



LAKEHEAD COLLEGE

of ARTS, SCIENCE
and TECHNOLOGY

Oliver Road
Port Arthur, Ontario

CALENDAR
1962-63

CALENDAR
OF THE
LAKEHEAD COLLEGE
OF
ARTS, SCIENCE, AND
TECHNOLOGY

FORT WILLIAM — PORT ARTHUR

1962-1963

- A. UNIVERSITY DIVISION
- B. TECHNOLOGY DIVISION
- C. SPECIAL DIVISION

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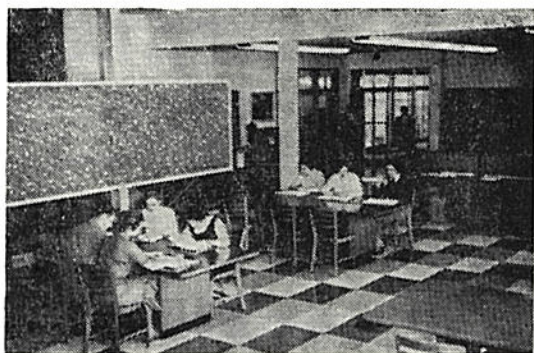
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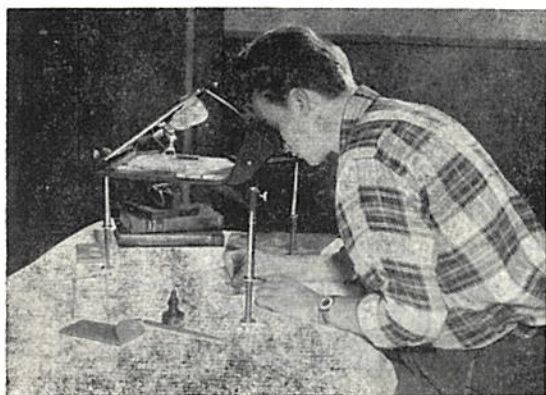
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PHYSICS
LABORATORY

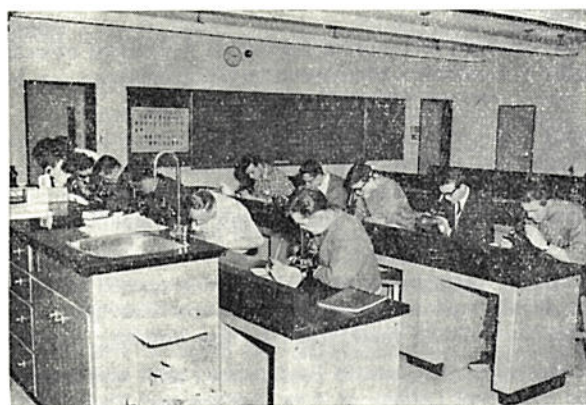


LIBRARY



FOREST
TECHNOLOGY

HOCKEY



**BIOLOGY
LABORATORY**

**LANGUAGE
LABORATORY**



The Lakehead College

During the years 1944-46, a committee of Lakehead representatives of industry, interested in advanced education, conducted a survey of the educational requirements of Northwestern Ontario. A brief, outlining the need in this area for an institution that would provide post-secondary school instruction in technological and academic subjects, was forwarded to the Department of Education, Province of Ontario, for its consideration. On June 4, 1946, an Order-in-Council was passed directing the establishment of a Provincial Technical Institute at the Lakehead, to be known as the Lakehead Technical Institute and to be administered by an Advisory Committee responsible to the Department of Education.

The Lakehead Technical Institute was opened on January 5, 1948, in temporary quarters at 100 Cumberland Street, North, Port Arthur. The curriculum consisted of a two-year terminal course in Mining Technology. In September of the same year the curriculum was expanded to include a two-year terminal course in Forest Technology and first year (post Grade XIII) University courses in Applied Science, Arts, Commerce, Forestry, Forest Engineering and Household Science. Chemical Technology was added in 1953 and Engineering Technology in 1957.

After careful consideration, the Advisory Committee agreed on a two-fold objective—to establish an independent college in a suitable permanent building designed for future expansion.

The City of Port Arthur donated a site comprising some 80 acres of land lying between the two cities and overlooking Memorial Avenue. The Advisory Committee prepared a prospectus and launched a building fund campaign in which the sum of approximately \$175,000.00 was raised, largely from local industries and private individuals. Plans for the building were prepared.

The Province of Ontario, through the Department of Public Works, agreed to construct the first building. Some of the furnishings were provided by the Province and the remainder were purchased through the building fund raised by the Advisory Committee.

An act passed in the second session of the Ontario Legislature, 1956, and proclaimed on August 1, 1957, established the Lakehead College of Arts, Science and Technology and transferred the management and control of the original Lakehead Technical Institute to the Board of Governors established by the Act. The new building was formally opened on October 2, 1957.

A new library wing has been added to the building. It was formally opened in March, 1960. Two new additions, providing additional lecture rooms and laboratory facilities to the College, were opened for use in the fall of 1961.

A men's residence is currently under construction and scheduled for completion by September 1, 1962. It will provide living quarters, recreational and dining facilities for 50 students.

Plans are being prepared for a Campus Centre and construction scheduled for 1962-63. An additional 105 acres of land adjacent to the College has been purchased for future expansion.

The original Lakehead College of Arts, Science and Technology Act of 1956 was amended in March, 1962 (Bill 58) to give the College powers to confer university degrees and honorary degrees and awards in Arts and Science. Up to 1960 the College offered only first year (post Grade XIII) courses in the University Division. Some second year general Arts courses were added in the 1960-61 session, and the number of these courses has been increased each year. It is anticipated that degree-granting status will be reached by 1966.

Procedure for Admission

Students should write to the College stating the course to which they wish to be admitted. Blank forms will be returned. These forms should be completed and returned to the College as soon as possible after May 1st along with a cheque or money order for \$10.00 covering the registration fee.

