

## CLINICAL MEDICINE.

*Distinction*—Cunningham, A. R. ; Farquharson, W. O. ; Jardine, F. W. ; Rankine, John

*Passed*—Buckley, C. E. A. ; Champion, J. B. ; Johnson, T. R. ; MacAulay, M. A. ; MacDonald, T. H. ; MacKenzie, Eliza M. ; MacKenzie, Jemima ; Messinger, Stella M. ; Miller, A. F. ; Munro, Blanche M. ; Pilot, F. W. H.

*Supplementary, September, 1903*—Fuller, L. O.



## OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

*Distinction*—Cunningham, A. R. ; Rankine, John.

*Passed*—Buckley, C. E. A. ; Champion, J. B. ; Farquharson, W. O. ; Jardine, F. W. ; Johnson, T. R. ; MacAulay, M. A. ; MacDonald, T. H. ; MacKenzie, Eliza M. ; MacKenzie, Jemima ; Messinger, Stella M. ; Miller, A. F. ; Munro, Blanche M. ; Pilot, F. W. H.

*Supplementary, September, 1903*—Fuller, L. O.

## STUDENTS, 1903-1904.

## FACULTY OF ARTS.

(The number in some cases affixed to the name, indicates the number of years attended by the student as candidate for a degree.)

Acham, Joseph Leon, 4	Trinidad, W. I.
Albro, Isabel	Halifax.
Anderson, Sedley Cantrell, 2	Halifax.
Andrew, George Allen, 4	Arichat.
Arbuckle, John William, 1	Summerside, P.E.I.
Archibald, George Ernest, 1	Harmony, Col. Co.
Archibald, Grace Dechman, 1	Middle Musquodobit.
Archibald, James Ross, 2	Truro.
Baillie, Charles Tupper, 3	Halifax.
Ballem, John Cedric, 4	Mount Albion, P.E.I.
Barnett, John, 3	Hartland, N.B.
Barnstead, Winifred Glen, 2	Halifax.
Bateman, J. Ruth	Halifax.
Batton, Viola Myra, 3	Clarence, Ann. Co.
Bauld, William Alfred Gordon, 2	Halifax.
Bayer, Harriet Muir, 4	Halifax.
Beaton, John McLean, 2	North Sydney.
Begin, Thurston Stanley, 4	Mahone Bay.
Bentley, Thomas Percy, 1	Truro.
Blackwood, Elizabeth Florence, 4	Halifax.
Blois, Cecil Leroy, 1	Halifax.
Boak, Geoffrey Alexander James, 3	Halifax.
Boak, Lillie May	Halifax.
Brehaut, Louis, 4	Murray Harbour, P.E.I.
Bruce, James Garfield, 2	Barney's River.
Brunt, Howard Dayne, 4	Halifax.
Buckley, Roy Clifford, 2	Halifax.
Burgess, Laurie Lorne, 3	Kinsman's Corners.
Burns, Ralph Chester, 2	Milltown, N.B.
Burns, William Forsythe, 2	Milltown, N.B.
Burris, Estella Mabel, 4	Lower Musquodobit.
Burris, Matthew George, 1	Upper Musquodobit.
Cahan, Charles Hazlitt Scott, 1	Halifax.
Campbell, Margaret Primrose Dickson, 4	Tatamagouche.
Campbell, Norman Garfield, 3	Windsor.
Campbell, Ross Douglas, 1	Halifax.
Carney, Michael James, 4	Halifax.
Carney, William Frederic, 3	Halifax.

