ANNUAL CALENDAR

OF

The McGill University College

OF BRITISH COLUMBIA

Founded in 1906 by the Royal Institution for the Advancement of Learning of British Columbia, under authority of an Act of the Legislature

SEASON - - 1912—1913

EVANS & HASTINGS LTD., PRINTERS

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The Royal Institution for the Advancement of Learning of British Columbia

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Academic Year 1912—1913

1912

Thursday August 29th	Supplemental Examinations in Applied Science begin.
Monday September 2nd	Summer School in Surveying opens.
Friday September 20th	Matriculation and Supplemental Examinations in Arts begin.
Monday September 30th	Registration for new students.
Tuesday October 1st	Registration for students previously enrolled. Meeting of Faculty.
Wednesday October 2nd	Lectures begin.
Friday December 13th	Last day of lectures for term.
Monday December 16th	Examinations begin.
Saturday December 21st	Christmas Vacation begins.

1913

Monday January 6th	Second Term opens.
Monday January 20th	First Term Final Examinations in Applied Science.
Friday March 21st	Good Friday.
Wednesday April 16th	Last Day of Lectures.
Friday April 18th	Sessional Examinations begin.

Matriculation Examination Time Table

SEPTEMBER, 1912.

FRIDAY, SEPTEMBER 20TH

Morning	9-11.—English Literature.
	11-12.30.—Botany and Chemistry.
Afternoon	2.30-4.30.—English Composition.

MONDAY, SEPTEMBER 23RD.

Morning	9-11.—Latin Authors; Arithmetic.
Afternoon	2.30-4.30.—Latin Composition and Sight; English Grammar.

TUESDAY, SEPTEMBER 24TH.

Morning	9-11.—Algebra, Part I.
	11-1.—German; History.
Afternoon	3.00-4.30.—Trigonometry.

WEDNESDAY, SEPTEMBER 25TH.

Morning	9-11.—Geometry, Part I.
	11-12.30—Physics and Physiography.
Afternoon	2.30-4.30.—French.

THURSDAY, SEPTEMBER 26TH.

Morning	9-11.—Algebra, Part II: Greek Authors.
Afternoon	2.30-4.30.—Geometry, Part II; Greek Composition and Sight.

Special arrangements may be made for the examination of candidates who are prevented by severe illness or domestic affliction from presenting themselves on the dates fixed above.

EXAMINATION TIME TABLES

Faculty of Arts, Supplemental Examinations, September, 1912

DATE	Hour	Supp to First Year Sessional	Supp. to Second Year Sessional	Supp. to Third Year Sessional
Friday, 20	9	English Literature	English Literature	English Literature
	2	English Composition and History	English Composition	English Composition
Monday, 23	9	Latin Books	Latin Books	Latin Books
	2	Latin Composition, Sight Translation and History	Latin Composition, Sight Translation, History and Literature	Latin Composition, Sight Translation English Literature
Tuesday, 24	9	French	French	French
	2	French	French	
Wednesday, 25	9	Algebra	Algebra	Mathematics
	2	Trigonometry	Psychology	
Thursday, 26	9	Greek Books German	Greek Books Logic German	
	2	Greek Composition, Sight Translation and History German	Greek Composition, Sight Translation German	Greek Composition, Sight Translation English Literature
Friday, 27	9	Physics	Conics and Solid Geometry	
	2	Geometry	Chemistry	

EXAMINATION TIME TABLES

Faculty of Arts, Christmas Examinations, 1912

Morning examinations commence at 9; afternoon examinations at 2.

Day and Date	First Year	Second Year	Third & Fourth Years
Friday, Dec. 13th, P. M...	Trigonometry		
Monday, Dec. 16th, A. M.....	Geometry	French	
" " P. M....	Latin	Chemistry	Mathematics, German, Physics
Tuesday, Dec. 17th, A. M....	French		Latin, English
" " P. M....	English	Latin	Philosophy (Ethics) French
Wednesday, Dec. 18th, A. M..	Physics	Mathematics Logic	
" " P. M....	Greek	English	Greek, Psychology, Mechanics
Thursday, Dec. 19th, A. M...	German	Greek	Philosophy (Theory of Knowledge), English
" " P. M....	History		
Friday, Dec. 20th, A. M.....		German	

EXAMINATION TIME TABLES

Faculty of Arts, Sessional Examinations, 1913

Morning examinations commence at 9; afternoon examinations at 2.

Day and Date	First Year	Second Year	Third & Fourth Years.
Thursday, April 17th, A. M...			English Composition
Friday, April 18th, A. M.....	Algebra	French	
" " P. M....	History	French	
Monday, April 21st, A. M....	Latin	Chemistry	Mathematics, Physics
" " P. M....	Latin	Chemistry	Mathematics Physics
Tuesday, April 22nd, A. M...	French		Latin, English
" " P. M....	French		Latin, English
Wednesday, April 23rd, A.M.	English	Latin	Philosophy (Ethics) French
" " P. M....	English	Latin	Philosophy (Ethics) French
Thursday, April 24th, A. M...	Physics	Algebra Logic	
" " P. M....	Trigonometry	Spherical Trigonometry	
Friday, April 25th, A. M.....	Greek	English	Greek
" " P. M....	Greek	English	Greek
Monday, April 28th, A. M....	German	Greek	
" " P. M....	German	Greek	
Tuesday, April 29th, A. M....		German	
" " P. M....		German	

The McGill University College of British Columbia

HISTORICAL SKETCH

In 1894, at the instance of friends of higher education in the Province, who desired such relations between local high schools and universities in other parts of the Empire as would tend to the inception and promotion of university work in British Columbia, legislation was passed which empowered the affiliation of high schools to recognized universities; and this was supplemented in 1896 by an act providing for the incorporation of high schools as colleges in accordance with the charters and constitutions of such universities. Under these enactments Vancouver High School became Vancouver College, and was admitted to affiliation for the First Year in Arts by the Corporation of McGill University, which had in the meantime secured such extension of its charter powers as made possible the admission of extra-Provincial colleges to the relation of affiliation. Work was begun under this relation in 1899, and by 1902 the work had grown so, and was of such a character that an extension of affiliation was granted, to cover the second year in Arts and the University Intermediate Examination. This year Victoria College, too, applied for and obtained affiliation covering the First Year in Arts. Later the need of university connection more intimate still and essential than that of affiliation and also of extension of the scope of work came to be felt and urged, and the result was the passing in 1906 of local legislation (1) enacting that "the Governors, Principal, and Fellows of McGill College and University may exercise and enjoy in the Province of British Columbia all the powers, rights, privileges, and functions conferred upon them by the charter granted to them by His late Majesty, King George IV., in the second year of his reign, and amended by Her late Majesty, Queen Victoria, in the sixteenth year of her reign"; and (2) authorizing the incorporation of a body politic under the name of "The Royal Institution for the Advancement of Learning of British Columbia." and empowering this body to "undertake the conduct or administration of any part of the higher education work now

carried on by such Boards," and also to "establish at such place in British Columbia as McGill University may designate a College for the higher education of men and women, such College, in respect of courses of study and examinations, to be deemed a College of McGill University, and the instruction given to its students to be of the same standard as that given in like subjects at McGill University at Montreal."

In pursuance of the objects of its foundation, the Royal Institution established in 1906 at Vancouver the McGill University College of British Columbia (by agreement with the Board of School Trustees) taking over the Arts work previously done by the Vancouver College, increasing the number of the options allowed, and adding two years of Applied Science. In 1908 the course was further extended to include the Third Year in Arts.

In 1907 the act was amended so as to allow of the establishment of Colleges of the Royal Institution in other cities in the Province, and in the following year the College at Victoria, hitherto directly affiliated to McGill, came under the control of the Royal Institution as a part of the McGill University College of British Columbia, with courses in the first two years in Arts.

CONSTITUTION OF THE UNIVERSITY COLLEGE

Under the Act of the Legislature of the Province of British Columbia, the Royal Institution for the Advancement of Learning of British Columbia is constituted a body corporate, with all the usual rights and privileges of corporate bodies.

The members of the Royal Institution are the Governors of the College, and, as such, control the finances, make statutes and by-laws, appoint professors, and perform all other administrative duties.

The President of the Royal Institution is ex-officio *Chancellor* of the College.

The Principal is the Academic head and Chief Administrative Officer. He is appointed by the Board of Governors, of which body he is a member, ex-officio.

The statutes and regulations have been framed on the most liberal principles, with a view to providing, as far as pos-

sible for all classes of persons, opportunity for the attainment of mental culture.

The College is undenominational in character.

COURSES OF STUDY

The College offers instruction in the first, second and third years of the Arts Course, and in the first and second years of the Course in Applied Science of McGill University. The standard of work is that of McGill University, all the examinations being conducted by the Examining Board of that institution, which includes all the members of the local staff. Candidates passing the examinations at the end of any year in either Arts or Applied Science are admitted to the next year of McGill University without further examination.

The Courses in Arts are open to men and women on equal footing.

THE SESSION

The University Year or Session is divided into two terms, the first extending to the Christmas vacation, and the second from the expiry of the Christmas vacation to the end of the Sessional Examinations in April.

The Session of 1912-1913 will begin on Monday, October 2nd.

Two matriculation examinations will be held in 1912, the first commencing on Wednesday, June 12th, and the second on Friday, September 20th.

BOARD AND RESIDENCE

Good board and lodging can be obtained in the vicinity of the College buildings at a cost of from $25.00 per month upwards; or, separately, board at $16.00 to $21.00 per month; rooms at $9.00 to $12.00 per month.

A list of suitable boarding and lodging houses, the sanitary conditions of which are required to be properly certified, may be obtained upon application to the Secretary of the Young Men's Christian Association, 590 Cambie Street.

MATRICULATION

1.—Regulations.

1. Matriculation Examinations, which are those of McGill University, Montreal, are held only in June and September.

All inquiries relating to the examinations should be addressed to the Registrar.

2. Every candidate for examination is required to fill up an application form and return the same with the necessary fee (for which see page 17) one month before the examination begins. Blank forms may be obtained from the Registrar.

No applications for examination in June will be received after May 20th.

3. Examinations will be held in June at the following centres in British Columbia:—Yale, Summerland, Vancouver, and Victoria; but in September only at Vancouver and Victoria.

Candidates who are not within easy reach of any of the above centres are advised to prepare for entrance by taking an examination recognized by the University, as shown on pages 16 and 17. In centres where not more than four candidates are writing the fee for each will be determined by the Registrar, Montreal.

4. The matriculation examination may be taken in two parts, but in order to be valid for entrance it must be completed within two years from the date of the first attempt. At least four papers must be written at one time, except (a) in the case of candidates who have passed in that number at the June examination and who wish to take additional papers in the following September, and also (b) in the case of those who are not required to take as many as four papers to complete the examination. Credit will not be given for less than four papers on certificates which may be presented for exemption from the matriculation examination, and no certificate will be accepted which has been obtained under easier conditions than those which are imposed on candidates who are attempting to qualify for entrance by taking the regular University examination.

5. In order to pass, a candidate must obtain 40% of the marks in each subject and 50% of the aggregate for the subjects taken, however many and at whatever time.

This regulation applies also in the case of candidates who present certificates.

6. Candidates for admission to the Faculties of Arts, Applied Science, Law, Agriculture and the Department of Music who have failed to complete the matriculation requirements will be allowed to enter the first year as conditioned undergraduates, provided (a) that they have not failed in more than two papers (which in the Faculty of Applied Science cannot both be in the mathematical section) and (b) that they have obtained at least 25% in the subjects in which they have failed and 50% of the aggregate.

This regulation applies also to candidates who seek to satisfy the matriculation requirements by means of certificates granted by other recognized examining bodies.

In order to be admitted to the Faculty of Medicine, a candidate must pass in every subject required.

Students conditioned in a language must attend a special tutorial class during their first session, for which a fee of $10.00 is exigible. Any student so conditioned who fails to attend this class with regularity will not be allowed to present himself for examination.

Regulations 4, 5 *and* 6 *will become operative in* 1913. *The* 1912 *examinations will be held under the old conditions.*

7. Matriculation certificates will be issued to candidates who have passed the entrance examination conducted by the University, but not to those who have qualified by means of certificates, except when the greater part of the requirements have been satisfied by passing the University examination.

8. The certificates and diplomas named below will, if submitted to the Registrar, Montreal, be accepted *pro tanto* in lieu of the matriculation examination, *i.e.*, in so far as the subjects and standard of the examination taken to obtain them are, to the satisfaction of the Matriculation Board, equivalent to those required for the matriculation examination of this University. Candidates offering certificates which are not a full equivalent will be required to pass the matriculation exam-

ination in such of the necessary subjects as are not covered thereby.

Intending students who wish to enter by certificates should under no circumstances come to the University without having first obtained from the Registrar a statement of the value of the certificates they hold, as many of these may lack one or more essential subjects, or the work done in a subject may not be adequate, or again, the percentage gained may not be sufficiently high (See regulation 5.) Moreover, it must be remembered that a certificate may admit to one Faculty and not to another. When a diploma or certificate does not show the marks obtained in the several subjects of the examination, it must be accompanied by an official statement containing this information.

PROVINCE OF QUEBEC—

The University School Leaving certificate.

The Model School diploma, under certain conditions.

PROVINCE OF ONTARIO—

Certificates of admission to the Normal School and to the Faculty of Education.

Junior and Honour Matriculation certificates.

PROVINCE OF NEW BRUNSWICK—

First Class, Superior and Grammar School licences.

Grade XI and XII certificates.

PROVINCE OF NOVA SCOTIA—

The leaving certificates of Grades XI and XII.

PROVINCE OF PRINCE EDWARD ISLAND—

First Class Teachers' licences.

Second and Third Year certificates of Prince of Wales College.

PROVINCE OF BRITISH COLUMBIA—

Intermediate and Senior Grade certificates.

MANITOBA—

First and Second Class Teachers' certificates.

ALBERTA AND SASKATCHEWAN—

The Department examination certificates for Standards VII and VIII.

NEWFOUNDLAND—

Associate Grade certificates.

UNITED STATES—

Certificates granted by the College Entrance Examination Boards, and by the New York State Board of Regents.

GREAT BRITAIN—

The Senior and Higher certificates of the Oxford and Cambridge School Examination Boards, the First Class certificate of the College of Preceptors, and the Higher examination certificate of the Scotch and Welsh Education Departments.

Applications for exemption from the matriculation examination, based upon certificates of having passed examinations other than those above mentioned, will be considered as occasion may require by the Matriculation Board. Every such application must be accompanied by certificates and full particulars, and should be addressed to the Registrar, Montreal.

II. MATRICULATION EXAMINATION FEES.

For the first examination*	$5.00
(For examination at a local centre where not more than four candidates are writing the fee will be determined by the Registrar.)	
For a subsequent examination in one or two subjects	2.00
For a subsequent examination in three or more subjects	3.00
For examination of certificates, in respect of which candidates are exempted from the whole of the matriculation examination	1.00

Matriculation examination fees must be sent to the University Registrar at the time of application for the examination. No application will be accepted unless accompanied by the regular fee.

Certificates will be issued to successful candidates without additional fee.

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*In the case of candidates who qualify on certificates, or by other examinations in all but three subjects, or less, the fee will be $3.00.

III. SUBJECTS OF EXAMINATION.

Faculty of Arts.

(For candidates intending to take the B. A. course.)

1. English (two papers).
2. History (one paper).
3. Latin or Greek (two papers).
4. One of the following:
   Greek or Latin (the one not already chosen).
   French, German (two papers).
5. Algebra, Part I (one paper).
6. Geometry, Part I (one paper).
7. One of the following:
   Physiography, Botany, Chemistry, Physics (one paper),
   a Language not already chosen (two papers).