University Division

The following courses are offered in the University Division:

Applied Science

General Arts (Two Years)

Honour Arts (One Year)

Commerce

Dentistry

Forestry

Forest Engineering

Household Science

Pharmacy

All of the University Division courses, with the exception of General Arts, are of one-year duration. Successful students receive credit for this year and complete their courses at one of the following Universities:

University of British Columbia (Arts, Forest Engineering), University of Manitoba (Arts, Applied Science, Commerce), McMaster University (Arts), University of New Brunswick (Forestry), Queen's University (Arts, Applied Science, Commerce), University of Toronto (Arts, Applied Science, Forestry, Dentistry, Household Science, Pharmacy), University of Western Ontario (Arts, Business Administration), Assumption University (Arts, Applied Science).

A General Course in Arts consists of one year at the Lakehead College and two years at one of the universities listed above, or two years at the Lakehead College and one year at one of the universities listed above. An Honour Course in Arts or any of the remaining courses consists of one year at the Lakehead College and three years at one of these universities.

Technology Division

The following courses are offered in the Technology Division:

*****Medical Technology**

Engineering Technology (Ryerson)

Architecture Technology (Ryerson)

***Forest Technology**

****Mining Technology**

****Engineering Technology**

*Graduates may apply for admission to the degree course in Forestry at the University of New Brunswick with advanced standing.

**Graduates may apply for admission to degree courses at the Michigan College of Mining and Technology with advanced standing.

***The course in Medicine Technology is currently under revision. Further information may be obtained from the Principal, Lakehead College.

FEES

The Board of Governors reserves the right to make changes without notice in the published scale of fees if, in their opinion, circumstances so require.

Cheques should be made payable to the Lakehead College of Arts, Science and Technology. Cheques drawn on banks outside of the Lakehead must include exchange.

Fees for the session are payable before or at registration. A student is not registered and may not attend classes until the required fees have been paid or arranged for with the Principal.

The tuition fee may be paid in two instalments, the first at registration and the second on December 1st. A service charge of \$5.00 will be collected with the first payment.

The registration fee of \$10.00 will not be refunded unless the application is rejected by the College.

Tuition fees may be refunded to students who withdraw from the College. The student must notify the Principal in writing and the amount of the refund will be determined by the date on which such notice is received.

If a student withdraws on or before November 15th, one-half of the tuition fee will be refunded; between November 16th and December 22nd one-third of the tuition fee will be refunded. After December 22nd, no refund of fees will be made.

No refund is made on the fee for student interests to a student who attends any part of the session.

UNIVERSITY DIVISION FEES

Registration fee	\$10.00
Tuition fee	\$290.00
Student associations	\$20.00

The student will have additional expenditures varying from \$40.00 to \$80.00 for books, drawing instruments, etc.

TECHNOLOGY DIVISION FEES

Registration fee	\$10.00
Tuition fee	\$190.00
Student associations	\$20.00

FIELD TRIPS

To broaden the student's knowledge and familiarity with the industry or business for which he is preparing himself, a number of supervised field trips are organized on a voluntary basis each year. Any expense involved is borne by the student himself. The approximate sum required to cover these expenses is:

Forestry (first year)	\$10.00
Forestry (second year)	65.00
Mining (first year)	10.00
Mining (second year)	45.00
Engineering (first and second year)	10.00
Architecture (first year)	10.00

BOOKS

The student will have additional expenditures varying from \$40.00 to \$80.00 depending on the course, for text books, drawing instruments, etc.

PART-TIME STUDENTS

This is an inclusive fee covering registration, lectures, library and examinations (except supplementals).

Each full course \$60.00

Students who wish to sit in on a course on a part-time basis but do not wish to write the examinations pay a special auditing fee of \$15.00 per course. These students may not change their status to regular part-time students part-way through the course.

Each year Lakehead College offers approximately six courses in Arts in Summer School. Further details may be obtained from the Principal.

LATE REGISTRATION

Unless granted exemption by the Principal, students in all years who defer registration until after the prescribed registration period are required to pay an additional fee of \$1.00 a day to a maximum of \$10.00.

Requirements for Admission

Students whose matriculation credits do not fit exactly into the requirements outlined below should communicate with the Principal well in advance of the session to get a ruling on their individual cases.

The University Division

ARTS, COMMERCE, HOUSEHOLD SCIENCE

Candidates must fulfil the entrance requirements for the university at which they plan to complete their course. In general, candidates for admission must have obtained

- (a) The Ontario Secondary School Graduation Diploma
- (b) The Ontario Secondary School Honour Graduation Diploma (Grade XIII) in at least nine papers with an average of at least 60 per cent.

Students applying for admission to the Humanities or Social Sciences should have standings in: English (2 papers); Language (2 papers); two of algebra, geometry, trigonometry or an additional language; three elective papers.

Students applying for admission to the Natural Sciences should have standings in: English (2 papers); language (2 papers); chemistry and physics; algebra, geometry and trigonometry.

Students intending to enter Honour Courses should check carefully the selection of subjects and standings required for admission to the university where they plan to continue their studies.

Candidates for Commerce must have standing in three mathematics papers.

Students who wish to claim standing in Music must present Grade XIII Departmental or Grade IV Theory or Grade VIII practical and Grade II Theory.

Certificates Equivalent to Ontario Grade XIII:

CANADA

Quebec: Senior High School Leaving Certificate and others;
Alberta: (Grade XII) Senior Matriculation;
Manitoba: Grade XII.
Nova Scotia: (Grade XII) Senior Matriculation;
British Columbia: (Grade XIII) Senior Matriculation;
New Brunswick: Senior Matriculation;
Prince Edward Island: Third Year Certificate, Prince of Wales College;
Newfoundland: First Year Memorial University.