Charman, James Harry, 3	Wallace.
Chipman, Elizabeth	Halifax.
Christie, Clarence Victor, M.A.	Halifax.
Conroy, Gertrude Mary, 1	Halifax.
Corbett, William Melville, 4	Rockburn, Que.
Cox, Rupert Leslie, 1	Maitland.
Creighton, Graham, 4	Halifax.
Creighton, Henry Jermain, 2	Dartmouth.
Crichton, Josephine Adele, 1	Halifax.
Crowdis, Charles Jacob, 4	Margaree.
Cumming, Charles Gordon, 3	Westville.
Cunningham, Frances Muriel, 1	Dartmouth.
Curry, Wilfred Alan, 3	Halifax.
Davis, Charles James, 3	Guysboro.
Davis, David Gray, 4	Clifton.
Daviss, Alfred Edward, B.A.	Dartmouth.
Dickie, Clarence Gordon, 2	Truro.
Dickie, Harold Tupper, 1	Lower Stewiacke.
Dickie, Rufus Edward, 1	Lower Stewiacke.
Duncan, Dorothy Waites	Halifax.
Farquhar, George, 2	Newport, Hants.
Faulkner, Dora Guille, 2	Halifax.
Ferguson, Alexander, 4	Port Morien.
Flemming, Flora	Halifax.
Forrest, John Prescott, 1	Halifax.
Forsythe, Robert Bell, 3	Alberton, P.E.I.
Fraser, Alister, 2	New Glasgow.
Fraser, Everett, 3	North Lake, P.E.I.
Fraser, Henry Clement, 2	Lower Pr. William, N.B.
Fraser, Muriel, 1	Halifax.
Fraser, William Kenneth, 2	Halifax.
Gerrard, Louise Frances, 3	Hazel Hill.
Gladwin, Agnes Hawthorne	Musquodoboit.
Gladwin, Alice Pearson, 3	Truro.
Gourley, Cassie Isabelle, 1	Sheet Harbour.
Grant, Edith Margaret	Halifax.
Grant, Frederic Alpin, 2	Halifax.
Grant, Lina, 1	Hopewell, N.S.
Grant, William P., 1	Sunny Brae.
Green, William Ira, 3	Clifton, P.E.I.
Greenwood, Thomas Claude, 1	Halifax.
Hamilton, James Henry, 1	Colburn.
Hamilton, M. Winifred	Rockingham.
Haverstock, Alice Maude, 3	Halifax.
Hill, Amy,	Halifax.
Hill, Olin Drake, 2	Upper Musquodoboit.
Hill, Olive Muriel, 3	Halifax.
Hudson, John William, 4	Eureka.
Hussey, S. R.	Halifax.
Johnson, Agnes	Halifax.
Johnson, Allan Chester, 4	Loch Broom.
Kirker, Elbridge Archibald, 3	Quoddy, Halifax Co.
Langille, Gilbert Webster, 4	River John.
Lawrence, Charles Stramberg, 3	Hantsport.
Lawrence, Mary Gladys, 2	Hantsport.
Lawrence, Samuel Hayes	Maitland.
Layton, Francis Paul Hamilton, 2	Truro.
Layton, Robert Blackwood, B.A.	Truro.
Lepine, Ralph Victor Gough, 1	Halifax.
Lindsay, Walker Stewart, 2	Halifax.