FACULTY OF APPLIED SCIENCE.

(For all courses leading to the Degree of B. Sc. in the different branches of Engineering).

1. English (two papers).
2. History (one paper).
3. One of the following:
   French, German, Latin, Greek (two papers).
4. Algebra, Parts I and II (two papers).
5. Geometry, Parts I and II (two papers).
6. Trigonometry (one paper).
7. One of the following:
   Physiography, Botany, Chemistry, Physics (one paper),
   a Language not already chosen (two papers).

(For the course leading to the Degree of B. Arch.)

1. English (two papers).
2. History (one paper).
3. French (two papers).

4. One of the following:
   Greek, Latin, German (two papers), Chemistry, Physics, (one paper).

5. Algebra, Part I (one paper).

6. Geometry, Part I (one paper).

7. Freehand and Geometrical Drawing.

In the case of No. 7, applicants may send specimens of their work to the Head of the Department or make arrangements with him to undergo a test. No examinations taken elsewhere are accepted as equivalents for this subject.

FACULTY OF MEDICINE.

1. English (two papers).

2. History (one paper).

3. Latin (two papers).

4. Algebra, Part I (one paper).

5. Geometry, Part I (one paper).

6. Chemistry (one paper).

7. Physics (one paper).

8. One of the following:
   Greek, French, German (two papers).

DEPARTMENT OF MUSIC.

(For the course leading to the Degree of Bachelor of Music)

1. English Grammar (one paper).

2. History and Geography (one part).

3. Arithmetic (one paper).

4. English (two papers).

5. French or German or Italian (two papers).

6. Rudiments of Music (musical intervals, scales, clefs, time signatures, construction of chords, elementary harmony to chord of dominant seventh (one paper).

Optional:—Algebra, Part I and Geometry, Part I. A pass in either, or both of these subjects will help to make up for deficiency in any others.

IV. REQUIREMENTS IN EACH SUBJECT.

ENGLISH GRAMMAR—

Main facts in conection with the history of the language; etymology and syntax. A good knowledge of parsing and analysis is essential. West's English Grammar for Beginners is recommended as a text-book.

One examination paper of two hours.

HISTORY AND GEOGRAPHY—

Candidates will be required to show a somewhat intimate acquaintance with the history of England, from 1485 to the present time. While any text-book written for the upper forms of schools may be used in preparation for the examination, Gardiner's Outline of English History (Longmans) is recommended.

The geography required will be that relating to the history prescribed.

One examination paper of two hours.

ARITHMETIC—

All the ordinary rules, including square root, and a knowledge of the metric system.

One examination paper of two hours.

ENGLISH—

Composition.—As in Sykes's Elementary Composition. with an essay on some subject connected with the works prescribed in literature. Frequent practice in composition is essential.

Literature.—For 1913.—Any two of the following: Shakespeare's Julius Caesar; Nineteenth Century Prose (ed. Cunliffe), pp. 127 to the end, with notes (Copp, Clark Co.);

Poems of the Romantic Revival (Copp, Clark Co.), pages 83 to the end, with notes; Tennyson's Select Poems, editor Alexander (Copp, Clark Co.).

Two examination papers of two hours each.

An alternative paper will be set on the work specified in English for the Junior matriculation examination of the Province of Ontario.

Spelling will be tested by the candidates' papers in English composition and literature. Examiners in other subjects will also take note of mis-spelled words and will report flagrant cases to the Board.

GREEK—For 1913—

Texts.—Xenophon, Anabasis, Book 1, Chaps, 1 to 8, or Philpotts and Jerram, Easy selections from Xenophon. (In 1914 the examination will be on the latter text-book only).

Grammar.—Knowledge of grammar will be tested by translation and composition, and by grammatical questions based on the specified texts.

Translation at Sight from Greek into English.

Composition.—Translation into Greek of detached English sentences and easy narrative based on the prescribed texts.

Two papers of two hours each will be set; one on composition and translation at sight, the other on prescribed texts and grammar.

Alternative questions will be set on the work prescribed in Greek for the Junior matriculation examination of the Province of Ontario, if this differs from that specified above.

At the September examination other texts equivalent to those specified may be accepted if application be made to the Registrar at least one month before the date of the examination.

LATIN—For 1913—

Texts.—(A) *Either* Cæsar, De Bello Gallico, Book IV, Chap. 20 to the end and Book V, *or* Cæesar, De Bello Gallico, Books II and III; and (B) *Either* Ovid, Stories from the Metamorphoses (as in Gleason's "A Term of Ovid," American

Book Company), lines 1 to 670, *or* Virgil, Aeneid II (Wainwright, Bell's Illustrated Classics).

In 1914, and thereafter, the examination in Caesar will be on Books II and III only, but the option under (B) will be continued.

Grammar.—Knowledge of grammar will be tested by translation and composition, and by grammatical questions based on the specified texts.

Translation at Sight from Latin into English.

Composition.—Translation into Latin of detached English sentences and easy narrative based on the prescribed texts.

Two papers of two hours each will be set; one on composition and translation at sight, the other on prescribed texts and grammar.

NOTE.—The Roman method of pronouncing Latin is recommended.

An alternative paper will be set on the Latin texts prescribed for the Junior matriculation examination of the Province of Ontario, if these differ from those specified above.

At the September examination other texts in Latin equivalent to those specified may be accepted, if application be made to the Registrar at least a month before the day of the examination.

FRENCH—

Grammar.—A thorough knowledge of French accidence and of those points of syntax which are of more frequent occurrance in an ordinary easy style.

Translation at Sight into English of a French passage of moderate difficulty.

Translation at Sight into French of detached English sentences and an easy English passage. Material for such translation is selected with a view to testing the candidate's general knowledge of French grammar. Candidates are required to pass in English-French translation as well as in the paper as a whole.

Books recommended:—Bertenshaw's French Grammar (Longman), and Cameron's Elements of French Prose Composition (Holt & Co.).

A list of French texts suitable for class reading can be obtained by applying to the Registrar, Montreal.

Two examination papers of two hours each.

GERMAN—

Grammar.—A thorough knowledge of German accidence and syntax as in Van der Smissen, or any other German grammar of equally good standing.

Translation at Sight into English of a German passage of moderate difficulty.

Translation into German of detached English sentences and of an easy English passage. Material for such translation is selected with a view to exemplifying the points of grammar included within the above limits.

Texts.—(Translation and grammatical study) :—

For 1913 and 1914.—Volkmann, Kleine Geschichten (Heath & Co.); Stille Wasser, ed. Bernhardt (Heath & Co.). It is recommended that candidates should read the prescribed texts in the above order, beginning in Volkmann's Kleine Geschichten with Himmelsschlüssel and Siebenmeilenstiefel.

The Ontario Junior matriculation requirements in German will be accepted in place of the texts specified above.

At the September examination other texts equivalent to those specified may be accepted, if application be made to the Registrar at least one month before the date of the examination.

Two examination papers of two hours each.

ALGEBRA, PART I.—

Elementary rules, involution, evolution, fractions, indices, surds, simple and quadratic equations of one or more unknown quantities; as in Hall and Knight's Elementary Algebra to the end of surds (omitting portions marked with an asterisk), or as in similar text-books.

One examination paper of two hours.

ALGEBRA, PART *II.*—

The three progressions, ratio, proportion, variation, permutations and combinations, binomial theorem, logarithms, theory of quadratic equations, as in the remainder of Hall and Knight's Elementary Algebra (omitting Chaps. 40 to 44 inclusive), or as in similar text-books.

One examination paper of an hour and three-quarters.

GEOMETRY, PART I—

The paper shall contain questions on practical and on theoretical geometry. Every candidate shall be expected to answer questions in both branches of the subject.

The questions on practical geometry shall be set on the constructions contained in the annexed Schedule A, together with easy extensions of them. In cases where the validity of a construction is not obvious, the reasoning by which it is justified may be required. Every candidate shall provide himself with a ruler graduated in inches and tenths of an inch, and in centimeters and millimeters, a set square, a protractor, compasses and a hard pencil. All figures should be drawn accurately. Questions may be set in which the use of the set square or of the protractor is forbidden.

The questions on theoretical geometry shall consist of theorems contained in the annexed Schedule B, together with questions upon these theorems, easy deductions from them, and arithmetical illustrations. Any proof of a proposition shall be accepted which appears to the examiners to form part of a systematic treatment of the subject; the order in which the theorems are stated in Schedule B is not imposed as the sequence of their treatment.

In the proof of theorems and deductions from them, the use of hypothetical constructions shall be permitted. Proofs which are only applicable to commensurable magnitudes shall be accepted.

Schedule A.

Bisection of angles and of straight lines.

Construction of perpendiculars to straight lines.

Construction of an angle equal to a given angle.

Construction of parallels to a given straight line.

Simple cases of the construction from sufficient data of triangles and quadrilaterals.

Division of straight lines into a given number of equal parts or into parts in any given propositions.

Construction of a triangle equal in area to a given polygon.

Construction of tangents to a circle and of common tangents to two circles.

Simple cases of the construction of circles from sufficient data.

Construction of a fourth proportional to three given straight lines and a mean proportional to two given straight lines.

Construction of regular figures of 3, 4, 6 or 8 sides in or about a given circle.

Construction of a square equal in area to a given polygon.

Schedule B.

If a straight line stands on another straight line, the sum of the two angles so formed is equal to two right angles; and the converse.

If two straight lines intersect, the vertically opposite angles are equal.

When a straight line cuts two other straight lines, if (i) a pair of alternate angles are equal or (ii) a pair of corresponding angles are equal, or (iii) a pair of interior angles on the same side of the cutting line are together equal to two right angles, then the two straight lines are parallel; and the converse.

Straight lines which are parallel to the same straight line are parallel to one another.

The sum of the angles of a triangle is equal to two right angles.

If the sides of a convex polygon are produced in order, the sum of the angles so formed is equal to four right angles.

If two triangles have two sides of the one equal to two sides of the other, each to each, and also the angles contained by those sides equal, the triangles are congruent.

If two triangles have two angles of the one equal to two angles of the other, each to each, and also one side of the one equal to the corresponding side of the other, the triangles are congruent.

If two sides of a triangle are equal, the angles opposite to these sides are equal and the converse.

If two triangles have the three sides of the one equal to the three sides of the other, each to each, the triangles are congruent.

If two right-angled triangles have their hypotenuses equal, and one side of the one equal to one side of the other, the triangles are congruent.

If two sides of a triangle are unequal, the greater side has the greater angle opposite to it; and the converse.

Of all the straight lines that can be drawn to a given straight line from a given point outside it, the perpendicular, is the shortest.

The opposite sides and angles of a parallelogram are equal, each diagonal bisects the parallelogram, and the diagonals bisect one another.

If there are three or more parallel straight lines, and the intercepts made by them on any straight line that cuts them are

equal, then the corresponding intercepts on any other straight line that cuts them are also equal.

Parallelograms on the same or equal bases and of the same altitude are equal in area.

Triangles on the same or equal bases and of the same altitude are equal in area.

Equal triangles on the same or equal bases are of the same altitude.

Illustrations and explanations of the geometrical theorems corresponding to the following algebraical identities.

$$\begin{aligned} k(a+b+c\ldots) &= ka+kb+kc+\ldots \\ (a+b)^2 &= a^2+2ab+b^2 \quad \ldots \\ (a-b)^2 &= a^2-2ab+b^2 \quad \ldots \\ (a^2-b^2) &= (a+b)\ (a-b). \end{aligned}$$

The square on a side of a triangle is greater than, equal to, or less than the sum of the squares on the other two sides, according as the angle contained by those sides is obtuse, right, or acute. The difference in the cases of inequality is twice the rectangle contained by one of the two sides and the projection on it of the other.

The locus of a point which is equidistant from two fixed points is the perpendicular bisector of the straight line joining the two fixed points.

The locus of a point which is equidistant from two intersecting straight lines consists of the pair of straight lines which bisect the angles between the two given lines.

A straight line, drawn from the centre of a circle to bisect a chord which is not a diameter, is at right angles to the chord; conversely, the perpendicular to a chord from the centre bisects the chord.

There is one circle, and one only, which passes through three given points not in a straight line.

In equal circles (or, in the same circle) (i) if two arcs subtend equal angles at the centres, they are equal; (ii) conversely, if two arcs are equal, they subtend equal angles at the centres.

In equal circles (or, in the same circle) (i) if two chords are equal, they cut off equal arcs; (ii) conversely, if two arcs are equal, the chords of the arcs are equal.

Equal chords of a circle are equidistant from the centre; and the converse.

The tangent at any point of a circle and the radius through the point are perpendicular to one another.

If two circles touch, the point of contact lies on the straight line through the centres.

The angle which an are of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference.

Angles in the same segment of a circle are equal; and, if the line joining two points subtends equal angles at two other points on the same side of it, the four points lie on a circle.

The angle in a semicircle is a right angle; the angle in a segment greater than a semicircle is less than a right angle; and the angle in a segment less than a semicircle is greater than a right angle.

The opposite angles of any quadrilateral inscribed in a circle are supplementary; and the converse.

If a straight line touch a circle, and from the point of contact a chord be drawn, the angles which this chord makes with the tangent are equal to the angles in the alternate segments.

If two chords of a circle intersect either inside or outside the circle the rectangle contained by the parts of the one is equal to the rectangle contained by the parts of the other.

If a straight line is drawn parallel to one side of a triangle, the other two sides are divided proportionally; and the converse.

If two triangles are equiangular their corresponding sides are propotional; and the converse.

If two triangles have one angle of the one equal to one angle of the other and the sides about these equal angles proportional, the triangles are similar.

The internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the sides containing the angle, and likewise the external bisector externally.

The ratio of the areas of similar triangles is equal to the ratio of the squares on corresponding sides.

Text-book recommended for the present:—Godfrey and Siddons' Elementary Geometry (Pitt Press, Cambridge), or Hall and Stevens' School Geometry.

An alternative paper will be set on the Ontario Junior Matriculation requirements in this subject.

One examination paper of two hours.

In 1913 an option will be allowed on Euclid, Books I, II and III, as in Hall and Stevens' Euclid (Macmillan & Co.)

GEOMETRY, PART II—

Constructions

To draw the inscribed, escribed, and circumscribing circles of a triangle.

To construct triangles under given conditions.

To divide a given line externally and internally in medial section.

To construct an isosceles triangle, such that each of the base

angles is twice the vertical angle.

To describe a regular pentagon.

To construct a polygon similar to a given polygon, and such that their areas are in a given ratio.

To construct a figure equal in area to a given figure A, and similar to another figure B.

Theorems

If two sides of one triangle be equal respectively to two sides of another, that with the greater contained angle has the greater base; and conversely.

If a triangle is such that the square on one side is equal to the sum of the squares on the other two sides, the angle contained by these sides is a right angle.

The three medians of a triangle are concurrent.

Perpendiculars from the angles to the opposite sides of a triangle are concurrent.

The complements of parallelograms about the diagonal of any parallelogram are equal.

If the circumference of a circle be divided into n equal arcs:—

(1) The points of division are the vertices of a regular polygon of n sides inscribed in the circle;

(2) If tangents be drawn to the circle at these points, these tangents are the sides of a regular polygon of n sides circumscribed about the circle.

If $OA : OB = OC^2$, OC is a tangent to the circle through ABC.

If two triangles have an angle in each equal, and the sides about two other angles proportional, the remaining angles are equal or supplemental.