ENGLAND, WALES, NORTHERN IRELAND, HONG KONG

The General Certificates of Education (GCE), with passes in six subjects, of which two must be at the advanced level.

UNITED STATES

Standing in the first year of a recognized college or university with a total of at least 30 semester-hour credits.

Certificates of other countries are also accepted. Information and valuation of documents may be obtained from the Registrar's Office.

THE ADULT STUDENT

Any student who is twenty-one years of age or older, who has been away from formal education for more than two years, and who does not have the minimum admission requirements, may apply for admission as a special adult student. Each application will be considered on its merits by the Admissions Committee. This regulation applies to students registering for day courses as well as to those registering in the Extension Department.

APPLIED SCIENCE, FOREST ENGINEERING

Candidates for admission to the courses in Applied Science and Forest Engineering must submit the Ontario Secondary School Graduation Diploma including a second language, and the Ontario Grade XIII Certificate (or equivalent certificate) showing that the applicant has obtained the required standing in the following subjects:

- Grade XIII.—1. English.
2. Mathematics (Algebra, Geometry and Trigonometry).
3. Science (Chemistry and Physics).
4. One of French, German, Latin, Spanish, Botany and Zoology, History, Geography.

NOTE: Candidates applying for these courses must have a good foundation in, and liking for, mathematics. Candidates must fulfil the entrance requirements for the University at which they plan to complete their course.

DENTISTRY

Candidates for admission to the second Preprofessional year must submit standing in the following Grade XII subjects: English, Mathematics (two of Algebra, Geometry, Trigonometry), Chemistry, Physics, French, German, Greek, Italian or Spanish, Latin, one additional paper.

Candidates must fulfill the entrance requirements for the university at which they plan to complete their course.

FORESTRY

Candidates for admission to the course in Forestry must submit the Ontario Secondary School Graduation Diploma and the Ontario Grade XIII Certificate (or equivalent certificate) showing that the applicant has obtained the required standing in the following subjects:

Grade XIII.—1. English.

2. One of French, Latin, German, Spanish, Italian, Greek.

3. Science (Chemistry and Physics).

4. Algebra, Geometry and Trigonometry.

NOTE: Candidates intending to proceed to a degree in Forestry must have a strong physique and good eyesight in order to meet the rigours of bushwork. Any candidate obviously deficient in these qualities will be advised not to enrol.

Candidates must fulfil the entrance requirements for the university at which they plan to complete their course.

PHARMACY

Candidates for admission to the course in Pharmacy must submit the Ontario Grade XIII Certificate (or equivalent certificate) showing that the applicant has obtained the required standing in the following subjects:

1. English.

2. Mathematics (two of Algebra, Geometry, Trigonometry).

3. Science (Chemistry and Physics).

4. One of French, Latin, German, Spanish, Italian, Greek.

5. One of Botany, Geography, History, a Mathematics paper not chosen in 2, Music, Zoology.

An average of Third Class Honours is required in the five subjects chosen.

A knowledge of Latin is desirable for a student in Pharmacy.

The Technology Division

1. The Ontario Secondary School Graduation Diploma, any course, provided that applicant has completed the mathematics and science subjects of Grades XI and XII with a minimum average of 60%

or

2. Equivalent standing approved by the Committee on Admissions.

NOTE: A student admitted to any course with the minimum admission requirements may be placed on probation by the Committee on Admissions. Such a student will be expected to show at all times concrete evidence of serious application to study. In the event that a student on probation fails his year he is not permitted to repeat, but must withdraw.

The University Division

Details of Courses Offered

APPLIED SCIENCE

Students intending to continue in Civil, Mining, Mechanical, Metallurgical, Chemical, Electrical or Ceramic Engineering, Mining Geology or Engineering and Business at the University of Toronto; in Civil, Mining, Mechanical, Electrical or Metallurgical Engineering, Chemistry, Physics or Geological Sciences at Queen's University; Civil, Electrical, Mechanical or Geological Engineering, or Engineering Physics at University of Manitoba; Chemical, Civil, Electrical or Mechanical at Assumption University; Chemical, Civic, Electrical Engineering Physics, Mechanical or Metallurgical Engineering at McMaster University are required to take the following subjects:

	Per Week Lecture Hours	Lab. Hours Per Week
Chemistry 100, 101	3	3
Descriptive Geometry 100	1	0
Engineering Drawing 100	1x	3x 6y
Engineering Drawing 101*		0
English 100	2	0
Geology and Mineralogy 100	2	0 2y
Mathematics 100, 101	6	3 0
Physics 100, 101, 102	5	3x 3
Surveying 100	1	3x
Survey Field School*		
Total	21	13x 13y

x—First Term only. y—Second Term only.

*A two-week field course commencing after spring examinations.

GENERAL ARTS

A student must complete fifteen to eighteen courses selected from the four basic fields of knowledge:

1. Languages
2. Humanities
3. Social Sciences
4. Natural Sciences

In the selection of subjects the student should be guided by the regulations as outlined in the Calendar for the university where he plans to complete his course. Students should write to the Registrar of that university and present their selection of courses for approval.

The student should select a subject for major concentration and another subject for minor concentration. He will normally take five courses in the major field and three in the minor field during his three years of study. Alternatively, he may select three courses in three fields. In addition, each university lists a number of compulsory courses.

Students who plan to teach in Secondary Schools will find it advantageous to select five university courses above the level of Grade XIII standing, in a subject taught in the schools of Ontario. They may apply for a Type B Certificate endorsed in the subject selected for concentrated study.

FIRST YEAR

A typical first year might consist of:

- (1) English 10 (compulsory)
- (2) A language above the level of Grade XIII (compulsory) French 10, Latin 10, German 10, Russian 10, etc.
- (3) One course from the Humanities
- (4) One course from the Social Sciences
- (5) One course from the Natural Sciences
- (6) One option

Some universities require five courses in the first year, others require six.