Logan, Frank Robert, 4.....	Musquodoboit Harbour.
MacAloney, Charles William, 2.....	Halifax.
McBain, Alexander Ross, 3.....	Meadowville.
McCain, George Leonard, 3.....	Sussex, N.B.
Macdonald, Campbell, 4.....	North Sydney.
MacDonald, Eleanor Margaret.....	Guysboro.
Macdonald, Eva.....	Fort Hastings.
McDonald, Roderick Augustus, 3.....	Halifax.
McDonald, Zi'lah.....	Halifax.
McDougall, Ewen, 2.....	Bangor, P.E.I.
McInnis, Euphemia, 3.....	West Bay, C.B.
McInnis, Robert John, 3.....	West Bay, C.B.
MacKay, Barbara Lois, 1.....	Dartmouth.
MacKay, George Moir Johnstone, 4.....	Dartmouth.
MacKean, George Angus Ross, 4.....	West LaHave Ferry.
MacKenzie, Daniel Hector, 2.....	Sydney.
MacKenzie, Ewen Cameron, 2.....	Flat River, P.E.I.
MacKenzie, Henry Havelock, 2.....	New Glasgow.
MacKenzie, Mary Lizbeth, 2.....	Flat River, P.E.I.
MacKenzie, Thomas George, 4.....	River John
McLarren, Grace.....	Halifax.
McLean, Daniel Redmond, 1.....	Pictou.
McLean, Murdoch Campbell, 3.....	North Ainslie.
McLellan, John Archibald, 2.....	Kempt Road, C.B.
MacLellan, Robert William, 1.....	Halifax.
McLeod, Angus Alexander, 2.....	Baddeck.
McLeod, Anna Elizabeth, 2.....	Scotsburn.
MacLeod, John Albert, 2.....	Orwell, P.E.I.
McMillan, Louise Victoria.....	Halifax.
McNiven, Catherine, 4.....	New Westminster, B.C.
MacPherson, William, 2.....	Springhill.
MacRae, Hector Francis, 1.....	Middle River, C.B.
Mahon, George Elliot, 1.....	Halifax.
Malcolm, James, B.A.....	St. John, N.B.
Marshall, Henry Herbert, 1.....	Halifax.
Matthews, Allan Fraser, 1.....	Alberton, P.E.I.
Mellish, James Roland, 4.....	Halifax.
Miller, Dalmeney Edmondstone, 3.....	New Glasgow.
Miller, George W., 3.....	Newport.
Miller, Hugh, 3.....	Eden Lake, Pictou Co.
Miller, John Robert, 1.....	Tangier.
Moxon, Arthur, 2.....	Truro.
Munro, Ethel Margaret, 3.....	Pictou.
Murray, Ella Mabel, 3.....	Sussex, N.B.
Murray, Lulu Marion, 3.....	Upper Musquodoboit.
Murphy, Blanche Eunice, 2.....	Moncton.
Neish, Charles Wiswell, 3.....	Halifax.
Nichols, Edward Walker, 2.....	Digby.
Noble, Marv Eliza.....	Harden, N. B.
Patterson, Henry Stuart, 2.....	Tatamagouche.
Payzant, Arthur Silver, 3.....	Halifax.
Pennington, Emily Kingsland, 2.....	Halifax.
Peppard, Sarah, 3.....	Halifax.
Perkins, Ella Dawson, 4.....	Charlottetown.
Power, William Kent, 4.....	Halifax.
Prowse, James Harper, 1.....	Halifax.
Read, Caroline MacColl.....	Halifax.
Read, Emily Abigail.....	Halifax.
Read, George Carruthers, 4.....	Summerside, P.E.I.
Read, John Erskine, 1.....	Halifax.

Rees, William Garfield, 1.....	Halifax.
Reid, Frank Henry, 1.....	Middleton.
Ritchie, Beatrice.....	Halifax.
Ritchie, Edith.....	Halifax.
Robertson, Florence.....	Halifax.
Robertson, Mabel H.....	Halifax.
Robertson, Molly S.....	Halifax.
Robertson, Robert Burnly Hume, 2.....	Barrington Passage.
Ross, Daniel Keith, 3.....	Lorne
Ross, Edwin Byron, 4.....	Peel, N. B.
Ross, Lottie Louise, 3.....	Ross' Corner, P. E. I.
Ross, William Charles, 1.....	Halifax.
Ross, William McMillan, 3.....	Earltown.
Scrimgeour, James Amos, 4.....	Amherst.
Seaman, Athol Wendell, 2.....	Charlottetown.
Seeton, Winifred Ella.....	Halifax.
Sinclair, Alexander, 1.....	Charlo, N. B.
Sinclair, Fred Douglas, 2.....	St. Stephen, N. B.
Sinnott, Edna Pearl, 2.....	New York.
Smith, Alonzo Alexander, 4.....	New Glasgow.
Smith, Frank Freize, 2.....	Middle Musquodoboit.
Smith, William McIntosh, 2.....	Middle Musquodoboit.
Spencer, Minnie Grace, 3.....	Halifax.
Stairs, Olive.....	Halifax.
Stanfield, Eleanor Alice, 3.....	Truro.
Stavert, Robert Hensley, B.A.....	Wilmot Valley, P. E. I.
Stewart, John Murdoch, 2.....	Pictou.
Stewart, Georgie.....	Halifax.
Sullivan, Charles Thompson, 2.....	Truro.
Sutherland, Robert Hiram, 4.....	River John.
Swanson, Peter Innes, 2.....	Kentville.
Sweet, William Henry, 1.....	St. Anthony, P. E. I.
Tait, William Dunlop, 3.....	Hopewell, N. S.
Thorne, Harvey, 3.....	Dartmouth.
Toombs, Herbert Wesley, 3.....	North Rustico, P.E.I.
Townsend, Colin Guilford, 2.....	Travellers' Rest, P.E.I.
Trueman, John MacMillan, 4.....	St. John.
Turner, Christina Jane, 3.....	Truro.
Urquhart, Howard Donald, 4.....	St. Peter's, C.B.
Wallis, Bessie.....	Halifax.
Watson, Andrew Daniel, 3.....	Baddeck.
Watson, Robert Anderson, 1.....	Baddeck.
Weir, Andrew Stewart, 3.....	Thorburn.
Williams, Mildred Catherine, 3.....	Truro.
Woodbury, Ralph Hibbert, 1.....	Halifax.
Yeoman, Eric Mackay, 1.....	Halifax.
Yeoman, Jean D.....	Halifax.