The perpendicular from the right angle of a right-angled triangle on the hypotenuse divides the triangle into two triangles which are similar to the original triangle.

The sum of the rectangles contained by the opposite sides of a quadrilateral, about which a circle can be described, is equal to the rectangle contained by its diagonals.

The squares on two sides of a triangle are together equal to twice the square on half the third side and twice the square on the median to that side.

If from the vertical angle of a triangle a straight line be drawn perpendicular to the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the perpendicular and the diameter of the circle described about the triangle.

If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the segments of the base, together with the square on the straight line which bisects the angle.

The areas of two similar polygons are as the squares on corresponding sides.

In a right angled triangle the rectilineal figure described on the hypotenuse is equal to the sum of the similar and similarly described figures on the other two sides.

If three lines be proportional, the first is to the third as the figure on the first is to a similar figure on the second.

If the straight lines joining a point to the vertices of a given polygon are divided (all externally or all internally) in the same ratio, the points of division are the vertices of a similar polygon.

Two similar polygons may be so placed that the lines adjoining corresponding points are concurrent.

Triangles of equal altitude are as their bases.

In equal circles, angles, whether at the centres or circumferences, are proportional to the arcs on which they stand.

If P is any point on the circumscribing circle of a triangle, ABC, and PL, PM, PN are perpendicular to BC, CA, AB, respectively, LNM is a straight line.

A point P moves so that the ratio of its distances from two fixed points, Q and R, is constant; prove that the locus of P is a circle.

Areas

Area of a circle.

Area of a sector of a circle.

Area of a segment of a circle.

Use of Squared Paper

Marking points.

Finding areas of rectilinear and curvilinear figures.

Examples of plotting loci: in particular, the ellipse, hyperbola, and parabola.

Examples of loci and envelopes.

Deductions and Applications

Deductions from, and simple applications of the constructions and theorems given above.

Text-book:—Godfrey and Siddons' Elementary Geometry (Pitt Press, Cambridge), or Hall and Stevens' School Geometry.

One examination paper of an hour and three-quarters.

An alternative paper will be set on the work prescribed for Honour matriculation in the Province of Ontario.

In 1913 an option will be allowed on Euclid, Books IV and VI with definitions of Book V, as in Hall and Stevens' Euclid (Macmillan & Co.).

TRIGONOMETRY—

Measurement of angles, trigonometrical ratios or functions of one angle, of two angles, and of a multiple angle; as in Lock's Elementary Trigonometry, Chaps. I. to XII., Hall and Knight's Trigonometry, Chaps. I to XII., inclusive, omitting Chap. V.; or as in similar text-books.

One examination paper of an hour and a half.

PHYSIOGRAPHY—

The elements of the science, as in Davis's Elementary Physical Geography, or any other text-book covering the same ground.

One examination paper of an hour and a half.

BOTANY—

Text-book recommended, Bergen, Essentials of Botany.

One examination paper of an hour and a half.

CHEMISTRY—

Elementary inorganic chemistry, comprising the preparation and properties of the chief non-metallic elements and their more important compounds, the laws of chemical action, combining weight, etc. The ground is simply and effectively covered by Remsen's "Elements of Chemistry," pp. 1 to 165 and 218 to 243. Macmillan's Edition).

One examination paper of an hour and a half.

PHYSICS—

Properties of matter; elementary mechanics of solids and fluids, including the laws of motion, simple machines, work, energy; fluid pressure and specific gravity; thermometry, the effects and modes of transmission of heat.

Text-books recommended—Gage's Introduction to Physical Science, 1902 edition (Ginn & Co.), Chaps. I to IV, inclusive; or "Physics," by Mann & Twiss, Revised Edition (Scott, Foresman & Co., Chicago).

One examination paper of an hour and a half.

V. ADMISSION TO ADVANCED STANDING

(1) *Entrance to Second Year Arts.*

Admission to the Second Year in Arts is open, as a rule, only to undergraduates who have passed the First Year sessional examination in regular course, but in special cases, to be dealt with by the Faculty, candidates may be admitted directly to the Second Year without having passed through the curriculum of the First Year.

(2) *Admission Ad Eundem Statum.*

A student of another university applying for exemption from any subject or subjects which he has already studied is required to submit with his application a Calendar of the University in which he had previously studied, together with a complete statement of the course he has followed and a certificate of the standing gained therein.

The Faculty, if otherwise satisfied, will decide what examination, if any, or what other conditions may be necessary before admitting the candidate.

Undergraduates in Arts of the Second and Third Years, or graduates in Arts of any university, entering the Faculty of Applied Science, may at the discretion of the Faculty, be exempted from such lectures as they have previously attended as students in Arts.

VI. Physical Examination.

In order to promote as far as possible the physical welfare of the student body, every student, on entering the University will be required to pass a physical examination to be conducted by, or under the direction of, a Medical Examiner.

By such an examination physical defects and weaknesses, amenable to treatment, may be discovered. The student is then expected to apply to his physician for such remedial measures as his case may require. Those who are examined are also advised as to the forms of exercise or athletic activities which would likely be beneficial or injurious.

VII. Age of Admission.

Except under special circumstances no student under the age of sixteen is admitted to the First Year courses in Arts, Applied Science or Medicine, or under the age of seventeen to the Second Year.

REGISTRATION AND ATTENDANCE

1. Registration.

Between September 23rd and September 27th, both dates inclusive, students may register for the Session 1912-1913 at the office of the Registrar. Monday, September 30th, will be special registration day for new students. On Tuesday, October 1st, those who had been previously enrolled will register. Lectures will commence on Wednesday, October 2nd. The complete regulations regarding registration are as under:

1. Candidates entering on a course of study in any Faculty, whether as undergraduates, conditioned students or partial students, are required to attend at the office of the Registrar, some time during the week preceding the opening day of the session, in order to furnish the information necessary for the University records, to register for the particular classes which they wish to attend, and to sign the following declaration in the matricula or register:—

"I hereby accept and submit myself to the statutes, rules, regulations and ordinances of McGill University, and of the Faculty or Faculties in which I am registered, and to any amendments thereto which may be made while I am a student of the University, and I promise to observe the same."

2. Students who have been previously enrolled shall register not later than the day immediately before the opening day of the session.

3. Students who for any reason have failed to register at the times specified above will be permitted to do so within a limited time thereafter. Those who do not register by Tuesday, October 1st, will be allowed to do so thereafter only when they have paid a fee of $2.00 for late registration.

4. The Registrar is empowered to register all students whose records show that they are entitled to attend the classes applied for. To enable them to determine this, new students must present certificates at time of registration. All doubtful cases shall be dealt with by the Faculty.

5. The names of those who have registered for separate classes shall be sent by the Registrar to the Instructors on registration day and subsequently, as new names are received, and only those for whom cards have been received by an

instructor shall be admitted to his class; except in the case of students whose standing cannot be determined at the time of registration. To these special tickets will be issued, which will give them the right of admission to classes until such time as their status is ascertained.

6. Students desiring to make a change in their choice of studies must make application to the Registrar to do so on a regular form. This application must be approved by the Principal, whereupon due notice will be sent by the Registrar to all parties concerned. No change in registration will be allowed, except under special circumstances, after the fifteenth day of the session.

7. Persons who wish to pursue courses in the College without a view to qualifying for a degree shall be classified as partial students and shall not be admitted to any course until they have obtained the permission of the Instructor concerned. Their application must then be approved by the Faculty.

8. In the Faculty of Arts, where there is a choice of courses, students in attendance shall be required to choose their electives for the next year before the close of the preceding session, or (in cases where this cannot be done), not later than one week before the opening of the session.

2. ATTENDANCE.

1. Students are required to attend at least seven-eights of the total number of lectures in any one course. Those whose absences exceed one-eighth of the total number of lectures in a course shall not be permitted to come up for the examination in that course.

Excuses on the ground of illness or domestic affliction shall be dealt with only by the Principal.

2. A record shall be kept by each professor or lecturer, in which the presence or absence of students shall be carefully noted. This record shall be submitted to the Faculty when required.

3. Credit for attendance on any lecture or class may be refused on the grounds of lateness, inattention, neglect of study, or disorderly conduct in the class room or laboratory. In the case last mentioned, the student may, at the discretion of the Professor, be required to leave the room. Persistence

in any of the above offences against discipline shall, after admonition by the Professor, be reported to the Principal. The Principal may, at his discretion, reprimand the student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from classes.

4. The following special regulations with regard to marking the attendance of students have been adopted:—

Lectures will commence at five minutes after the hour, on the conclusion of the roll-call. After the commencement of a lecture students are not allowed to enter, except with the permission of the Professor. If permitted to enter, they will, on reporting themselves at the close of the lecture, be marked "late." Two lates will count as one absence.

CLASSES OF STUDENTS

There are three classes of students:—

(1) Undergraduates—students who have passed the matriculation examination and, in the case of second and third year students, all the examinations of their course in the years below that in which they are registered.

(2) Conditioned Undergraduates—those with defective entrance qualifications or who have failed in one or more of the subjects of their course in the year previous to that in which they are registered.

(3) Partial Students—comprising all those who, not belonging to one of the above classes, are taking a partial course of study. Except as provided below, such students may (subject to the approval of the Head of the Department and the Dean or the Committee appointed for this purpose) attend any class without previous examination.

In order to obtain admission to the First Year class in French, intending students must have passed the University matriculation examination, or an equivalent examination, in that subject.

FEES

General Regulations.

1. Fees shall be paid to the Registrar in two payments on or before October 10th and January 10th. After these dates an additional fee of $2.00 will be exacted of all students in default.

No fees will be refunded to partial students under any circumstances whatever.

2. Immediately after October 20th the Registrar shall send to the Instructors a list of the registred students who have not paid their fees, on receipt of which their names shall be struck from the registers of attendance, and such students cannot be re-admitted to any class except on presentation of a special ticket, signed by the Registrar, certifying to the payment of fees.

Students registering after October 20th shall pay their fees at the time of registration, failing which they become subject to the provisions of Regulation 2.

Students should note that this regulation applies to parts of a course such as History, Composition, &c., in which separate examinations are held.

Fees in Arts.

(*For Regulations re payment, see above*).

Students pursuing the full undergraduate course pay a sessional fee of $10.

Partial students pay fees as follows:—

Chemistry, per term	$5.00
Physics, per term	5.00
Other subjects, per term	3.00

Fees in Applied Science.

Sessional fee for full undergraduate course	$50.00
Field work in surveying	25.00
Laboratory courses, per term	5.00
Draughting, per term	5.00
Lecture courses, per term	3.00

SPECIAL FEES—

Supplemental examination in any subject or any part of a subject, taken at the regular date fixed by the Faculty	$2.00
Supplemental examination, when granted at any other time than the regular date fixed by the Faculty, for each examination period	5.00

A deposit of $5.00 as caution money is required from each student. This deposit is returned at the end of the session, after deductions have been made to cover breakages, etc.

At the request of the students themselves, and by the authority of the Royal Institution, two dollars additional will be exacted from all students for the support of the Student Activities Association.

INFORMATION FOR STUDENTS IN ARTS

Ordinary Course for the Degree of B.A.

After passing the matriculation examination, an undergraduate, in order to obtain the degree of B. A. or B. Sc., is required to attend regularly the appointed courses of lectures for four years. (Undergraduates are arranged in years, from First to Fourth, according to their academic standing). The conditions of passing into the last three years of the undergraduate course are stated on page——.

I. ORDINARY COURSE FOR THE DEGREE OF *B. A.*

First Year.

GREEK, 1, *or* LATIN, 1.

ENGLISH AND HISTORY, 1.

MATHEMATICS, 1—ALGEBRA, GEOMETRY AND TRIGONOMETRY.

LATIN, *or* GREEK, 1, or FRENCH, 1. 2, *or* GERMAN, 1.

PHYSICS, 1.

French cannot be taken as a qualifying option in the First Year, except by students who have passed the matriculation examination in this subject.

German may be taken instead of trigonometry by students who intend to read for modern language or English honours. This option will, however, be granted only on the recommendation of the departments concerned.

An additional language may be taken as an extra subject in the first two years, if the permission of the Advisory Committee has been obtained at the beginning of the session. Credit will be given for it on application.

Students intending to take the double course in Arts (B. A.) and Applied Science must take a modern language in the First Year.

Second Year.

ENGLISH COMPOSITION, 2.

LATIN, 2, *or* GREEK, and *three* of the following:

GREEK, 2, *or* LATIN, 2.

ENGLISH, 2.

FRENCH, 3, 4.

GERMAN, 3.

PSYCHOLOGY AND LOGIC, 1A and 1B.

MATHEMATICS, 2.

CHEMISTRY, 1.

Students intending to take the double course in Arts (B.A.) and Applied Science must take Mathematics and a modern language.

Third Year.

ENGLISH, 3A, 3B, 3C.

And two of the following:—

MATHEMATICS.

PHYSICS.

LATIN, 3.

FRENCH, 5, 6.

GREEK.

PHILOSOPHY.

Mathematics or Physics must be one of the subjects chosen by students who have not taken Chemistry in the Second Year.

EXAMINATIONS IN ARTS.

1. There are two examinations in each year, viz., at Christmas and at the end of the session. Successful students are arranged in three classes at the sessional examinations. Those who obtain 75 per cent. and over are placed in the First Class; those who have between 60 and 75 per cent. in the Second Class, and those with from 40 to 60 per cent. in the Third Class.

Christmas examinations will be held in all the subjects of the First and Second Years, and are obligatory on all undergraduates, and also on all partial students of the First Year, unless they have been specially exempted. Partial students of the First Year who fail in the Christmas examinations will be allowed to continue their course only by obtaining the consent of the Principal and the instructor concerned. *Undergraduates and conditioned undergraduates of the First Year who fail in more than three subjects at the Christmas examinations will be allowed to attend not more than three courses after Christmas as partial students, for each of which they must obtain the permission of the instructor concerned.*

Twenty-five per cent. of the marks given for the sessional work in each subject will be assigned for the results of the Christmas examinations. There are also, on dates approved by the Faculty, mid-term examinations, the results of which are taken into account in determining the final standing of the student. Students prevented by illness from attending the Christmas examinations, will, on presenting a medical certificate, be given sessional standing on the results of the April examinations, if they have obtained an average of 40 per cent. at the two mid-term examinations, or (where no mid-term examinations are given) an average of 40 per cent. in class exercises. Christmas examinations in the Third Year may be held at the option of the professors. When held, the same value will be assigned to them as in the case of the First and Second Years.

2. The following are the regulations for advancement to the Second, Third and Fourth Years of the undergraduate course and are subject to the condition that a student shall not be allowed to continue a subject of the preceding year in which he has not made good his standing, except in the case of compulsory subjects in the Second Year.

Advancement to the Second Year.—A student who has failed to complete one of the ordinary courses of the First Year may enter the Second Year without special permission of the Faculty.

A student who has failed to complete two of the ordinary courses of the First Year shall be permitted to enter the Second Year, but only on the condition that an average of 50 per cent. has been obtained in the other subjects of the First Year Course.

Advancement to the Third Year.—A student may be allowed to proceed to the Third Year with one subject uncompleted if that subject belongs to the Second Year.

Advancement to the Fourth Year.—A student may be allowed to proceed to the Fourth Year with one subject uncompleted if that subject belongs to the Third Year.

Repeating Year.—By special permission of the Faculty, a student who is required to repeat his year may, on application in writing:—

(a) Be exempted from attending lectures and passing examinations in the subjects in which he has already passed.

(b) Be permitted to take, in addition to the subjects in which he has failed, one of the subjects of the following year of his course.