GENERAL ARTS—Second Year

After the completion of First Year General Arts at the Lakehead College or the equivalent at another university, students may enter the Second Year General Arts at the Lakehead College. The subjects will be chosen to correspond with the subjects of the Second Year General Arts course at the university where the student plans to take his degree.

Students who plan to enter third year at Queen's University should select courses from the following list: English 20, 21, Botany 20, Chemistry 20, 21, Economics 20, French 20, 22, History 20, 21, Latin 20, Philosophy 20, 21, Political Science 20, 21, Psychology 20.

Students who plan to enter third year at the University of Toronto should select courses from: English 20, 22, French 20, 22, History 20, Philosophy 20, Political Science 20, 21, Psychology 20.

Students who plan to enter third year at the University of Western Ontario should select courses from: English 20, 21, Botany 20, Chemistry 20, 21, Economics 20, French 20, 22, History 20, 21, Latin 20, Philosophy 20, Political Science 20, 21, Psychology 20.

Students planning to continue their studies at Assumption University of Windsor should select courses from: English 20, 21, Botany 20, Chemistry 20, 21, Economics 20, French 20, 22, History 20, 21, Latin 20, Philosophy 20, 21, Political Science 20, 21, Psychology 20.

Students wishing to concentrate in a subject must obtain permission from the Department concerned.

Students should write to the Registrar of the University where they plan to complete their course and submit their selection of subjects for approval.

HONOUR ARTS

Students who complete their first year at the Lakehead College may enter some Honour courses at other universities. Their standings in Grade XIII subjects and Lakehead College subjects must indicate better than average ability. Admission to these courses will be at the discretion of the university concerned.

Students who wish to go on into Honour courses should discuss their plans with the Principal prior to their enrolment at the College.

COMMERCE

Students intending to continue in the Commerce course at the University of Manitoba or Queen's University, or in the Business Administration course at the University of Western Ontario, are required to take six or seven subjects. These subjects should be chosen to correspond with the subjects of the First Year course as given in the Calendar of the University where the student intends to complete his course.

Compulsory subjects—Commerce 10, Economics 10 or 11, English 10, Library Science 10.

Optional subjects—Botany 10, French 10, Geology 10, Mathematics 11, Mathematics 12, History 10 or 11, Philosophy 10, Political Science 10, Psychology 10, Zoology 10.

FORESTRY

Students enrolling in the Forestry course must take the following subjects:

Botany 10, Chemistry 10, Descriptive Dendrology 10, Forest Mensuration 10, English 10, Introduction to Forestry 10, Physics 10, 11 and 12, Zoology 10.

FOREST ENGINEERING

Students intending to continue in Forest Engineering at the University of British Columbia are required to take the following subjects:

Botany 10, Descriptive Geometry 100, Engineering Drawing 100, Engineering Drawing 101*, English 100, Mathematics 100, 101, Physics 100, 101, 102, Introduction to Forestry 10, Surveying 100, Survey Field School*.

*A two-week field school commencing after spring examinations.

HOUSEHOLD SCIENCE

Students intending to continue in Household Science at the University of Toronto are required to take and obtain at least second class honors (66%) in the following subjects:

Physics 1, Chemistry 1A, Botany 10, Zoology 10, English 10 or French 10.

PHARMACY

Students intending to continue in Pharmacy at the University of Toronto are required to take the following subjects:

Compulsory: Botany 10, Chemistry 10, English 10, Physics 10, 11, and 12, Zoology 10.

Optional in one of French 10, Philosophy 10, Political Science 10.

NOTE: For admission to Second Year Pharmacy at University of Toronto, a 60% overall average, and 60% average in Science subjects is required.

DENTISTRY

The following subjects are required: Chemistry 10 and 11, English 10, Physics 10, 11 and 12, Zoology 10, one of French 10, Latin 10, Mathematics 11, Philosophy 10, Psychology 10.

Students who complete these subjects with satisfactory standing may apply for admission to the First Dental Year at the University of Toronto.

The Technology Division

Details of Courses Offered

FOREST TECHNOLOGY—First Year

	Lecture Hours		Lab. Hours	
	Per Week		Per Week	
—Biology 1	2		2	
—Descriptive Dendrology 1	0		3	
—Elementary Forestry 1	1		0	
—English 1	3		0	
—Engineering Drawing 1	0		3	
—Forest Fire Control 1	1y		0	
—Forest Mensuration 1	1		3	
—Mathematics 1A	3		0	
—Mathematics 1B	2		0	
—Physics 1	3x	2y	3y	
—Surveying 1	1		3x	
—Field Work				
Total	15x	16y	17x	14y

Second Year

	Lecture Hours		Lab. Hours	
	Per Week		Per Week	
—Cruising and Photogrammetry 2	1		5	
—English 2	1		0	
—Forest Utilization 2	3		0	
—Geology 2	2		2y	
—Mathematics 2A or Mathematics 2B	3		0	
—Silviculture 2	3		0	
—Surveying 2	2		3x	
—Survey Field School*				
—Wood Technology 2	2		3	
—Field Work				
Total	18		11x	10y

FIELD WORK FOR FOREST TECHNOLOGY

*—A one-week field training school commencing after spring examinations

x—First Term only. y—Second Term only.

A forested area of 3,000 acres situated 22 miles north of Port Arthur in the vicinity of Island and Two Island Lakes has been reserved for the use of the Lakehead College. The forest types found here are representative of those common to Northwestern Ontario. Because there is considerable variation of age classes in these forest types, the area is well suited to training men in forest mapping, cruising, utilization and research.