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#### FACULTY OF SCIENCE.

Barnes, Albert Johnson, 2.....	Halifax.
Blois, Ernest Herbert, 2.....	Halifax.
Burton, Charles Forgan, 2.....	Middleton.
Davidson, Milton DeLancy, 3.....	Aylesford.
Fielding, Ralph Watson, 1.....	Dartmouth.
Foster, Edward, 1.....	Bedford.
Fulton, Thomas Truman, B.A., 3.....	Bass River.
Grant, Alexander McDonald, 1.....	West Merigomish

Gray, Bernard Logan, 1.....	Halifax.
Hall, William Edwin Gilpin, 1.....	Springhill.
Harlow, Arthur Cornelius, 2.....	Port Clyde.
Hargreaves, Thomas James, 1.....	Springhill.
Knight, Frederic Carr, 1.....	Bedford.
McAulay, Angus Gillis, 1.....	Glace Bay, C.B.
MacIntosh, Cyrus Ross, 3.....	Sunny Brae.
McKay, Daniel Alexander, 4.....	River John.
MacKay, Nettie Luta, 1.....	Upper Clyde.
McKenzie, James Grant.....	Westville.
Maclean, Donald, 4.....	Fourchu, C.B.
MacLearn, Frant Harris, 2.....	Dartmouth.
Macleod, Charles Gordon, 2.....	Thorburn.
McLeod, Henry Harker, 2.....	Springhill.
MacRitchie, John James, 1.....	Englishtown.
Marchant, David Harold Melburn, 1.....	Lakeville.
Morrison, Edward Sanborn, 2.....	Milltown, N.B.
Morrow, James Bain, 2.....	Halifax.
Reid, James William, 1.....	Middleton.
Roberts, George Edgar, 1.....	Halifax.
Ross, William Horace, B. Sc.....	River John.
Smith, Aubrey DeWolf, 2.....	Londonderry.
Snook, John Stuart, 1.....	Truro.
Stapleton, William Clarke, 3.....	Economy.
Urquhart, James, 3.....	Waugh's River.
Wickwire, Dwight Stanley, 1.....	Halifax.
Wilson, Joseph Lovitt, 4.....	Bridgewater.
Woodbury, William Weatherspoon, 3.....	Halifax.

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## FACULTY OF LAW.