3. Examinations supplemental to the sessional examinations will be held in September, simultaneously with the matriculation examinations. The time for each supplemental examination will be fixed by the Faculty; the examination will not be granted at any other time, except by special permission of the Faculty, and on payment of a fee of $5.

4. A list of those to whom the Faculty has granted supplemental examinations in the following September will be published after the sessional examination.

Double Courses.

Arts and Applied Science.

Students who wish to obtain the degrees of B. A. and B. Sc. (Applied Science) in six years, will spend the first three years in Arts, but must take certain classes in Applied Science during the Second and Third Years. The student will then enter the Faculty of Applied Science and devote the remaining three years entirely to the work of this Faculty.

All students in the First and Second Years of the double course must, on the 31st of March, notify the Principal that they intend to take or are taking this double course.

The subjects which they are required to take each year in the Faculty of Arts are as follows:—

First Year.

The curriculum as laid down for the B. A. degree in this year, except that a modern language *must* be taken.

Second Year.

1. ENGLISH COMPOSITION.

2. LATIN.

3. MATHEMATICS (ordinary, supplemented by the regular courses on SPHERICAL TRIGONOMETRY and on DYNAMICS, STATICS and HYDROSTATICS of the First Year Applied Science).

4. FRENCH *or* GERMAN.

5. THE MODERN LANGUAGE NOT SELECTED UNDER NO. 4 (IF STUDIED IN THE FIRST YEAR), *or* ENGLISH.

6. SHOPWORK (moulding and smithwork).

Third Year.

1. ENGLISH COMPOSITION.

2. PHYSICS.

3. Any two of the following:—
ENGLISH, LATIN, FRENCH.

4. DESCRIPTIVE GEOMETRY.

5. SHOPWORK (woodworking). Mechanical drawing to be taken after the close of the session, and Freehand Drawing during their Second Year Science.

ARTS AND MEDICINE.

Students who wish to obtain the Degree of B. A. or B. Sc. (Arts) and M. D., in seven years will take three years in the Faculty of Arts and during the remaining four years will work altogether in the Faculty of Medicine.

For information as to this course apply to the Registrar.

A certificate of "Literate in Arts" will be given along with the professional Degree in Medicine or Applied Science, to those who have completed two years' study in the Faculty of Arts, and have passed the prescribed examinations.

Arts and Theology.

1. The Faculty will make formal reports to the governing body of the Theological College which such students may attend as to:—(*a*) their conduct and attendance on the classes of the Faculty, (*b*) their standing in the several examinations; such reports to be furnished after the examinations, if called for.

2. Students who are pursuing a double course in Arts and Divinity (six years at least) will take in the Third and Fourth Years the courses which constitute the ordinary curriculum in Arts, less a half course in each of these years, or a whole course in either.

For the benefit of students desirous of continuing their studies in Music the following extract is made from the Calendar of McGill University, Montreal:

"In the Conservatorium of Music. For the degrees of Bachelor of Music (Mus. Bac.) and Doctor of Music (Mus. Doc.).

"For the diploma of Licentiate in Music, and the several Grade examination certificates.

"Students are admitted as *Regular Students* taking an organized course leading to the diploma of Licentiate in Music or the degree of Bachelor of Music, or as *Partial Students,* who, under certain conditions and after examination, can obtain certificates bearing the imprimatur of the University. Full details can be obtained on application to the Secretary of the McGill Conservatorium of Music, 323 Sherbrooke Street, West, Montreal."

Courses of Lectures in Arts.

Greek.

All students taking Greek are expected to provide themselves with a grammar, a Greek-English dictionary, and an Atlas of ancient geography. The following are recommended:

Allen's Elementary Greek Grammar; Liddell and Scott's Greek Lexicon (abridged, or intermediate); Kiepert's Atlas Antiquus, or Putzger's Historical Atlas.

FIRST YEAR—

1. Lectures, four hours a week.

For 1912-1913: AUTHORS: Thucydides, Rise of the Athenian Empire (Colson, Macmillan's Elementary Classics); Euripides, Alcestis (Blakeney, Bell's Illustrated Classics).

COMPOSITION: Abbott's Arnold's Greek Prose Composition (Longmans).

TRANSLATION AT SIGHT: Peacock and Bell, Passages for Greek Translation (Macmillan, Elementary Classics).

GREEK HISTORY: 560 to 479 B. C. Book recommended, Cox's Greeks and Persians (Longmans Epoch Series), or Bury's History of Greece (Macmillan), chs. V to VII.

SECOND YEAR—

2. Lectures, four hours a week.

For 1912-1913:—AUTHORS: *Summer Reading.*—GREEK HISTORY: 479 to 403 B. C. Books recommended, Bury, History of Greece (Macmillan), chs. VIII to XI; Abbott, Pericles and the Golden Age of Athens (Putnam). *Lectures:*—Keene's Plato, Crito and Part of the Phædo (Macmillan); Aeschylus, Persæ (Prickard, Macmillan); Homer, Iliad XXIV (Leaf and Bayfield, Macmillan).

COMPOSITION: North and Hillard's Greek Prose Composition (Rivingtons).

TRANSLATION AT SIGHT: Greek Unseens in Prose and Verse, Intermediate Section (Blackie & Son).

Advanced students will take the work of the ordinary course, together with additional work to be prescribed.

THIRD AND FOURTH YEARS—

3. Lectures, four hours a week.

For 1912-1913:—AUTHORS: *Summer Reading.*—Greek History from 404-323 B. C. (Bury's History of Greece chs. 12 to 18 inclusive, of 8s. 6d. edition, Macmillan). *Lectures:*—Homer, Iliad X (Lawson, Pitt Press); Sophocles, Philoctetes (Jebb and Shuckburgh, Cambridge University Press); Plato, Protagoras (Adam, Pitt Press). The lectures will include two courses of twelve hours each; these courses will deal with some period of Greek history or literature or with some aspect of Greek life or thought.

COMPOSITION: Sidgwick's Greek Prose Composition (Longmans).

TRANSLATION AT SIGHT: Tod and Longworth's Passages for Unseen Translation, Latin and Greek (Longmans).

THIRD AND FOURTH YEARS—

3. Lectures, four hours a week.

For 1912-1913:—*Summer Reading.*—Stoicism by St. George Stock (Constable).

AUTHORS: *Lectures*—Tactitus, Annals I (Furneaux, Clarendon Press); Seneca, pages 1-51 (Select Letters, Summers, Macmillan); Juvenal, Satires I, III, V, VIII, X, XIII (Duff, Pitt Press).

Two courses of twelve lectures each on two of the following four subjects:—

(1) History of the Empire (Bury's Student's Roman Empire, Murray);

(2) Roman Literature of the Empire (Mackail's History of Roman Literature, Scribners).

(3) Social Life under the Empire (Friedlænder, Roman Life and Manners under the Early Empire, in 4 volumes. Routledge);

(4) Ancient Philosophy in its later phases (Stoicism by St. George Stock, Constable).

N. B.—In each case the book named in brackets is suggested as a useful auxiliary to the lectures. It will be left to the lecturer to decide at the beginning of a session what portions of these books, if any, will be studied in connection with the two courses.

COMPOSITION: Latin Prose Based on Cæsar (Bryans, Macmillan).

TRANSLATION AT SIGHT: Dalton's Latin Translation for Public School Scholarships (Macmillan).

LATIN

ORDINARY COURSES.

All students taking Latin are expected to provide themselves with a grammar, a Latin-English dictionary, and an

Atlas of Ancient Geography. The following are recommended:—Allen and Greenough's New Latin Grammar; *or* Sonnenschein's Latin Grammar (Parallel Grammar Series, Swan Sonnenschein); Lewis' School Dictionary, *or* White's Junior Student's Latin-English Dictionary; Kiepert's Atlas Antiquus, *or* Putzger's Historical Atlas.

FIRST YEAR—

1. Lectures, four hours a week.

For 1912-1913: — AUTHORS: — Cicero, Pro Cluentio (omitting sections 19-42, 77-87, 97-116), (Peterson, Clarendon Press); Virgil, Georgic iv (Page, Macmillan).

COMPOSITION: Latin Composition (Mitchell, Macmillan's Canadian School Series).

TRANSLATION AT SIGHT:—Rivington's Class Books of Latin Unseens, Book III.

ROMAN HISTORY: Outlines, to 133 B. C. Book recommended, Botsford, History of Rome (Macmillan), chs. I to VI.

GRAMMAR: Sonnenschein's Latin Grammar pp. 164-207, inclusive.

Advanced Section.—Quintillian X chs. 1, 2 (Peterson, Clarendon Press).

SECOND YEAR—

2. Lectures, four hours a week.

For 1912-1913:—AUTHORS: *Summer Reading*:—ROMAN HISTORY: Outlines, from 133 B. C. to 337 A. D. Book recommended, Botsford, History of Rome (Macmillan), chs. VII to XII. *Lectures.*—Horace Odes I (Page, Bell's Illustrated Classics); Virgil, Aeneid III (Page, Bell's Illustrated Classics); Roman Life Reader, pp. 167-233 (Winbolt and Merk, Constable).

COMPOSITION: Bradley's Arnold (Longmans).

TRANSLATION AT SIGHT: Dalton, Latin Translation for Public School Scholarships (Macmillan).

GRAMMAR: Sonnenschein's Latin Grammar, pp. 113-163 inclusive.

Library) :—The Plays of Sophocles, Marlowe's Plays, Everyman, Minor Elizabethan Dramatists, 2 vols. Books of reference will be named from time to time. Two hours a week.

3C. *English Composition.*—An advanced course on English Composition, including style, methods and principles of literary criticism, treated from the historical point of view, and an introduction to the comparative study of literature in ccordance with the most recent results of contemporary thought and research. In connection with this course students will be examined in a course of prescribed readings. Essays at stated periods are required of all. Winchester, Principles of Literary Criticism. One hour a week.

Books of reference and authorities—Saintsbury's History of Criticism; Lessing, Sainte-Beuve, Brunetiere, Arnold, Ruskin, Worsfold.

FRENCH.

FIRST YEAR— ORDINARY COURSES

1. Vreeland & Koren, French Syntax and Composition (Holt), Super, Histoirie de France (Holt); Maupassant, Huit Contes Choisis (Heath).

2. Lemaitre, Contes extraits de Myrrha (Heath); Assolant, Récits de la vieille France (Ginn); Malot, Sans famillé (Heath);Milhau, Choix de Poésies (Renouf), selections beginning on pp. 19, 42, 65, 69, 77; Dumas, Napoléon, including the passages for translation into French (Macmillan).

Advanced Section (in place of course 2): Coppée, Contes Choisis (Macmillan); Daudet, La Belle Nivernaise (Ginn); Pailleron, Le monde où lon s'ennuie (Ginn); Molière, Les Précieuses Ridicules; Milhau, Choix de Poésies (Renouf).

Four hours weekly, two for each course.

SECOND YEAR—

SUMMER READING for students entering on their Second Year:—Corneille, Cinna (Holt); Daudet, Le Petit Chose (Heath).

The examination on summer readings will be held in the first week of the session.

SESSIONAL LECTURES—

3. Vreeland and Koren, French Syntax and Composition (Holt); Corneille, Le Cid (Holt); Bazin, Les Oberlé (Holt); Elementary Historical French Grammar.

4. Hugo, Quatre-ingt-treize (Heath); Molière, Les Femmes Savantes (Heath); Racine, Andromaque; Mansion, Esquisse de la Littérature Francaise (McDougall & Co. London), pp. 62-155.

Four hours weekly, two for each course.

Advanced Section (in place of course 4), Molière, Les Femmes Savantes (Heath); Racine, Andromaque; Montesquieu, Les Lettres Persanes (Macmillan); Beaumarchais, Le Barbier de Séville (Macmillan); Modern French Lyrics (Heath); Mansion, Esquisse de la Littérature Française.

THIRD AND FOURTH YEARS—

The courses will consist mainly in the study of French literature and advanced prose composition.

SUMMER READINGS for students entering on the Third or Fourth Year:—Racine, Britannicus; Molière, L'Avare.

The examination on summer readings will be held in the first week of the session.

SESSIONAL LECTURES—

5. For 1912-1913—(*a*): French Literature from the XIth to the end of the XVIIth century. Darmsteter, Morceaux choisis du XVIième siècle; Corneille, Polyeucts; Racine, Les Plaideurs, Andromaque; Molière, Misanthrope; Boileau, Choix d'Epitres et de Satires; La Bruyère, Sèlections; Madame de la Fayette, La Princesse de Clève; Doumic, Histoire de la Littérature Française.

Prose Composition:—Spiers, Graduated Course of Translation into French Prose (Simpkin, Marshall and Co., London).

N. B.—In order to be admitted to the Third Year French a student must understand French well enough to take lectures delivered in French.

Four hours weekly.

6. For 1913-1914:—Literature in the XVIIth and XIXth Centuries. Lesage, Gil Blas (Heath and Co.); Marivaux, Le Jeu de l'Amour et du Hasard; Buffon, Discours sur le Style; Diderot, Paradoxe du Comédien (Bib. Nat.); Sedaine, Le Philosophe sans le savoir; J. J. Rousseau, Selections; Voltaire, Zaire.

Victor Hugo, Ruy Blas; Musset, Selections (Ginn and Co.); Balzac, Eugénie Grandet; A. Chénier, Chefs-d'œuvre lyriques (Gowan's Internat. Library); Flaubert, Trois Contes; Modern French Lyrics (Heath); Dumas, L'Etrangère; Doumic, Histoire de la Littérature Française.

Prose Composition:—Spiers, Graduated Course of Translation into French Prose (Simpkin, Marshall and Co., London).

B.—GERMAN

Ordinary Courses.

Beginners' Course—

1. Van der Smissen und Fraser, High School German Grammar (Copp, Clark Co.); Müller and Wenckebach, Glück Auf (Ginn); Nichols, Easy German Reader (Holt).

Four hours weekly.

Students intending to take German in their Second Year are required to take this class, or if exempted by the Faculty, to take a supplemental examination in September.

The following books will be studied in the Tutorial Class:

Schrakamp, Ernests und Heiteres (A. B. C.); Horning, German Composition Ex. 1.-15.

First Year—

2. Van der Smissen und Fraser, High School German Grammar (Copp, Clark Co.); Moscher, Wilkommen in Deutschland (Heath); Baker's German Stories (Holt); Freytag, Die Journalisten (Ginn); Collmann, Easy German Poetry (Ginn); Notes on the History of Germany; Horning, German Composition.

Four hours weekly.

Second Year—

Summer Readings for students entering on their Second Year, and obligatory for students coming from the Beginners' Class; Riehl, Die vierzehn Nothelfer (A. B. Co.); Moser, Der Bibliothekar (Heath).

The examination on summer readings will be held in the first week of the session.

3. SESSIONAL LECTURES.—Horning, German Composition; Schiller, Wilhelm Tell (Holt); Lessing, Minna von Barnhelm, ed. Primer (Heath & Co.); Gœthe, Egmont (Ginn); Keller, Bilder aus der Deutschen Literatur (American Book Co., edition 1905).

Four hours weekly.

For students in the advanced course an additional hour will be provided for the purpose of further study.

THIRD AND FOURTH YEARS—

SUMMER READINGS for students entering on their Third or Fourth Year:—Grillparzer, Der Traum ein Leben (Heath); Stifter, Das Heidedorf (Am. Book Co.)

The examination on summer readings will be held in the first week of the session.