Students are expected to supply themselves with sufficient warm serviceable clothing. Such items as heavy wool shirt, either heavy wool or heavy khaki trousers, underwear, sturdy waterproof high boots or rubbers, woollen socks are essential.

The schedule of field work is outlined below:

First Year

1. Practical field training (Lakehead College Forest), two weeks in fall term.

Second Year

1. Practical field training (Lakehead College Forest), two weeks in fall term.
2. Pulpwood Scaling Course (Department of Lands and Forests), two weeks in fall term.
3. Field survey, one week in fall term.
4. Utilization (tour of company operations), one week in December and one week in February.
5. Afternoon visits to local forest industries.

MINING TECHNOLOGY—First Year

	Lecture Hours		Lab. Hours	
	Per Week		Per Week	
—Chemistry 1A	3		3	
—Engineering Drawing 1	0		3	
—English 1	3		0	
—Geology 1	2		2y	
—Mathematics 1A	3		0	
—Mathematics 1B	2		0	
—Mineralogy	1		3	
—Mining 1	2		0	
—Physics 1	3x	2y	3y	
—Surveying 1	1		3x	
—Field Work				
Total	20x	19y	12x	14y

MINING TECHNOLOGY—Second Year

	Lecture Hours		Lab. Hours	
	Per Week		Per Week	
—Assaying 2	1		3	
—Descriptive Geometry 2	1		0	
—Engineering Drawing 2	0		3	
—English 2	1		0	
—Geology 2A	3		2	
—Geology 2B	1		0	
—Mathematics 2A or Mathematics 2B	3		0	
—Mining 2	3		2	
—Physics 2	3		2y	
—Surveying 2	2		3x	
—Survey Field School*				
—Field Work				
—Thesis				
Total	17		14x	16y

*A one week field-training school, commencing after spring examinations.
x—First term only. y—Second term only.

FIELD WORK FOR MINING TECHNOLOGY

Field training in geological mapping is carried out during a two-week period in the Fall. First-year students lay out pace and compass traverses and picket lines which serve as the control for actual geological mapping undertaken by the student in the following year. An area of very rugged terrain in Pardee Township is used for the practice area.

One week of actual surveying practice is carried out at the East End Silver Mountain Mine, 30 miles west of Fort William. Running a complete traverse through drifts, raises, and cross cuts familiarizes the student with actual practical problems involved in underground surveying. First-year students act as assistants to the second-year students.

Students are expected to supply themselves with sufficient warm, serviceable clothing. Such items as woollen socks, underwear, work pants and shirt, warm jacket and boots, bedding and toilet articles are essential.

MEDICAL TECHNOLOGY*

	Lecture Hours Per Week	Lab. Hours Per Week
Biology 1	2	2
Botany 10	2	2
Chemistry 1A	3	3
English 1	2	0
Mathematics 1A	3	0
Mathematics 1B	2	0
Physics 1	2	3
Physics 2	2	0
Zoology 10	2	3
Total	20	14

Students who complete this course successfully are eligible for admission to the twelve month course given at the Department of Health Laboratories, 360 Christie Street, Toronto 4, Ontario.

* This course is currently under revision.

ENGINEERING TECHNOLOGY—First Year

	Lecture Hours Per Week	Lab. Hours Per Week
—Chemistry 1A	3	3
—Engineering Drawing 1	0	3
—Engineering 1	3	0
—English 1	3	0
—Mathematics 1A	3	0
—Mathematics 1B	2	0
—Physics 1	3x	2y
—Strength of Materials 1	3y	3y
—Surveying 1	1	0
Total	18x	20y

ENGINEERING TECHNOLOGY—Second Year

	Lecture Hours Per Week	Lab. Hours Per Week
—Descriptive Geometry 2	1	2x
—Engineering Drawing 2	0	3
—English 2	1	0
—Engineering Estimating 2	2	0
—Hydraulics 2	2x	0
—Instrumentation 2	2y	0
—Economics 2	3	0
—Mathematics 2A or Mathematics 2B	3	0
—Physics 2	3	2y
—Strength of Materials 2	2x	2x
—Structures 2	2y	3y
—Surveying 2	2	3x
—Survey Field School*	2	2x
—Testing Laboratory		
Total	19x	19y

x—First Term only. y—Second Term only.

*—A one week field training school commencing after spring examinations.

ENGINEERING TECHNOLOGY (RYERSON)—First Year

	Lecture Hours Per Week		Lab. Hours Per Week	
—Chemistry 1A	3		3	
—Economics 2	2		0	
—English 1	3		0	
—Hydraulics	2x		0	
—Mathematics 1A	3		0	
—Mathematics 1B	2		0	
—Physics 1	3x	2y	3y	
—Physics 2	3		2y	
—Strength of Materials 1		3y		
Total	21x	21y	6x	11y

Students who complete this course successfully are eligible for admission to the courses listed on page ?? . The second and third years in these courses are only available at the Ryerson Institute of Technology.

ARCHITECTURAL TECHNOLOGY (RYERSON)—First Year

	Lecture Hours Per Week		Lab. Hours Per Week	
—Design	2		0	
—Drafting	1		5	
—English 1	3		0	
—Engineering 1	3		0	
—Mathematics 1A	3		0	
—Mathematics 1B	2		0	
—Physics 1	3x	2y	3y	
—Strength of Materials 1		3y	0	
Total	20x	22y	5x	8y

Special Division

The Special Division offers evening instruction to mature students. Over five hundred students have enrolled in the Industrial and Cost Accounting Courses. The College also offers courses for Stationary Engineers, X-Ray Technicians and other courses as required.

Advanced Technical Evening Classes are offered under the supervision of the Ontario Department of Education. The courses are on the post-secondary school level and are designed to enable persons employed in industry to prepare themselves for advancement.

These courses lead to the Advanced Technical Evening Course of Study Certificate issued by the Minister of Education.