**UNDERGRADUATES.****THIRD YEAR.**

Bell, Isaac Hartley.....	New Glasgow.
Cameron, John McKinlay.....	Pictou.
Cameron, John James.....	Port Hawkesbury.
Carrroll, William F., B. A.....	Margaree Forks, C. B.
Cheese, George Owen, M. A.....	Little Kimble, Bucks
Dickie, Henry Alan.....	Truro. [Eng
Harrington, Gordon Sydney.....	Halifax
Haviland, John Archibald.....	Chatham, N. B.
McCurdy, David Douglas.....	Sydney, C. B.
Meagher, Thomas Joseph Neil.....	Halifax.
Miller, Lemuel James, B. A.....	Charlottetown, P. E. I
Mounce, Ralph Brecken, B. A.....	Avondale.
Redmond James Arthur.....	Pugwash
Robertson, William McCheyne.....	Marshfield, P. E. I.
Roscoe, Barry Wentworth, B. A.....	Kentville.
Trites, Raleigh, B. A.....	Sackville, N. B.

**SECOND YEAR.**

Borden, Allison Hart, A. B.....	Kentville.
Church, Eustache.....	Milltown, N. B.
Dickey, Horace Arthur.....	Halifax.
Elliott, Percival St. Clair, B. A.....	Paradise.
Fenerty, Lloyd Hamilton.....	Halifax.
Foster, William Gore.....	Dartmouth.
Gilpin, Thomas Bernard, B. A.....	Digby.

MacKay, Ira Allen, Ph. D. ....	Millville, Pictou.
Mackay Roderick Geddie .....	East River, Pictou.
McLennan, Donald .....	Margaree, C. B.
McLeod, James Archibald, B. A. ....	Brooklyn, Queens.
Sanderson, Claude Lovitt, B. A. ....	Yarmouth.
Shaw, Vernon Hastings .....	Brackley Pt., P. E. I.
Wood, John .....	Halifax.

## FIRST YEAR.

Elliott, Murray .....	Middleton.
Graham, Bruce Thomson, B. A. ....	Halifax.
Locke, Enos Charles, B. A. ....	Lockeport.
Lyons, John Baptist. ....	Halifax.
McDonald, Bernard Donald .....	Mt. Stewart, P. E. I.
McGillivray, Alexander Andrew .....	Richmond, Quebec.
Morrisey, William Stoker .....	Halifax.
Seller Lemuel Arthur .....	Charlottetown, P. E. I.

## GENERAL STUDENTS.

Andrew, George Allen .....	Arichat, C. B.
Baillie, Charles Tupper .....	Halifax.
Ballem, John Cedric .....	Mt Albion, P. E. I.
Barnett, John, Jr .....	Hartland, N. B.
Bayer, Harriet Muir .....	Halifax.
Begin, Thurston Stanley .....	Mahone Bay.
Bown, Alex Hair .....	Halifax.
Charman, James Harry .....	Wallace.
Chisholm, John Edwin .....	Dartmouth.
Corey, Berton Stone .....	Petitediac.
Eagar, Martin Wingate .....	Dartmouth.
Floyd, Duncan Patrick, B. A. ....	Springfield, Ant.
Forsythe, Robert Bell .....	Alberton, P. E. I.
Gladwin, Alice Pearson .....	Truro.
Hill, Muriel Olive .....	Halifax.
Hill, Amy .....	Halifax.
Landry, Adolphe Frank .....	Amherst.
Logan, Frank Robert .....	Musquodoboit Har.
Macdonald, Alex Elmore Murray .....	Truro
Macleon, Donald .....	Fourchu, C. B.
McNiven, Catherine .....	New Westminster.
Moulton, George Albert .....	Burgeo, Nfld.
Peppard, Sarah Isabel .....	Halifax.
Ross, Edwin Byron .....	Peel, N. B.
Sterne, George Hibbert .....	Amherst.
Sutherland, Robert Hiram .....	River John.
Toombs, Herbert Wesley .....	N. Rustico, P. E. I.
Trueman, John MacMillan .....	St. John, N. B.

## FACULTY OF MEDICINE.

## UNDERGRADUATES.

## FOURTH YEAR.

Buckley, Clarence Edward Avery .....	Halifax.
Champion, James Beairsto .....	Alberton, P. E. I.
Cunningham, Allan Rupert B.A., (Dal) .....	Dartmouth.
Farquharson, William Oban, B.A., (Dal) .....	Halifax.
Jardine, Frederick W .....	Freetown, P. E. I.
Johnson, Thomas Ross .....	Onslow Mountain, Col.