4. For 1912-1913:—Lessing, Emilia Galotti; Kleist, Prinz Friedrich von Homburg (Ginn); J. P. Richter, Selections (A. B. Co.); Grillparzer, Sappho (Ginn); Sudermann, Der Katzensteg (Heath); History of German Literature, in the Classical Period (Kluge); Whitney and Stroebe, Advanced German Composition (Holt & Co.).

Four hours weekly.

5. For 1913-14:—Lessing, Nathan (Am. Book Co.); Gœthe, Iphigenie (Pitt Press); Schiller, Wallenstein's Tod; Keller, Legenden (Holt and Co.); History of Literature (Gœthe); The Romantic School (Kluge).
Prose Composition.

Four hours weekly.

PHILOSOPHY

The courses in this Department are designed to meet the wants of students in the Faculty of Arts, of students in the professional schools, and of partial students.

In all the ordinary courses such topics as the subject of scientific method, the relation of ethics to legal and social questions, the relations of psychology and philosophy to education, etc., are definitely kept in view.

Group I.

(Primarily for Second Year Undergraduates)

1A. Elementary Psychology:—

1B. Logic:—A course in the Elements of Logic, including the fallacies. Fortnightly exercises.

Text-Book: S. H. Mellone, Introductory Text-Book of Logic, (*fourth edition*) omitting section 5 chap. IV and chaps. IX and XI. Use will be made of Lafleur's Illustrations of Logic.

1C. Introduction to Philosophy:—A short course of twelve lectures upon the nature of philosophy and its relation to the sciences, and its place as a university study. These lectures will take the place for some weeks of the ordinary lectures in 1A or in 1B.

Group *II.*

(For Third Year Undergraduates)

2A. Moral Philosophy:—Outlines of ethics as the science; morality in the race and in the individual; the postulates and divisions of ethical science; theories of conscience and of the moral standard; the ethics of idealism and the ethics of evolution.

2B. Applied Ethics:—Ethics and the sociological movement of recent times; the Ethics of the social questions; the duties and the virtues and the unity of the moral life; moral pathology; moral training; the ethical problem of the present time.

DEPARTMENT OF MATHEMATICS

Ordinary Courses

First Year—

1. Plane and Solid Geometry.—The equivalent of Books IV, VI and XI of Euclid, with supplementary matter from Hall and Stevens' Euclid. Two hours a week (before Christmas).

Algebra.—Hall and Knight's Elementary Algebra (omitting chapters 40-42 inclusive), or the same subject matter in similar text books. Two hours a week, (after Christmas).

TRIGONOMETRY.—Hall and Knight's Elementary Trigonometry to page 210 and chaper 19; Nature and use of logarithms [Bottomley's four figure tables]. Two hours a week, throughout the session.

SECOND YEAR—

2. GEOMETRY.—(*a*) Solid Geometry, continuation of the First Year; (*b*) Geometrical Conic Sections, Wilson's Solid Geometry and Geometrical Conics. Three hours a week, before Christmas.

ALGEBRA.—Permutations and combinations; binomial theorem; exponential and logarithmic series; interest and annuities; undetermined coefficients; partial fractions; summation of typical series; probabilities; determinants; graphic methods. Three hours a week, after Christmas.

Text-Book:—Hall and Knight's Higher Algebra.

SPHERICAL TRIGONOMETRY.—A short course compulsory for students proceeding to the Faculty of Applied Science. Students taking the advanced course in mathematics are recommended to take this course.

THIRD OR FOURTH YEAR—

3. ANALYTICAL GEOMETRY (C. Smith). Two hours a week.

Infinitesimal Calculus (Lamb). Two hours a week.

PHYSICS.

ORDINARY COURSES.

FIRST YEAR—

1. PHYSICS.—This course has two objects: (1) to give the minimum acqaintance with physical science requisite for liberal education to those whose studies will be mainly literary; (2) to be introductory to the courses in chemistry and other branches of natural science, and to the more detailed courses in physics in the Third and Fourth Years. Only the most important principles in each branch of the subject will be treated, as far as possible, with reference to their historical development and mutual relations. Two lectures will be given per week which will be fully illustrated by experiments. During the session each student will be required to attend in the laboratory and make measurements involving the use of the

following instruments:—*balance, pendulum, barometer, thermometer, sonometer, telescope, microscope, tangent galvanometer, Wheatstone's Bridge.* Text-Book Reid and Guthe, Macmillan. Full course.

THIRD AND FOURTH YEARS—

3 and 4. EXPERIMENTAL PHYSICS.—(*Full Course*).—Alternating each year is a course on the laws of energy, heat, sound and light, and a course on electricity and magnetism. These lectures are taken by third and fourth year ordinary, and second year honour students in mathematics and physics. Two hours per week.

Text-Book as arranged.

Laboratory course, three hours per week.

Text-Book—Tory and Pitcher.

Double course students in the third year must take instead of the above lectures in heat, sound and light with the applied science students. See 311 and 312 under Applied Science.

CHEMISTRY

SECOND YEAR—

1. GENERAL CHEMISTRY.—A course of lectures on elementary chemical theory, and on the principal elements and their compounds. The lectures are fully illustrated by means of experiments.

Text-Books:—Alex. Smith's Chemistry for Colleges. Three hours a week.

ELEMENTARY PRACTICAL CHEMISTRY.—This course is compulsory for all undergraduates taking the above course of lectures. The work includes experiments illustrative of the laws of chemical combination, the preparation of pure chemical compounds, and elementary qualitative analysis. Three hours a week.

INFORMATION FOR STUDENTS IN APPLIED SCIENCE

The instruction in this Department covers the work of the First and Second Years of the Faculty of Applied Science of McGill University. Being largely in Mathematics and pure Science, it is intended as a foundation for the specialization carried on in the Third and Fourth Years in the various branches of Engineering. In two additional years at McGill, students may proceed to the Degree of B. Sc. in any of the following Departments:—

I.—*Architecture.*

II.—*Chemistry.*

III.—*Chemical Engineering.*

IV.—*Civil Engineering and Surveying.*

V.—*Electrical Engineering.*

VI.—*Mechanical Engineering.*

VII.—*Metallurgical Engineering.*

VIII.—*Metallurgy.*

IX.—*Mining Engineering.*

X.—*Railways.*

The regular work of each session in Applied Science will end about the first of May, at the close of the sessional examinations. The summer work will commence at the first of September.

EXAMINATIONS.

1. Sessional examinations are held in all subjects. In addition, there are Christmas examinations in certain subjects, and class examinations are held from time to time, at the option of the Professor.

2. Students who have failed in one or more subjects of the curriculum shall be required to make good their standing by passing:—

(1) The supplemental examination, *or*

In 1912, and thereafter, there will be only one regular supplemental examination for students entering the Second and Third Years. This will be held immediately before the opening of the summer school in September;

(2) The final examinations in a subsequent session,

or

(3) The examinations of the summer courses when such examinations are equivalent to the final examinations,†

or

(4) Special examinations, which shall be given only under exceptional circumstances and by authority of the Faculty.

3. No undergraduate will be allowed to take the lectures in any subject until he has passed the examinations in the necessary pre-requisite subjects, for particulars regarding which see page 67.

†These examinations are open only to students who have attended the summer courses and who have paid regular fees therefor.

SUMMER WORK.

1. All undergraduates entering the Second Year, students in the Civil Engineering, Mining Engineering and Railway Courses entering the Third Year, and students in the Civil Engineering Course entering the Fourth Year, are required to be in attendance at the Surveying School on the 2nd of September, when the field work in surveying and geodesy will commence. (See page 67).

2. Undergraduates in the Mechanical, Electrical, Chemical and Metallurgical Engineering Courses also are required to attend a summer session of four weeks between the second and Third Years. The work to be done in the first two of these courses is as follows:—Mechanical drawing (machine design and machine drawing), 10 hours per week; physics and physical laboratory work, 11 hours per week; shopwork (smith shop and foundry), 11 hours per week. Undergraduates in Metallurgical Engineering will take courses in qualitative and quantitative chemical analysis, and those in Chemistry and Metallurgy will take fire assaying. This summer work will commence in 1912 on Monday, the 2nd of September.

For Students Entering the Second Year.

2. All students entering the Second Year, except those in the Course in Architecture (see below), will be required to read the following English Classics:—

Everyman's Library.	George Eliot's "Adam Bede." Southey's "Life of Nelson." Lamb's "The Essays of Elia." Kingsley's "Hereward the Wake." Dickens' "David Copperfield."

All students will be required to pass an examination in the summer reading at the opening of the session. A maximum of 100 marks will be allowed for this reading.

For Students Entering the Third Year.

3. Students entering the Third Year, except those in the Course in Architecture, may

(a) Prepare an essay, *or*

(b) Follow a course of summer reading.

(a) The essay must in all respects follow the specifications laid down in the case of essays submitted by students entering the Fourth Year, except that it should be somewhat shorter, consisting of about 2,000 words. All rules and regulations governing the Fourth Year essays, as set forth above, also apply to the Third Year essays. (See McGill Calendar).

Students in Electrical Engineering, electing to write an essay, and who are not engaged during the summer on any engineering, scientific or industrial work which would afford a subject for an essay, may write on one of the following subjects:

(a) The Application of Electric Power to Industrial Establishment.

(b) Relation between Fundamental Electrical and Mechanical Units.

(b) The summer reading which may be substituted for the summer essay consists of:

Shadwell's Industrial Efficiency. (Longmans, Green & Co., 1909).

Students will be required to pass an examination in the summer reading at the opening of the session. The same number of marks are allotted for this reading as for the essay.

All essays must be handed in at the Dean's Office not later than 5 p. m. on Thursday, October 10th. A maximum of 100 marks, or nearly 10 per cent. of the total marks for the year, is given for these essays.

The essays should be from 2,000 to 5,000 words in length. They should be illustrated by drawings, sketches, and (when desirable) by photographs, specimens, etc.

The *most acceptable subject for an essay* is a critical description of the work on which the student is engaged during the summer, but a description of any engineering, scientific or industrial work with which he is familiar will be accepted.

Students in Electrical Engineering, who are not directly connected with any such work may write on the following subjects:

(a) Long Distance Transmission Lines.

(b) Variable speed drives for machine tools.

(c) The Substitution of Electricity for Steam on Railroads.

No essay compiled from books alone will be accepted unless the student has obtained in advance the permission of the Head of his Department to prepare such an essay.

The essays must be well expressed and written in precise, well-chosen, grammatical English. In preparing them advantage may be taken of any source of information, but due acknowledgment must always be made, and they must contain a statment of all authorities and books consulted. In judging of the value of the essays, account will be taken not only of the subject matter, but also of style and literary construction.

All essays when handed in will become the property of the Department concerned and will be filed for reference. Students may submit duplicate copies of their essays in competition for the students' prizes of the Canadian Society of Civil Engineers, or of the Canadian Mining Institute.

It is requested that, so far as possible, the essays be written on paper of substantial quality and of a size 8¼ x 10

inches, as in the case of those submitted to the Graduate School.

GENERAL OUTLINE OF COURSES.

The curriculum, as laid down in the following pages, may be changed from time to time as deemed advisable by the Faculty. The work prescribed for the first two years is the same in all courses.

The subjects of instruction in the engineering courses in these years, for all courses, and the number of hours per week devoted to each, are as follows:—

FIRST YEAR.

Subject.	Subject number	Lectures per week		Laboratory, etc., periods* per week.		For details see page.
		First Term.	Second Term.	First Term	Second Term	
Algebra	192	5	5	..	..	62
Descriptive Geometry	341	..	..	2	2	61
English	131	2	2	..	..	61
Freehand Drawing	342, 343	..	..	1	1	61
Geometry	191	3	..	..	..	62
Mech. Drawing	211	..	..	1	1	63
Mechanics	194	2	2	..	..	63
Physics	311	2	2	..	..	66
Physics, Lab.	312	..	..	1	1	66
Shopwork	212, 213, 214	..	..	2	2	64
Trigonometry	193	..	3	..	..	63

*A laboratory period is three hours.

All undergraduate students of the First Year, except those in the course of Architecture, who at the close of the first term have failed to obtain an average of 33 per cent. in the following five subjects, viz.:—mechanics, geometry, algebra, physics and descriptive geometry, will be required to withdraw from the Faculty.

In the case of students in the course of Architecture the same rule applies, the five subjects, however, being descriptive geometry, geometry, physics, trigonometry, and architectural drawing.

Any other students whose record is found to be unsatisfactory may at any time be required to withdraw from the Faculty.

SECOND YEAR.

Subject.	Subject Number.	Lectures per week.		Laboratory, etc. periods* per week		For details see page
		First Term	Second Term	First Term	Second	
Anal. Geometry	197	3	..	..	..	63
Calculus	198	3	3	..	..	63
General Chemistry	51	3	3	..	..	60
General Chemistry Lab.	52	..	..	1	1	60
Graphical Statics	82	..	..	..	1	62
Mapping	348	..	..	1	1	..
Materials of Construction	81	1	1	..	..	62
Mechanical Drawing	219	..	..	1	1	66
Mechanics	83	..	3	..	..	63
Mech. of Machines	218	3	3	..	..	65
Physics	315	2	2	..	..	66
Physics Lab.	316	..	..	1	1	66
Shopwork	220	..	..	1	1	64
Surveying	346	2	2	..	..	67
Surveying Field Work	347	..	..	..	..	67

*A laboratory period is three hours.

Note.—Surveying field work, 4 weeks, beginning September 2nd, 1912. See page 67.

For other summer school work see Third Year Tables.

COURSES OF LECTURES.

N. B.—The following courses are subject to such modifications during the year as the Faculty may deem advisable.

CHEMISTRY.

Second Year Lectures.

51. *General Chemistry.*—An introductory course in descriptive and theoretical chemistry. The fundamental laws and theories are studied in conjunction with a detailed description of the preparation, properties and industrial applications of the more important elements and their compounds. Three hours a week.

Text-Book:—Alex. Smith's General Chemistry for Colleges.

Second Year Laboratory.

52. *General Chemistry.*—In this course the student is taught the construction and use of ordinary apparatus and performs a series of experiments designed to cultivate the powers of observation and deduction. Many of these experiments

involve accurate weighing. Considerable attention is also devoted to the subject of qualitative analysis. One period a week for all students of Engineering.

Descriptive Geometry and Freehand Drawing.

This course deals with the methods of representing objects on one plane so that their true dimensions may be accurately scaled. It discusses the methods employed in the graphical solution of the various problems arising in engineering design, and deals generally with the principles underlying all constructive drawing. The methods taught are illustrated by applications to practical problems. It is the aim of the work to develop the imagination in respect to the power of mentally picturing unseen objects, and, incidentally, precision in the use of the drawing instruments is attained.

341. *First Year.*—Geometrical drawing; problems on straight line and plane; projections of plane and solid figures; curved surfaces and tangent planes; intersections of surfaces; axometric projections; shades and shadows.

Text-Books:—Geometrical Drawing by C. H. McLeod; McLeod's Elementary Descriptive Geometry.

342. In the *Freehand Drawing Course* the object is to train the hand and eye so that students may readily make sketches from parts of machinery, etc., either as note book sketches, diagrams, perspective drawings in light and shade, or as preparatory dimensioned sketches from which to make scale drawings.

343. In the *Lettering Course,* plain block alphabets, round writing, and titles, such as are chiefly in use in draughting offices will be dealt with. In this course, also, tinting, tracing, blue printing and simple map drawing will be included.

English Composition.

131. In view of the importance of accuracy of expression in the case of those engaged in scientific or professional work, a course on English composition is prescribed for all undergraduates of the first year. Students who give evidence of having already reached the required standard of proficiency by passing a special exemption examination may be excused from attendance on this course. This special examination on Tuesday, October 1st, at 11 o'clock.