The courses offered vary from year to year, depending on the demand. Details may be obtained from the Principal.

General Information

LIBRARY

The Library of Lakehead College contains 20,000 catalogued books with a wide selection in each subject of the curriculum. In addition to the general collection and the adequate reference section, it contains the Forest Library of Northwestern Ontario, with some 3,000 catalogued pamphlets on Forestry and a special index (on cards) to Forestry Chronicles. A wide selection of pamphlets in the field of mining and engineering is also available. Our library has, at present, 263 serials of which 226 are current subscriptions. Microfilm and microcard readers, and a collection of books, pictures, and other materials on the history of the Lakehead are special features. The library also has a fine hi-fi set and a growing collection of records.

In March, 1960, the books were moved from the old quarters to the new building, which has a capacity for 35,000 volumes and seating space for 76 students. The general book stacks are readily available to all students and persons who wish to qualify as "extra-mural" readers.

LANGUAGE LABORATORY

A small electronic language laboratory has been installed. It is well supplied with tapes and students who study languages are required to practice regularly.

BANKING

The Bank of Montreal provides regular banking service for students, in temporary quarters on the campus.

BOOKSTORE

A bookstore carrying all the prescribed textbooks and other supplies is operated by the College. Books are sold at cost.

MEN'S RESIDENCE

A residence is currently under construction and scheduled for completion by September 1, 1962. It will provide living, dining and recreational facilities for fifty men in single rooms.

The purpose of the residence is to provide students with lodging and meals at moderate cost together with facilities for effective study and comfortable living. It provides a community life in which the sharing of experiences and the exchanging of ideas are an important part in the education of each student.

A resident Don is in charge of the residence. The students in residence elect a House Committee responsible to the Don for the routine of administration.

Applications for admission to residence should be made as soon as possible. Accommodation is available only to students desiring room and board on a seven-day week basis. The cost for room and board has not been fixed. It will be approximately \$20.00 per week. The entire fee may be paid at the beginning of the session or in instalments. Application forms, information regarding rates, rules, etc., may be obtained from the Principal's Office.

OFF-CAMPUS LIVING ACCOMMODATION

Lists of boarding houses and rooming houses are available through the College. Rates range from \$16.00 to \$20.00 per week.

EMPLOYMENT

Student placement service is available through the College. This service is in co-operation with industry and the National Employment Service. Assistance will be offered to the students in obtaining full-time employment during the summer vacation period and permanent employment after graduation.

ACCIDENT INSURANCE

Each full-time student of the College is insured against loss resulting from bodily injuries caused solely by accidents which occur while the student is engaged in activities connected with the College. This includes field trips and sporting activities sponsored by the College. The full terms of the contract may be obtained by referring to the bulletin board in the Students' Common Room. Briefly the plan provides indemnity for (1) death, dismemberment, or loss of sight, (2) hospital charges, nursing fees, medical and surgical fees, (3) dental expenses for the extraction of natural teeth. Payments under clauses (1) and (2) are subject to a deduction of \$5.00 from each claim, and under clause (3) to a deduction of \$25.00 from each claim.

The cost of this protection may vary from year to year. It is included in the Student Association fee.

Any student who has an accident covered by this insurance should report the details to the principal of the College as soon as possible after the accident.

ATHLETICS

The Lakehead College places emphasis on intramural competitive athletics in order that a greater number of students may participate. Where feasible, College teams are entered in city or district leagues. Rugby, football, basketball, hockey, bowling and curling are the principal activities. Accommodations are available in nearby gymnasias and playing fields; coaching and material assistance are extended by the staff and interested local citizens.

Students who wish to play hockey, football or basketball for an outside team must obtain permission from the Principal.

Currently Lakehead College and the Mustang Athletic Association operate the Lakehead College Mustangs, a football team entered in the Lakehead Rugby Football Union, intermediate league. College students who wish to play in this League must play on the Lakehead College Mustang team. A basketball team is entered in a senior inter-city league on the same basis.

STUDENT ACTIVITIES

All students are members of the Students' Administrative Council, pay a fee to it and are expected to share in its duties and responsibilities. The Executive, elected by the students at the commencement of the Autumn term each year, represents the students at College functions and on public occasions, and receives and administers all funds accruing from Students' Council fees.

Besides the SAC, there are a number of other student organizations which give students an opportunity to satisfy their extra-curricula interests. These clubs and groups play a large part in the life of the College. A student will derive the greatest benefit from his college education by developing a sense of balance between the social and the academic. Each year, the SAC publishes a Yearbook, depicting the College year in review. Other activities include photography, debating, ham radio and others.

GUIDANCE AND COUNSELLING

Assistance in selecting a "major" is provided by the Arts faculty. Students are free to discuss their educational program, their choice of career, and their personal problems with any officer of administration or any member of the teaching staff. The services of a professional psychologist are available.

General Regulations

1. CONDUCT

The College reserves the right to require students to withdraw from any course at any time where progress, conduct, attendance or attitude is deemed unsatisfactory.

2. REGISTRATION

Application for admission, accompanied by the prescribed registration fee, should be forwarded to the Principal after May 31st. Registration in all classes will take place on dates specified on page 4.

A student who fails to register on the prescribed dates pays an additional fee of \$3.00 on the first day, with \$1.00 for each day after that (to a maximum of \$10.00), unless granted exemption by the Principal.

3. ATTENDANCE

Students are expected to attend all lectures, seminar and laboratory periods regularly, and to be diligent in their studies. Students who are absent, for any cause including illness, from more than fifteen per cent of the lecture and laboratory periods in a subject shall be prohibited from writing the final examination in that subject.

4. EXAMINATIONS

Mid-session examinations will be conducted during the week before the Christmas holidays. Final examinations in all subjects completed during the first term will be held at Christmas. Final examinations in all other subjects will be held at the end of the second term. Supplemental examinations will be held in April and August of the same year. A student will not be allowed to write any examinations if he has not paid all fees and dues for which he is liable at that time.