MacAulay, Murdoch Alexander	Glace Bay, C. B.
MacDonald, Thomas Henry	New Glasgow.
MacKenzie, Eliza Margaret	Flat River, P. E. I.
MacKenzie, Jemima	Waterside, Pictou.
Messenger, Stella May	Tupperville, Annapolis.
Miller, Arthur Frederick	Charlottetown, P. E. I.
Munro, Blanche Margaret	Antigonish, N. S.
Pilot, Frederick William Harcourt	St John's Nfld.
Rankine, John, B.A., (Dal.)	Halifax.
Wallace, Peter James	Chatham, N. B.

## THIRD YEAR.

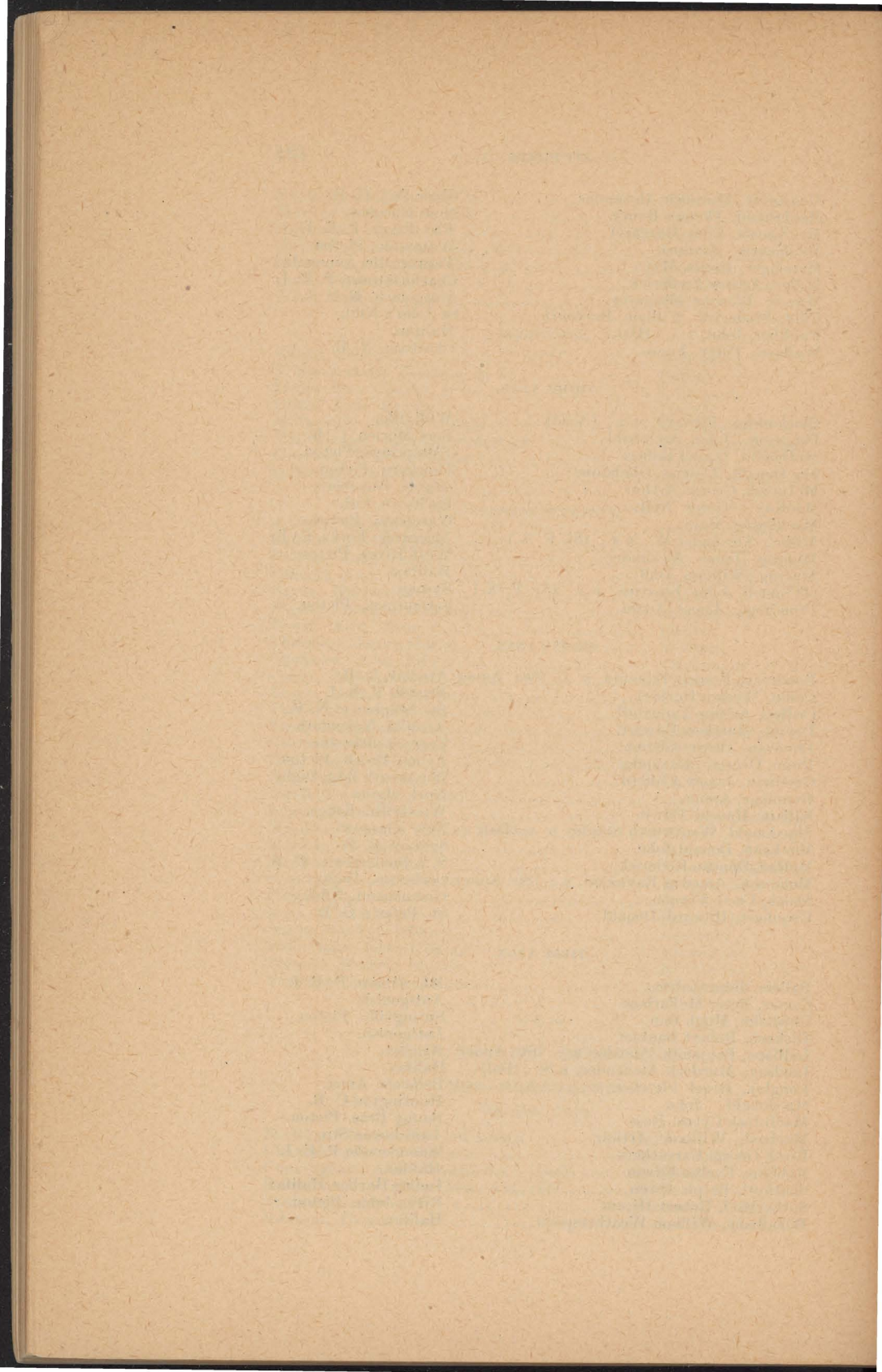
Blackadder, Edward, M.A., (Acad)	Wolfville.
Ferguson, John Archibald	Port Morien, C. B.
McDonald, Daniel Robert	Saltsprings, Pictou.
MacDonald, Thomas Gladstone	Thorburn, Pictou.
McIntosh, George Arthur	Argyle, Guysboro.
MacKay, Victor Neil	Earlton, Col.
Mackenzie, Mary	Waterside, Pictou.
Miller, Alexander W., B.A., (St. F. X.)	Margaree Forks, C. B.
Murray, James Alexander	West River, Pictou.
Murray, William Duff	Halifax.
O'Connell, John Ignatius, B.A., (St. F. X.)	Sydney.
Proudfoot, James Adam	Saltsprings, Pictou.