Students who are required to take this course will be assigned to a section which will meet weekly for practice and instruction in composition.

Satisfactory results in class and essay work must be obtained before entry into the Second Year. All undergraduates of the First Year, whether exempt or not from attendance on the course, must pass the final examination.

132. *Summer Reading.* (See page 57).

Materials of Construction.

81. Manufacture and properties of cast iron, wrought iron, crucible, bessemer and open hearth steel; principal alloys; considerations governing selection of materials; manufacture and properties of Portland and natural cements; limes; concrete; stone and brick masonry; principal kinds of timber used for engineering purposes; preservation of timber; discussion of standard specifications.

Required of all Engineering students in the Second Year.

One hour per week.

Graphical Statics.

82. *Graphical Statics.*—Composition of forces; general methods involving the use of funicular and force polygons; determination of reactions, centres of gravity, bending moments and moments of resistance; stresses in cranes, braced towers, roof trusses and bridge trusses.

Required of all Engineering students.

Three hours per week, second term of Second Year.

Department of Mathematics.

191. *Geometry.*—Exercises in plane geometry, elements of solid geometry and of geometrical conic sections. First Year (first term). Text-Book:—Hall and Stevens' School Geometry, Parts I-VI, (Macmillan).

192. *Algebra.*—Miscellaneous theorems and exercises, exponential and other series, properties and solutions of higher equations, complex numbers and vector algebra, graphical algebra with an introduction to analytic geometry, indeterminate forms, limits, derivatives, slopes of curves. First Year (first and second terms). (Text-Books:—Rietz and Crath-

orne's College Algebra (Holt & Co.), Tanner and Allen's Analytic Geometry (American Book Co.)

193. *Trigonometry.*—Plane and spherical. First Year (second term). Text-Book:—Murray's Plane and Spherical Trigonometry, with tables (Longmans).

194. *Mechanics.*—An elementary course in dynamics, statics, and hydrostatics. First Year (first and second terms). Text-Book:—Loney's Mechanics and Hydrostatics for Beginners (Cambridge University Press).

83. *Mechanics.*—The course includes the general principles of statics, and of the dynamics of a particle. Motion of a particle under varying force is considered and a knowledge of both differential and intregal calculus is essential. Simple harmonic motion is considered (taking the oscillation of springs and pendulums in illustration), and numerous applications of the princples dealt with are worked out.

Three lectures per week, second term of Second Year.

Text-Book:—Morley, Mechanics for Engineers.

197. *Analytic Geometry.*—The point, straight line, circle parabola, ellipse and hyperbola, elements of geometry of three dimensions. First Year (latter part of second term), and Second Year (first term). The Second Year work begins with the circle. Text-Book:—Tanner and Allen's Analytic Geometry (American Book Co.)

198. *Calculus.*—Differentiation of functions of one or more variables, successive differentiation, tangents, etc., curvature, maxima and minima, integration, with applications to areas, volumes, moments of inertia, etc. Second Year (first and second terms). Text-Book:—Murray's Differential and Integral Calculus (Longmans).

Department of Mechanical Engineering.

First Year.

211. *Mechanical Drawing and Designing.*—Elementary principles of mechanical drawing and draftsmanship; preparation of working drawings and tracings of simple machine details.

In connection with this work a brief course of lectures is given upon drafting room methods and standards, and the

elementary considerations in the design and construction of, and selection of materials for simple machine parts.

Required of all Engineering students. Three hours per week.

Shopwork.—The course in shopwork is intended to afford some preparation for that study of workshop practice on a commercial scale which every engineer has to carry out for himself. With this end in view, the student works in the various shops of the department, and completes in each a series of practical exercises. He thus obtains some knowledge of the nature and properties of the various materials he employs; he receives systematic instruction in the use and care of the more important hand and machine tools; and he acquires some manual skill.

The instruction thus obtained must, however, be continued and supplemented. *For this purpose students are expected to spend the greater portion of each long vacation in gaining practical experience in engineering workshops outside the University.*

Students are required to read and make notes of selected portions of certain text-books and articles in technical journals, illustrative of the work done in each shop.

The practical work is supplemented by a brief course of lectures dealing with shop processes and tools. The subject dealt with in this way gives the student a clearer idea of the care and use of the various instruments and tools, and of the performance of the machines.

In connection with his shopwork, each student is required to keep a record of his work. These records or notes are made on standard forms. These are handed in to the Shop Instructor at the close of each period of work, and, together with diligence and the results of a brief written examination, form the basis on which credit for shopwork is assigned.

Required of all Engineering students. Six hours per week.

212. *Carpentry and Wood-turning.*—Sharpening and care of wood-working tools; sawing, planing and paring to size; preparation of flat surfaces, parallel strips, and rectangular blocks; construction of the principal joints employed in carpentry and joiner work, such as end and middle lap joints,

end and middle mortise and tenon joints, mitres, dado and sash joints; dovetailing; scarfing; joints used in roof and girder work; wood-turning; use of wood-turning tools.

213. *Smith-work.*—The forge and its tools; use and care of smith's tools; management of fire; use of anvil and swage-block; drawing taper, square and parallel work; bending, upsetting, twisting, punching, and cutting; welding and scarfing.

214. *Foundry-work.*—Moulders' tools and materials used in foundry work; the cupola; the brass furnace; preparation of moulding sand; boxes and flasks; core-making; use of core-irons; bench moulding; blackening, coring and finishing moulds; vents, gates and risers; floor moulding; open sand work; melting and pouring metal; mixtures for iron and brass casting.

Second Year.

218. *Mechanics of Machines.*—Kinematics of machines. Constrained motion; kinematic pairing; velocity and acceleration in mechanisms; centrodes; analysis and classification of simple mechanisms, including the quadric crank chain, the slider crank chain and various wheel trains; designs of involute and of cycloidal wheel-teeth.

Dynamics of Machines.—Work and power; the power and turning effort of prime movers; inertia and kinetic energy of revolving and reciprocating parts of machines. Required of all Engineering students. Three hours per week.

Text-Book:—Durley's Kinematics of Machines (Wiley).

Reference Book:—Kennedy, Mechanics of Machinery (Macmillan).

219. *Mechanical Drawing.*

Drafting and tracing of more difficult exercises; and the making of assembly and detail drawings of machine parts. Lectures are given from time to time during the course dealing with drafting room methods, explanation of designs, and discussion of the reasons for selection of materials.

Required of all Engineering students three hours per week.

220. *Machine-shop Work.*—Exercises in chipping; preparation of flat surfaces; filing to straight edge and surface

plate, scraping, screwing and tapping; use of scribing block and surface gauge; marking off work for lathes and other machines; turning and boring cylindrical work to gauge; surfacing; screw-cutting and preparation of screw-cutting tools; machining flat and curved surfaces on the planing and shaping machines; drilling and boring; cutting angles and speeds; dressing and grinding tools.

Required of all Engineering students. Three hours per week.

230. *Mechanical Drawing.*—Exercises in making sketches of machine parts and in preparing working drawings and tracings from them.

Required of Electrical and Mechanical Engineering students entering the Third Year, nine hours per week during the month of September at Montreal.

Department of Physics.

The instruction includes a fully illustrated course of experimental lectures on the general principles of physics (embracing, in the first year, *The Laws of Energy—Heat, Light, and Sound;* in the second year, *Electricity and Magnetism*), accompanied by courses of practical work in the laboratory, in which the students will perform for themselves experiments, chiefly quantitative, illustrating the subjects treated in the lectures. Opportunity will be given to acquire experience with all the principal instruments used in exact physical and practical measurements.

311. *First Year.*—Lecture course. Subject, Heat, Sound and Light. Two hours per week.

Text-Book:—Deschanel's Heat, Sound and Light, special edition, Renouf Publishing Co.

312. Laboratory Course.—Three hours per week, spent in practical measurements in the Laboratory in conjunction with the lecture courses.

Text-Book;—Tory and Pitcher's Laboratory Manual.

315. *Second Year.*—Electricity and Magnetism. Lecture course, two hours per week.

316. Laboratory course, three hours per week. *Magnetism and Electricity.*—Measurements of pole strength and

moment of a magnet; the magnetic field; methods of deflection, and oscillation; comparison of moments and determination of the elements of the earth's magnetism.

Current Electricity.—A complete course of measurements of current strength, resistance, and electromotive force; calibration of galvanometers.

Text-Books:—Hadley's Electricity and Magnetism; Jackson's Elementary Electricity and Magnetism, (Macmillan); Tory and Pitcher, Laboratory Manual.

317. An additional course, involving four laboratory periods per week with lectures, will be given in the month of September for students in Electrical and Mechanical Engineering. (Entering the Third Year). To be taken at Montreal.

DEPARTMENT OF SURVEYING AND GEODESY.

This course is designed to give the student a theoretical and practical training in the methods of plane and geodetic surveying, in the field work of engineering operations, and in practical astronomy. The lecture course is divided as follows:

346. *Second Year.*—Chain and angular surveying; the construction, adjustment, use and limitations of the transit, level, micrometer, compass and minor field and office instruments; topography; levelling; contour surveying; stadia surveying; railway circular curves; planimeter and pantograph; land systems of the Dominion and Provinces.

Field Work.—The students are required to carry out the following work:—

347. *Second Year.*—(1) A farm survey, using chain and compass; (2) a compass and micrometer survey; (3) a detail survey, using chain and offset; (4) levelling; (5) transit work.

348. Drafting from field notes of chain and angular surveys.

REGULATIONS CONCERNING PREREQUISITE SUBJECTS

(1) No student proceeding to a degree will be allowed to take any subject, unless he has previously passed, or secured exemption, in all prerequisite subjects.* (See page 69).

(2) All students proceeding to a degree as above shall be classed as undergraduates and conditioned undergraduates, the latter being students with defective entrance qualifications or who have failed in one or more of the subjects of their course in the year previous to that in which they are entered.

(3) Except in special cases as provided below, no undergraduate or conditioned graduate shall be permitted to take any Second Year subject until he has passed or secured exemption in all matriculation requirements, and, similarly, no Third or Fourth Year work may be undertaken until all First or Second Year subjects respectively shall have been passed or exempted.

The Faculty may waive this rule in special cases on recommendation of the Committee on Registration, Promotion, etc.

(4) Partial students not proceeding to a degree may be admitted to classes without regard to the prerequisite rule, provided that they have obtained the permission of the head of each department concerned, and have also had their courses approved by the Committee on Registration, Standing and Promotion.

(5) In the event of a partial student desiring to obtain undergraduate standing in order to proceed to a degree, he shall not be given credit for work already done without the usual prerequisites until he has also passed examinations or secured exemptions in such prerequisites as may be demanded by the Committee and has had his case approved by a unanimous vote of the Faculty.

(6) All undergraduates who at the close of any session have passed the examinations in all the subjects of their Year, or who at the opening of the following session have removed all conditions by passing supplemental examinations in the subjects in which they have failed, may pass into the next higher year as undergraduates.

(7) All students who have conditions that have not been removed at the opening of any session are conditioned undergraduates, and come under the regulations governing prerequisite subjects. The rules concerning prerequisite subjects make it possible for a student whose failures are not too numerous or too serious, to complete his course in five years

instead of four, which suffice for a student who remains in good standing throughout his course.

*It is to be noted that prerequisite subjects are those which, in the opinion of the Faculty, must have been mastered before the subjects to which they are prerequisite can be intelligently studied.

Concurrent subjects are those which so supplement one another that no one of them can be intelligently studied alone. If any subject has another which is concurrent to it, both must be taken in the same session.

No student with a condition will be admitted to the second term of the Fourth Year as an undergraduate, nor can such student graduate with his class.

List of subjects in Faculty of Applied Science with the Numbers of Subjects which are prerequisite and concurrent:

No.	Year	Subject	Prerequisite	Concurrent
51	II.	General Chemistry	311, 312	52
52	II.	General Chemistry Lab. (Eng. Students)	311, 312	51
81	II.	Materials of Construction		
82	II.	Graphical Statics	194	
83	II.	Mechanics	194	198
131	I.	English Composition		
132	II.	English Summer Reading		
191	I.	Geometry	Matric. Geom. I	
192	I.	Algebra	Matric. Algebra I	
193	I.	Trigonometry	Matric. Trig.	
194	I.	Mechanics	Mat. Alg. I. and Trig.	
197	II.	Analytic Geometry	192	
198	II.	Calculus	192	
211	I.	Mechanical Drawing		
212	I.	Carpentry and Wood Turning		
213	I.	Smith Work		
214	I.	Foundry Work		
218	II.	Mechanics of Machines	192, 193, 194	198
219	II.	Mechanical Drawing	191, 211, 341	
220	II.	Machine Shop Work		
311	I.	Physics	Matric. {Trig. Geom. I. and II. / Algebra I.	
312	I.	Physical Lab		311
315	II.	Physics		
316	II.	Physical Lab.		315
317	III.	Physics, Summer School		
341	I.	Desc. Geometry	Matric. Geom. I.	
342	I.	Freehand Drawing		
343	I.	Lettering		
346	II.	Surveying	191, 193	
347	II.	Surveying Fieldwork		
348	II.	Mapping	342, 343	

For prerequisite Third Year subjects see announcement of the McGill University Faculty of Applied Science.

For the benefit of students desirous of continuing their studies in Music, the following extract is made from the Calendar of McGill University, Montreal:

DEPARTMENT OF MUSIC.

Local Examinations.

Public Local Examinations are now held yearly at various centres throughout the Dominion by examiners sent out by the University.

These examinations may be looked upon as preparatory to the Examinations for Diplomas and Degrees in Music granted by the University. There are in most of the subjects five grades, and certificates gained in the higher grades will exempt the candidate from certain portions of the Examinations for a Diploma or Degree.

Diploma of Licentiate in Music.

Candidates for this diploma may elect to be examined either in:—

Theoretical subjects and composition.....(Class I)
Practical subjects as performers.....(Class II)
Both theory and practice as teachers.....(Class III)

The candidate must pass three examinations.

First Examination:—

(a) Rudiments of Music, including sight reading and ear tests.

(b) Harmony in four parts up to, and including, dominant 9th (a practical test will be substituted for performers).

(c) Counterpoint in two parts (practical test substituted for performers).

(d) Chief subject of study.

The possession of a Grade I. certificate of the Local Theoretical Examinations will exempt candidates in Class I from this examination. In Class II, exemption may be claimed if the candidate has passed Grade I (Practical) and Grade II, or Grade III (Theoretical) of the Local Examinations.

In Class III, candidates must hold Grade I (Theoretical) and Grade II (Practical) certificates in order to claim exemption.

In the second and third examinations, between which a year must elapse, the requirements for Classes I and III are, on general lines, similar to those for the First and Second Mus. Bac. Examinations, respectively. In the case of Class II, practical tests are substituted for many of the theoretical tests. Candidates in Class III will, in the Final Examniation, have to pass in "The Art of Teaching Music," which will be partly *viva voce* and partly paper work.

In both the Licentiate and Mus. Bac. Examinations, considerable latitude is allowed in the choice of a second practical study. Total exemption from examination in it will be allowed if the candidate possesses recent certificates gained in the higher grades of the Local Examinations in that subject.

Those holding the diploma of L. Mus. can at any time during the five years immediately following their passing that examination enter for the Mus. Bac. final examination, but they must pass the Matriculation examination.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF MUSIC.

Candidates for the Degree must have passed the following examinations:—

1. The Matriculation Examination.

2. The First Examination in Music, at the end of the First Year.

3. The Second Examination in Music, at the end of the Second Year.

4. The Final Examination.

The particulars of the work for each of the above examinations are as follows:—

First Examination in Music.