5. STANDING

A student's standing will be determined not only by the results of mid-session and final examinations, but also by the work of the whole term including class tests, laboratory work, essays, reports, and attendance. Fifty per cent is required in each subject for pass standing. An average of fifty-five per cent overall is required for successful completion of the year. Students who fail in not more than three subjects, including practical classes, may write supplemental examinations in the following August. Students who fail in more than three subjects at regular examination, or fail in one or more supplemental examinations, are considered to have lost their year. Supplemental examinations in drawing and laboratory work are not permitted.

The following grading system is used at Lakehead College:

- A—Excellent (75 - 100%)
- B—Good (66 - 74%)
- C—Fair (60 - 65%)
- D—Passing (50 - 59%)
- F—Failure (below 50%)

AEGROTAT STANDING

Petitions for consideration at the annual examinations on account of sickness, domestic affliction, or other causes, must be filed with the Principal on or before the last day of examinations. This must be supported by a doctor's certificate stating that the candidate was examined at the time of illness or other satisfactory evidence.

Aegrotat standing may be granted or the student may be granted permission to write the examinations in August.

SUPPLEMENTAL EXAMINATIONS

Students who are eligible to write supplemental examinations in August must apply in writing before July 1st. These examinations may be written only at the specified time before the next academic session.

The fee is \$5.00 per paper, and it must be paid at the time application is filed. This fee cannot be refunded.

Students who find it impossible to write supplemental examinations at Lakehead College may make arrangements to write at other centres. Such arrangements should be completed early in July. Further details may be obtained from the College office.

Details of Subjects

ASSAYING 1

Fire and Wet Assaying—An introductory course to the practice and technique of fire and wet assaying. Sampling methods, sample preparation and their fundamental importance are stressed. Fire assaying is taken during the first term and wet assaying during the second term. Laboratory practice includes procedures for analysis of gold, silver, copper, lead, zinc, iron and nickel ores. Lectures consider the basic chemistry of procedures involved.

Text—TEXTBOOK OF FIRE ASSAYING; Shepherd and Dietrick.

Lectures, 1 hour per week; laboratory, 3 hours per week.

BIOLOGY 1

An introductory course for Forestry Technology students dealing with general biology. Includes a survey of the plant and animal kingdoms with special emphasis on forest biology. Students will be expected to do extra reading as assigned by the instructor.

Text—GENERAL BIOLOGY; Core, Strawsbaugh and Weimer.

Lectures, 2 hours per week; laboratory, 2 hours per week.

BIOLOGY 10

An introductory course dealing with the principles of biology. Special emphasis is given to theoretical biology, biochemistry and recent advances in biology. Students will be assigned additional reading as prescribed by the instructor.

Text—BIOLOGY (4th edition), Villee.

NOTE: This course is for Arts students who intend to finish their degree at Queen's University and who intend to take additional biology courses at Queen's. Grade XIII biology does **not** substitute for this course.

Lectures and laboratory hours to be announced.

BOTANY 10

A survey of the plant kingdom with special emphasis on the morphology, taxonomy, physiology and ecology of seed plants. Laboratory exercises include a systematic study of the more important members of the plant kingdom.

Text—to be announced.

Biology 10 may be required as a prerequisite if the student intends to proceed to Queen's University.

Lectures, 2 hours per week; laboratory, 3 hours per week.

BOTANY 20

An introductory course on the morphology and ecology of plants.

Plant taxonomy; plant geography; ecological factors important in plant distribution. Emphasis is given to the flora of Northwestern Ontario.

Students registering in this course are required to make a collection of plants as prescribed by the instructor.

Texts—PLANTS AND ENVIRONMENT; Daubenmire.

Methods of vegetation study; Phillips.

Lectures, 2 hours per week; laboratory, 3 hours per week.

CHEMISTRY 1A

A general course in chemistry stressing atomic structure, the gas laws, liquids and solids, equilibrium, ionization and hydrogen ion concentration. Particular emphasis is given to the chemistry involved in industrial processes.

Text—THE ESSENTIALS OF CHEMISTRY; Graham and Cragg; COLLEGE CHEMISTRY LABORATORY MANUAL; Watt and Morgan.

CHEMISTRY 10

An introductory course in physical and inorganic chemistry with special attention to the laws and theory of phase, equilibrium, ionization, atomic structure and thermochemistry.

Text—AN INTRODUCTION TO THE PRINCIPLES OF CHEMISTRY; Cragg and Graham.

Lectures, 2 hours per week.

CHEMISTRY 11

A laboratory and problems course to be taken in conjunction with Chemistry 10. The experiments illustrate topics covered in the lecture course. Elementary qualitative and quantitative analysis procedures are included.

Text—To be announced.

Problems, 1 hour per week; laboratory, 3 hours per week.

CHEMISTRY 12

An introductory course on the chemistry of carbon; structure, nomenclature, preparation, reactions and industrial uses of the important aliphatic compounds.

Text—CHEMICAL PROPERTIES OF ORGANIC COMPOUNDS; Marvell and Logan.

Lectures, 2 hours per week second term; laboratory, 2 hours per week second term.

CHEMISTRY 21

Organic Chemistry. An introductory course in the chemistry of the compounds of carbon. A study of the aliphatic and aromatic compounds. Chemistry 10 pre-requisite.

Lectures, 2 hours per week; laboratory, 3 hours per week.

CHEMISTRY 20—Analytical Chemistry

An elementary course designed to illustrate the theories and procedures in Qualitative and Quantitative analysis.

Text—SEMIMICRO QUALITATIVE ANALYSIS; Curtman (Macmillan).