## SECOND YEAR

Boudreau, Francis Edmund, B. A. (Ste Anne)	Arichat, C. B.
Coffin, Wesley Herbert	Bristol, P. E. I.
Crilley, Arthur Tannahill	St. Stephen's, N. B.
Devine, Matthew Edward	Arcadia, Yarmouth.
Donovan, Oscar Glennie	Truro, Colchester.
Dunn, George Alexander	Lyons' Brook, Pictou.
Goodwin, James Clifford	Weymouth Bdg, Digby.
Hennigar, Annie	Noel, Hants.
Killam, Harold Edwin	Woodville, Kings.
Macdonald, Wentworth Stanley B.A. (Dal)	New Glasgow.
MacLean, Donald John	Sydney, C. B.
McRae, Duncan Roderick	S. S. Boularderie, C. B.
Melanson, Amedee Raymond, B.A. (Ste Anne)	Corberrie, Digby.
Smith, Cecil Vernon	Greenspond, Nfld.
Urquhart, Howard Donald	St. Peter's, C. B.

## FIRST YEAR.

Ballem, John Cedric	Mt. Albion, P. E. I.
Carter, Peter McFarlane	Antigonish.
Chisholm, Hugh Dan	Springville Pictou.
Dickson, Robert Bankier	Antigonish.
LeBlanc, Benjamin Amedee B.A. (Ste Anne)	Arichat.
Lindsay, Murdoch Alexander, B.Sc., (Dal)	Halifax.
Longley, Israel Fletcher	Belleisle, Anna.
Macdonald, John	Huntington C. B.
MacIntosh Cyrus Ross	Sunny Brae, Pictou.
Macleod, William Arthur	Lansdowne Stn.
Read, George Carruthers	Summerside P. E. I.
Robbins, Evelyn Edwin	Halifax.
Shatford, Ralph Owen	Indian Harbor, Halifax.
Sutherland, Robert Hiram	River John, Pictou.
Woodbury, William Weatherspoon	Halifax.





\*TIME TABLE—FACULTY OF LAW.

<i>Hours.</i>	<i>Monday.</i>	<i>Tuesday.</i>	<i>Wednesday.</i>	<i>Thursday.</i>	<i>Friday.</i>
9 to 10.....	Shipping.....	Const. History.....	Const. Law.....	Const. History.....	Const. Law.
10 to 11.....	Conflict of Laws....	Torts.....		Torts.....	International Law.
11 to 12.....			Sales.....	Moot Court.....	Equity.
12 to 1.....			Contracts.....		Contracts.
4.30 to 5.30.....	Real Property, 1st yr.	Real Property, 2nd yr.	Procedure.....	Evidence.....	
8 to 9.....					

\*Subject to alteration.