(a) Advanced Rudiments.

(b) Harmony in 3 and 4 parts.

(c) Counterpoint up to 3 parts.

(d) Form and analysis. Questions will be given on accent, cadence, metre, rythm, phrasing, etc., and on form, shown in the work of the early classicists (Scarlatti, Bach, Mozart and Haydn).

(e) General outlines of Musical History.

(f) Chief and Second Practical Study (or instead of one of these the composition of a song (or songs) or a miniature suite for Piano (or violin and Piano or any other combination).

Second Examination in Music:

(a) Harmony in not more than 4 parts.

(b) Counterpoint in not more than 4 parts.

(c) Canon in 2 parts and Fugal Exposition up to 4 parts.

(d) History of Music from the 16th Century to the present day, with some critical knowledge of a few compositions, either studied during the year or prescribed beforehand.

(e) Form and analysis.

(f) Elementary knowledge of Acoustics, or Physiology of Voice.

(g) Chief and Second Practical Study or, instead of one of these, the composition of:—(1) A movement in Sonata form for Pianoforte (or Piano and Violin, or any other combination), or (2) Chorus with independent accompaniment, or (3) Suite for Strings.

Final Examination in Music:

(a) Harmony up to 5 parts.

(b) Counterpoint up to 5 parts.

(c) Double counterpart in 8ve, 10th and 12th.

(d) Canon and Fugue in 4 parts.

(e) History of Music from the earliest to the present time.

(f) Form and Analysis. A knowledge will be required of such works as the following:—Bach's 48 Preludes and Fugues, Beethoven's Sonatas, Schubert, Schumann and Brahm's Songs, Mendelssohn's Psalms and such Oratorios as Elijah and St. Paul. (The candidate should send in a list of

works, in which he or she is prepared to be examined, a few weeks before the day of examination).

(g) Instrumentation.—A knowledge of the compass and capabilities of all instruments in the modern orchestra, and the scoring of a given passage in a given time, also the reading at sight of a short excerpt from an easy score of an early work of Mozart or Beethoven.

(h) Chief and Second practical study (or in lieu of both of these a composition can be sent in by the candidate containing 4 part chorus, a solo or duet, an unaccompanied quartette and a 4 part Fugue), the whole scored for stringed instruments with independent accompaniment.

REGISTER OF STUDENTS

FIRST YEAR ARTS.

Allen, Maude A., Vancouver.
Anderson, Jessie J., Vancouver
Bell, Christina, Vancouver.
Beveridge, William W., Vancouver.
Beverly, Ira W., Rossland.
Bollert, Lillian G., Vancouver.
Boyes, Francis C., Vancouver.
Brockwell, Muriel A., Vancouver.
Bruce, Graham, Vancouver.
Buchanan, Harry, Vancouver.
Cameron, Ella G., Vancouver.
Carruthers, Bertha M., Vancouver.
Chandler, Florence, Vancouver.
Clark, Robert J., Vancouver.
Cook, Fred. C., Rosedale.
Craig, Gordon, Vancouver.
Denton, Florence E., Vancouver.
DesBrisay, Harold A., Vancouver.
Duncan, Charles A., Sandwick, B. C.
Dunton, Marjorie M., Vancouver.
Eckhardt, Harold A., Vancouver.
Elliott, Carrie Isabel, Vancouver.
Ewin, Ethel M., Vancouver.
Fleming, Frank, Vancouver.
Galloway, James R., Vancouver.
Gibson, Harold A. F., Vancouver.
Gibson, Henry J., Vancouver.
Gibson, Thomas I., Vancouver.
Gilchrist, Neil C., Vancouver.
Gill, John O., Vancouver.
Glass, John, Central Park.
Handy, Levi, Vancover..
Harvey, Ruth A., Vancouver.
Hearns, Edna M., Vancouver.
Helme, Harold, Vancouver.
Keast, Eula M., Vancouver.
Kemp, William N., Vancouver.
Kirkpatrick, R. H., Vancouver.
Lawrence, James L., Revelstoke.
Lockyer, Arthur L., Vancouver.
Luckraft, Laurence C., Halifax, Eng.
Macdonald, Lennie H., Vancouver.
MacLeod, Jean M., Vancouver.
McCreery, Paul L., Vancouver.
McIver, Angs M., Stornoway, Ireland.
McKay, Sadie E., Vancouver.
McNeill, Chester W., Vancouver.
Melville, Dorothy J. C., Vancouver.
Middlemiss, Edith A., Vancouver.
Mills, Lennox A., Vancouver.
Mounce, Irene, Cumberland, B. C.
Nelson, Dorothy M., Vancouver.
Newton, Edward H., Vancouver.
Pearcy, Charles W., Vancouver.
Pim, Laura M., Vancouver.
Plummer, Stephen B., Vancouver.
Putnam, Laurie C., Vancouver.
Richmond, William G., New Westm'r.
Ritchie, Rae G., Kelowna, B. C.
Roy, Henrietta, Vancouver.
Schwesinger, Wanda T., Vancouver.
Scott, Gordon W., Vancouver.
Shearman, Arthur E., Vancouver.
Shearman, T. S. B., Vancouver.
Smith, Catherine, Vancouver.
Stewart, Carl M., Vancouver.
Story, Gladys V., Vancouver.
Sutton, William A., Vancouver.
Taylor, Wm. S., Invergordon, Scotl'd.
White, Laura M., Vancouver.
Wilson, Janet I., Vancouver.
Wilson, Mary L., Vancouver.
Wilson, Mary R., Vancouver.
Wilson, Robert M., Ruskin, B. C.
Wilson, William C., Vancouver.

PARTIAL STUDENTS.

Allan, James S., Vancouver.
Bollert, Helen A., Vancouver.
Cowperthwaite, Dorothy, Vancouver.
Crute, Ebenezer, Sunderland, Eng.
Frampton, Keith B., Victoria.
Gilbert, Mary E., Vancouver.
Goldbloom, Eva R., Vancouver.
Gordon, David J., Culloville, Ireland.
Jackson, Frederick I., North Vancou'r
Kirkpatrick, A. A. G., Kilrea, Scotl'd.
Leslie, James A., Droughty Ferry, Sc.
MacLean, Archibald, Easdale,, Oban, Scotland.
McGookin, John, Ballymeya, Ireland.
Menzies, Alex. M., Pender Island.
Owen, Harold H., Vancouver.
Paton, Thomas S., Ayr, Scotland.
Wardle, Bertram V., Leicister, Engl'd.
Young, Charles, Spring Bank, Alta.

SECOND YEAR ARTS.

Balkwill, Agnes B., Vancouver.
Bodie, Isabel A., Vancouver.
Buchanan, John H., Vancouver.
Buck, Frank H., Vancouver.
Cousins, Olive E. J., Vancouver.
Drost, Herbert M., Vancouver.
Greggs, Ruby L., Vancouver.
Howell, Benj. H., North Vancouver.
Lingle, Nettie C., Rossland.
Macnaghten, Ronald, N. Vancouver.
McNiven, Margaret, N. Westminster.
McLean, John J. M., N. Vancouver.
McArthur, Hazel A., Vancouver.
McTavish, Charles, Vancouver.
Moodie, Stanley F., Golden, B. C.
Morgan, Clovis B., Vancouver.
Northrop, Harold, Vancouver.
Rogers, Gladys E., Vancouver.
Smith, Wilfred M., Dewdney, B. C.
Wright, Stephen V., Vancouver.

PARTIALS.

Cartwright, Edwin W., Vancouver.
Comley, Frederick, Rock Bay.
Currie, Della Louise, South Vancouver.
Grant, Angus M., Vancouver.
Ross, Douglas W., Vancouver.

THIRD YEAR ARTS

Beattie, Hester E., Victoria.
Bolton, Grace A., Vancouver.
Busby, Eldon D., Vancouver.
Cairnes, Clive E., Ladner.
Dougan, Wilson, Vancouver.
Letvinoff, Annie, Vancouver.
Sargent, Rey A., North Vancouver.
Schwesinger, Gladys C., Vancouver.
Scott, Cecil O., Vancouver.

PARTIALS.

Schwengers, Ada A., Vancouver.
Wilkinson, Thomas, Vancouver.

FIRST YEAR APPLIED SCIENCE

Baker, Fred. L., Vancouver.
Carnsew, Charles N. T., Vancouver.
†Creery, Kenneth A., Vancouver.
*Ferguson, George H., Nelson, B. C.
*Fitz-Henry, Edward G., Cobble Hill. Vancouver Island.
†Fournier, John R., Vancouver.
Frame, William L., Vancouver.
Gordon, Alva M., Vancouver.
Hoffard, Harold O., Vancouver.
†Holland, Frederick W., Vancouver.
Honeyman, P. D. I., Vancouver.
Johnson, Byron P., Miles Landing.
†Livingstone, Warren, Vancouver.
McDonald, John A., Vancouver.
McLennan, Stanley A., Vancouver.
McNeill, Donald L., Vancouver.
Ney, John S., Vancouver.
Otton, Cecil, Eburne, B. C.
Perry, Brian R., Vancouver.
*Priest, Roy M., Vancouver.
†Richardson, Francis N., Penticton.
Shuen, George Y. K., Vancouver.
Stewart, Carroll A., Vancouver.
†Stuart, William J., Vancouver.
Swenson, Paul S., Westham Island.
Underhill, Charles B., Vancouver.
Walker, John F., Montreal.
†Wilson, Arthur L., Vancouver.

*Partial. †Conditioned.

SECOND YEAR APPLIED SCIENCE.

Bell-Irving, Robert, Vancouver.
Flitton, Ralph C., Victoria.
Fullerton, James T., Victoria.
Henderson, Roy G., N. Westminster.
Hughes, Hamilton C., Vancouver.
Ingram, George A., Vancouver.
McNaughton, Ira J., Vancouver.
†Mellish, John F., Vancouver.
§Muddell, Edward C., Vancouver.
*Muir, Wm. J. C., Vancouver.
*Taylor, Edward R., Victoria.

†Conditioned. *Partial. §Deceased.

McGILL UNIVERSITY EXAMINATION RESULTS.

ARTS.

Third Year.

Passed Third Year Examinations—Beattie, Bolton, Busby, Cairnes, Dougan, Letvinoff, Schwengers, Schwesinger.

Third Year.

English Drama: Class I.—Letvinoff, Cairnes, Schwengers. Class II.—Bolton, Schwesinger, Busby, Beattie. Passed—Dougan, Scott.

English Composition: Class I.—Schwengers and Letvinoff (equal), Cairnes. Class II.—Schwesinger, Beattie, Bolton. Passed—Scott, Busby, Dougan.

English Prose Literature: Class I.—Letvinoff, Cairnes; Class II.—Schwengers and Bolton (equal), Schwesinger, Beattie. Passed—Busby, Scott, Dougan, Wilkinson.

Third Year French: Class I.—None. Class II.—None. Passed—Letvinoff, Schwengers, Schwesinger.

Third Year Latin: Class I.—None. Class II.—Letvinoff, Cairnes. Passed—Beattie and Bolton (equal), Busby, Dougan.

Third Year Arts—Physics: Class I.—Dougan, Cairnes, Bolton. Class II.—Schwengers. Passed—Busby, Beattie, Schwesinger and McLean, A. (equal).

Physics, Laboratory: Class I.—Cairnes, Bolton, Dougan. Class II.—Schwengers, Schwesinger, Beattie, Busby, McLean, A.

Second Year.

Class I.—None.

Class II.—Moodie, McNiven, Buck, Balkwill. Passed—Cousins, Northrop, Rogers, Greggs, Drost, Hosang (s), Wright (s), McArthur (s), Lingle and Smith (s) (equal), Howell (s).

English Literature: Class I.—Balkwill and Moodie (equal), Currie and McNiven (equal). Class II.—Leslie, Buck, Cousins and Rogers (equal), Bodie, Greggs and Bu-

chanan (equal). Passed—Wright, Drost, Ross and Comley (equal), Northrop, McLean, Grant and McTavish (equal), Macnaghten, McArthur, Hosang, Lingle, Morgan.

Composition: Class I.—None. Class II.—Buck, Currie, Northrop and Moodie (equal), Balkwill, Rogers. Passed—Cousins, McNiven and Buchanan and Leslie (equal), Greggs, McTavish, Wright, Bodie, Drost and Hosang (equal), Howell and Ross (equal), McLean, Grant, Morgan, Macnaghten and Lingle (equal).

Algebra: Class I.—None. Class II.—McArthur. Passed—Austin and Howell (equal), Hosang.

Geometry: Class I.—None. Class II.—Howell. Passed —McArthur, Hosang.

Spherical Trigonometry: Passed—Howell.

Chemistry: Class I.—None. Class II.—Ross. Passed—Drost, Greggs and Macnaghten (equal), Balkwill, Lingle.

Chemistry, Laboratory: Class I.—None. Class II.—McArthur, Greggs, Drost and Lingle (equal), Hosang, Balkwill. Passed—Wright, Macnaghten, Ross.

French: Class I.—None. Class II.—McNiven, Moodie, Macnaghten. Passed—Morgan, Rogers, Northrop, Ross, Cousins, Bodie, Schwengers, Lingle.

Latin: Class I.—Moodie. Class II.—McNiven, Buck, Balkwill, Hosang and Macnaghten and Northrop (equal). Passed—Cousins, Ross, Buchanan, Rogers, Drost and Greggs and Lingle (equal), Currie and McLean and Morgan (equal), Smith and McArthur (equal), McTavish and Wright (equal), Bodie.

German: Class I.—None. Class II.—None. Passed—Cousins, Bodie, Morgan, Howell.

Greek: Class I.—None. Class II.—Buck. Passed—Balkwill, McTavish, J. J. M. McLean, Buchanan, Drost and Greggs (equal).

Psychology: Class I.—Moodie. Class II.—Rogers, Buck and Currie (equal), McNiven. Passed—Northrop, Wright, McTavish, Smith, Grant, McLean.

Logic: Class I.—Moodie. Class II.—None. Passed—Northrop, McNiven, Buck, McLean, A., Rogers, Currie.

First Year Arts.

Class I.—Mills, Duncan.

Class II.—Shearman, T. S. B.; Wilson, R. M.; Story, White, Luckraft, Bruce, Mounce, Beveridge. Passed—Galloway and Newton (equal), Shearman, A. E., Kemp and Macdonald (equal), Allen, Stewart, Cameron (s), Ewin, McNeill, Wilson, M. R. (s), Gilchrist, McCreery (s), Pim (s), Eckardt, Smith (s), Clark (s), Dunton (s), Brockwell (s), Roy (s), Wilson, M. (s), Anderson (s), Buchanan, Denton (s), Gibson, H. J. (s), Lockyer (s), Boyes (s), Handy (s), McKay (s), Sutton (s), Craig (s), and Elliott (s) (equal), Bell (s), Ritchie (s), Bollert (s), Wilson, J. I. (s).

Algebra: Class I.—Duncan, Handy and McNeill, Bruce, Wilson, R. M., Beveridge, Clark and Shearman, T. S. Luckraft and Story (equal), Allen, Ferguson and Galloway equal), Mills. Class II.—Gilchrist and White (equal), Beverly, Buchanan and Newton and Priest (equal), Sherman, A., Bollert and Ewin (equal), Cameron and Wilson, M. R. (equal), Mounce, McDonald, Kemp and Kirkpatrick, R. H., and McCreery (equal), Stewart. Passed—Eckhardt, Dunton, Bell and Denton, (equal), Gibson, T. I., Stuart, Middlemiss and Pim and Cook (equal), Macleod, Craig and Fox and Plummer (equal), Helme and Pearcy (equal), Sutton, Anderson and Smith (equal), Taylor, Young and Lockyer (equal), McKay, Gill and Ritchie (equal), Roy, Harvey.

Trigonometry: Class I.—Bruce, Wilson, R. M.. Class II.—Duncan, Luckraft, White, Sherman, T. S. B., Handy and McNeill (equal); Story, Mills, Cameron, Eckhardt. Passed—Stewart, Shearman, A. E., Kemp, Galloway, Beveridge, Plummer and Wilson, M. R., (equal); Taylor, Allen and McCreery and Mounce (equal); Ewin and Newton (equal), McKay and Pim (equal); Lockyer, Gilchrist, Wilson, W. C., Maclean, Buchanan, Bollert.

Geometry: Class I.—Shearman, T. S., McCreery, Bruce and Luckraft and White (equal); Duncan and Kemp (equal); Mounce, Taylor and Wilson, R. M. (equal); Mills, Galloway.

Class II.—Kirkpatrick, R. H., Stewart, Story, Allen and Eckhardt and Shearman, A. E. (equal); Cameron. Passed—Gilchrist, Denton and Ewin (equal); Pearcy and Pim (equal); Lawrence, Beveridge, McNeill, Bollert, Buchanan, Brockwell and Helme (equal); Cook and Desbrisay (equal); Lockyer and Sutton and Young (equal); Newton and Plummer (equal); Anderson and McIver (equal); Wilson, W. C. Harvey, Handy, Macdonald, and McKay and Ritchie (equal).

English Literature: Class I.—Duncan, Mounce. Mills, Galloway and McIver and Wilson, M. R., and Story (equal). Class II.—Cowperthwaite and Shearman, T. S., and McGookin and Brockwell (equal); Smith and Middlemiss (equal); White, Wilson, R. M., Shearman, A. E., Pim, Kemp and Luckraft (equal), Beveridge and Gilbert and Roy and McKay (equal); Macdonald, Wilson, J. I., and Eckhardt and Macleod (equal). Passed—Gilchrist and Sutton (equal) Wilson, M. L., and Ewin (equal); Scott and Allen and Richmond and Young and Bruce and Lockyer (equal); Menzies and Newton (equal); Chandler and Boyes and McNeill (equal); Bollert and Buchanan (equal); Elliott and Cook (equal); Wardle and Plummer (equal), Stewart and Bell and Gibson, H. J., and Paton (equal); Nelsón, Beverly and Schwesinger and Gill (equal), Comley and Anderson and Craig (equal), Dunton, McCreery and Cartwright and Keast (equal); Gibson, H. A.

English Composition: Class I.—Story, M. R. Wilson, Duncan, White. Class II.—Luckraft, Macdonald, Mounce, Mills, Bruce, Beveridge and Scott (equal); Dunton, Allen and Newton and Roy and T. S. Shearman and Wardle (equal); Middlemiss. Passed—Buchanan and Cowperthwaite and Gill and T. I. Gibson and McIver and Menzies and R. M. Wilson (equal); Brockwell and Gilbert and Sutton (equal); McKay and Pim (equal); Craig and McGookin and Nelson and J. Wilson (equal); Bollert and Boyes and A. E. Shearman and Smith (equal); Cameron and Gilchrist and Kemp (equal); Lingle, Harvey and Stewart and M. L. Wilson (equal); Cook and McLeod and Young (equal); Bell and Eckhart and Galloway and Lockyer and Putnam (equal); Ewin and H. J. Gibson and Keast (equal); Anderson and McNeill and Ritchie (equal); Denton and Elliott and H. A. F. Gibson (equal); Chandler and Richmond and Paton (equal); A. A. G. Kirkpatrick, R. H. Kirkpatrick and W. C. Wilson (equal); Clark, Comley and Plummer (equal).

European History: Class I.—Mills, R. M. Wilson, Mounce, Smith and McIver and Duncan (equal); Galloway. Class II.—Cowperthwaite, Story, White, T. S. Shearman, M. R. Wilson, Cook, Beveridge, A. E. Shearman, Menzies, Allen and Middlemiss and Elliott and Bruce (equal). Passed—Ewin, Pim, Luckraft, Newton and Cameron (equal); Stewart and Brockwell and Macdonald and Beverly (equal); McGookin and Wilkinson (equal); Roy and McNeill (equal); Handy and Gill (equal); Anderson, Kirkpatrick and Scott and Wardle (equal); Eckhardt and Kemp (equal); Gilchrist and McCreery (equal); Bollert and Clark and H. J. Gibson and Helme and Chandler (equal); Lockyer, Richmond, Dunton and Boyes (equal); Comley and Ritchie and Craig (equal); Cartwright and Sutton and Gilbert and Buchanan (equal).

First Year French: Class I.--Mills, R. M. Wilson; Class II.—Dunton, White, T., Shearman, Duncan, Macdonald, Mounce, Newton, Cameron, M. L. Wilson, T. I. Gibson and Roy (equal). Passed—Bruce, Clark, Story, and Anderson (equal); Bell, Elliott, Craig, Harvey, McNeill, Beveridge, A. Shearman, Keast, Nelson and J. Wilson (equal); Smith, Pim, Kemp, Gilchrist, Cowperthwaite, Ewin, Sutton, McCreery, Brockwell and H. A. Gibson (equal); Buchanan and Mackay and Eckhardt (equal); Boyes, Allen, Chandler, Ritchie, Gilbert, Galloway and Lockyer (equal).

German: Class I.—None. Class II.—None. Passed—Macdonald, Cowperthwaite, Howell.

Beginners' German: Passed—Schwengers.

Latin: Class I.—Mills, T. S. Shearman. Duncan and McIver (equal). Class II.—R. M. Wilson, Story, Mounce, Luckraft, Gilchrist, Newton and White (equal). Passed—Beveridge and Clark (equal); Galloway and R. J. Gibson (equal); Kemp, Harvey and Macdonald and Roy and M. L. Wilson (equal); Bruce and Cook and McCreery (equal); Cameron and Denton and Ewin and Handy and Lawrence (equal); Allen and Boyes and Ritchie and A. E. Shearman and Smith and Stewart (equal); Brockwell and Nelson (equal); Anderson and Bell (equal); Lockyer and Macleod (equal); T. I. Gibson and Gill (equal); Craig and Dunton (equal); Keast and McNeill and Taylor (equal); Buchanan and Eckhardt and J. Wilson (equal); Leslie and McGookin and Menzies and M. R. Wilson and Smith (equal).

Greek: Class I.—Mills, McIver. Class II.—Luckraft. Passed—Stewart, Gibson, H. J. Cook, McLean, J. A. Leslie, Taylor, Gill.

First Year Arts Physics: Class I.—Story. Class II.—Duncan, Luckraft, Bruce, Galloway and Shearman, T. S. (equal); Cousins and Shearman, A. and Stewart (equal); Plummer, Allan and Wilson, R. M. (equal); Mills, Pim and Kemp and Eckhardt and Beveridge (equal); Ewin, Wilson, M. R. Passed—Mounce, and McNeill (equal); White and McCreery and Cook (equal); Handy, Bell and Smith and Buchanan (equal); Newton and Bollert, Beverly and Boyes (equal); Cameron, Brockwell and Gilchrist and Richmond (equal); Craig and Kirkpatrick, R. H. (equal); Lockyer, Denton and McDonald and McKay (equal); Sutton, Elliott and Pearcy (equal); Gibson, H. J., Anderson and Bodie and Wilson, M. L. and Gill and Helme and Ritchie (equal).

First Year Arts, Physics Laboratory:

Class I.—Cook, Beveridge, Allen and Wilson, M. R. (eqaul); Bollert and Beverly (equal); Anderson and Cousins and Clark (equal); Bruce and Brockwell and Wilson, R. M. (equal); Shearman, T. S.

Class II.—Young, Keast and Kirkpatrick, R. H., and Richmond (equal); Story and White (equal); Wilson, M. L., Cameron and Ewin (equal); Plummer, Elliott and Dunton (equal); Mounce and Boyes (equal); Menzies, Bodie and Gill and Handy (equal). Passed—MacLeod and Roy and Denton and Wilson, J. and McCreery (equal); Harvey, Kemp and Newton (equal); Shearman, E. A. and Eckhardt and Lockyer and Mills (equal); Chandler and Macdonald and Luckraft (equal); Mackay and Pim and Morgan (equal); Smith and Wardle (equal); Bell and Ritchie (equal); Wilson, W. C., McNeill, Gilchrist, Lawrence and Middlemiss (equal); Helme and Kirkpatrick A. A. and Sutton (equal); Pearcy, Duncan, Carruthers and Galloway (equal); Buchanan and Craig and Stewart (equal); DesBrisay, Gibson, H. A. F.

Applied Science.

Second Year class list in order of merit.—McNaughton, Bell-Irving, Flitton (s), Taylor, Hughes, Muddell, Henderson (s), Fullerton (s), Ingram (s).

Analytic Geometry: Class I.—McNaughton. Class II.—Sawers, Bell-Irving. Passed—Henderson, Muddell, Mellish, Flitton, Hughes, Fullerton.

Calculus: Class I.—McNaughton. Class II.—None. Passed—Bell-Irving, Muddell, Hughes, Taylor.

Chemistry: Class I.—None. Class II.—McNaughton. Passed—Taylor, Flitton, Hughes, Mellish, Bell-Irving.

Chemistry Laboratory: Class I.—None. Class II.—McNaughton, Bell-Irving. Passed—Flitton, Taylor, Henderson, Hughes, Ingram and Muir (equal).

Graphical Statics: Class I.—Henderson, Muddell, Hughes. Class II.—Mellish, Bell-Irving, Flitton, McNaughton. Passed—Taylor.

Mapping: Class I.—Flitton, Muddell, Hughes. Class II.—Muir, Bell-Irving, Taylor, McNaughton, Henderson, Mellish. Passed—Ingram, Fullerton.

Materials of Construction: Class I.—Muddell. Class II.—Flitton, Bell-Irving, Hughes, McNaughton. Passed—Fullerton, Muir, Taylor, Mellish, Henderson.

Mechanical Drawing: Class I.—None. Class II.—Flitton, Muddell, McNaughton, Taylor, Ingram. Passed—Muir, Henderson, Hughes, Mellish, Fullerton, Bell-Irving.

Mechanics: Class I.—McNaughton. Class II.—Bell-Irving. Passed—Hughes, Muddell, Fullerton.

Mechanics of Machines: Class I.—None. Class II.—Bell-Irving, McNaughton. Passed—Muddell, Taylor, Flitton, Mellish, Hughes.

Physics: Class 1.—Bell-Irving, Muddell, McNaughton. Class II.—Taylor, Mellish, Fullerton. Passed—Flitton, Hughes, Henderson, Ingram.

Physics Laboratory: Class I.—Muddell, McNaughton. Class II.—Bell-Irving and Henderson (equal); Flitton and Taylor (equal). Passed—Ingram and Muir (equal); Fullerton, Hughes, Mellish.

Shopwork: Class I.—None. Class II.—Hughes, Taylor, Ingram, Muir, Henderson and Muddell (equal); McNaughton. Passed—Bell-Irving, Mellish, Flitton, Fullerton.

Summer Readings: Class I.—None. Class II.—Muir, Fullerton, Henderson. Passed—Bell-Irving, Mellish, Hughes, Flitton, McNaughton and Taylor (equal).

Surveying: Class I.—None. Class II.—Muddell and Taylor (equal); McNaughton. Passed—Flitton, Hughes, Bell-Irving, Henderson.

Field Surveying: Class I.—Flitton, Muddell, Cairnes. Class II.—Hughes, Ingram and Mellish (equal); Creighton, Muir. Passed—Bell-Irving and Henderson, Taylor, McNaughton, Fullerton.

First Year class list in order of merit.—Perry, Frame, McLennan, Wilson (s), McDonald, Creery (s), Otton (s), Swensen (s), Carnsew (s), Richardson (s), Shuen (s), Holland, Honeyman (s), Johnson (s), Ney (s), Stewart (s), Underhill (s), Walker (s), McNeill (s), Fournier (s), Gordon (s), Fitz-Henry (s),

First Year.

Algebra: Class I.—None. Class II.—Carnsew, Frame, Johnson, Perry, B. Passed—McDonald and Muir (equal); McLennan, Creery and Wilson (equal); Shuen and Underhill (equal); Swenson, Fournier, Honeyman, Fitz-Henry and Holland and Richardson and Stewart (equal).

Spherical Trigonometry: Class I.—None. Class II.—Frame, McLennan, Perry, Underhill, Stewart. Passed—Richardson and Shuen (equal); Johnson and McDonald and Swenson (equal); Walker, Wilson, Gordon, Creery, Carnsew and Honeyman (equal); Holland and McNeill and Ney and Otton (equal).

Geometry: Class I.—None. Class II.—McLennan, Perry B. R., Frame and McDonald (equal). Passed—Creery, Shuen, Wilson, Underhill, Otton, Ney and Walker and Perry R. S. (equal).

Descriptive Geometry: Class I.—Perry, Cairnes. Class II.—McLellan, Otton, Wilson. Passed—Ney, Frame, Gordon and Holland and McDonald (equal).

English: Class I.—None. Class II.—Richardson, Carnsew, Honeyman, Frame. Passed—Johnson, Perry, Holland, Ney, Otton, Gordon, Underhill, Creery and McDonald

(equal); Stewart and Swenson (equal); McNeill and Walker (equal); McLennan, Shuen.

Freehand Drawing: Class I.—None. Class II.—McLennan and Richardson (equal); Walker, Frame and Creery and Wilson (equal); Muddell and Ney (equal); Shuen, Honeyman. Passed—Otton and Swenson and Underhill (equal); Perry, Carnsew and Fournier and Holland and McDonald (equal); Gordon and Johnson (equal); Fitz-Henry, McNeill and Stewart (equal).

Mechanics: Class I.—None. Class II.—Frame. Passed—Perry, Cairnes, Carnsew, MDonald, Fitz-Henry, McLennan and Wilson (equal); Howell, Holland and Ney and Swenson (equal).

Mechanical Drawing: Class I.—Ney, Walker. Class II.—Frame, Otton, McLennan, Swenson, Holland and Perry (equal). Passed—Honeyman, Wilson, McDonald, McNeill, Gordon and Stewart (equal); Shuen, Underhill, Richardson, Creery and Carnsew and Fournier (equal).

Physics: Class I.—None. Class II.—Richardson, Perry, McDonald, Frame, Holland and Honeyman and McNeill and Wilson (equal). Passed—Johnson and Stewart (equal). Creery, McLennan, Ney, Otton and Swenson (equal); Shuen and Underhill (equal); Fitz-Henry.

Physics Laboratory: Class I.—Richardson, Shuen. Class II.—Ney, McLennan, Stewart, Perry and Swenson (equal); Holland, McNeill and Otton (equal); Wilson, Fitz-Henry and Honeyman and Johnson (equal); Creery. Passed—McDonald, Frame and Gordon (equal); Carnsew, Fournier and Underhill and Walker (equal).

Shopwork: Class I.—None. Class II.—Walker, Swenson, Otton, Wilson, Frame and Perry (equal); Gordon, McLennan, Carnsew and Honeyman (equal). Passed—Fournier and Shuen (equal); McDonald, Underhill, Creery, Johnson and Richardson (equal); Fitz-Henry, McNeill. Passed in Woodwork, Howell, Jones, Stewart. Passed in Smithwork, Jones.

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