Reference texts—ANALYTICAL CHEMISTRY, Vol. 1; Treadwell and Hall (Wiley).

CALCULATIONS OF QUALITATIVE ANALYSIS; Engelder (Wiley). PROCEDURES AND PROBLEMS IN QUANTITATIVE ANALYSIS; Dorrance (Technical Supplies).

Lectures, 2 hours per week; laboratory, 6 hours per week. Chemistry 10 pre-requisite.

CHEMISTRY 100

An introductory course in physical chemistry especially designed for students in first year Applied Science. The course covers the gas laws, liquid and solid state equilibrium and mass action, solution and ionization, hydrogen ion concentration thermochemistry, and atomic structure.

Text—AN INTRODUCTION TO THE PRINCIPLES OF CHEMISTRY; Cragg and Graham.

Lectures, 2 hours per week.

CHEMISTRY 101

A laboratory and problems' course to be taken in conjunction with Chemistry 100. The experiments illustrate topics covered in the lecture course. Elementary qualitative and quantitative analysis procedures are included.

Text—To be announced.

Lectures, 1 hour per week; laboratory, 3 hours per week.

COMMERCE 10

Elements of Accounting—An introductory study of the principles and practice of accounting.

Text—ACCOUNTING PRINCIPLES AND PRACTICE; Fenney and Miller.

Lectures, 3 hours per week.

CRUISING AND PHOTOGRAMMETRY 2

Forest type mapping from aerial photographs, cruise of an area using systematic and random sampling methods. Compilation of data obtained.

Lectures, 1 hour per week; laboratory and field, 5 hours per week.

DESCRIPTIVE DENDROLOGY 1 AND 10

A systematic identification of the important forest trees of Northwestern Ontario in natural and cultivated condition, supplemented by classroom study of the identifying features of the remaining important forest trees of Canada.

Text—To be announced.

Field and laboratory, 3 hours per week.

DESCRIPTIVE GEOMETRY 2 AND 100

Instruction and practice in orthographic and oblique projections, solutions of straight line and plane problems.

Text—APPLIED DESCRIPTIVE GEOMETRY; Warner.

Lectures, 1 hour per week; laboratory, solution of problems during drawing periods.

DESIGN

Sketching, perspective, shades and shadows, colour; design elements and principles; design and presentation of simpler architectural problems.

Lectures, 2 hours per week.

DRAFTING 1

The knowledge and skills involved in architectural working drawings and details; reference to building by-laws, standard handbooks and trade literature.

Text—To be announced.

Lecture, 1 hour per week; laboratory, 5 hours per week.

ECONOMICS 10

An introduction to economics. The elementary economic concepts; production, exchange, consumption and distribution of wealth; money and banking, business cycle, full employment policies; labour problems, public finance, international trade.

Text—ECONOMICS; Paul A. Samuelson.

Lectures, 3 hours per week.

ECONOMICS 20

World economic history, with special emphasis on the economic history of Europe and its impact on the economic development of North America.

Texts—ECONOMIC HISTORY OF EUROPE; Heaton. THE AMERICAN ECONOMY; R. O. Patten.

ENGINEERING 1

Introductory course on engineering materials, their properties and uses. A short study of soils and their effect on foundations. Sampling methods for soils and aggregates. Structural methods for steel, reinforced concrete and timber.

Lectures and laboratory, 3 hours per week.

ENGINEERING DRAWING 1

Introduction and practice in the use of standard instruments, lettering, dimensioning, mechanical drafting.

Text: FUNDAMENTALS OF ENGINEERING DRAWING; French and Vierck.

Engineering and Architectural Lettering, H. E. Grant.

Lectures and laboratory, 3 hours per week.

ENGINEERING DRAWING 2

Continuation of Engineering Drawing 1. Architectural Drafting, piping, graphic statics, solution of descriptive geometry problems.

Laboratory, 3 hours per week.

ENGINEERING DRAWING 100

Orthographic projection, freehand drawing, lettering, mechanical drawing, dimensioning problems in descriptive geometry.

Text: ENGINEERING DRAWING (9th Edition; French and Vierck.

Lettering Exercises, Svensen and Street.

Drafting Problem Layouts, Series C.

Engineering and Architectural Lettering, H. E. Grant.

Lectures and laboratory, 4 hours first term, 6 hours second term.

ENGINEERING ESTIMATING 2

Elementary course in estimating, statistical study, operational management, controls equipment economics and construction machinery.

Text—To be announced.

Lectures, 2 hours per week.

ENGLISH 1

Prose composition, with parallel reading.

Texts—WRITER'S GUIDE AND INDEX TO ENGLISH, P. G. Perrin; TYPES OF LITERATURE, F. Connolly. Each student must possess a satisfactory dictionary.

Lectures, 2 hours per week.

ENGLISH 2

Advanced factual communication: business and industrial writing and speaking, with occasional reading in literature.

Texts—REPORT WRITING, C. G. Gaum; THE ELEMENTS OF STYLE, W. Strunk, Jr.; TYPES OF LITERATURE, F. Connolly. Each student must possess a satisfactory dictionary.

Lectures, 1 hour per week.

ENGLISH 10

Survey of English Literature. A study of selections from the major English writers, Chaucer to Yeats. Each student must possess a satisfactory dictionary and a satisfactory composition text. Composition is a part of the course and essays will be assigned throughout the year. This course is a prerequisite for advanced English courses.

Text—MAJOR BRITISH WRITERS, 2 vol., G. B. Harrison, ed.
Lectures, 3 hours per week, assigned tutorials.

ENGLISH 20

Survey of American Literature. A study of selections from the major American writers, Taylor and Edwards to Frost and Eliot. Essays will be assigned throughout the year.

Texts—MAIN CURRENTS IN AMERICAN THOUGHT, V. Parrington; MAJOR AMERICAN WRITERS, 2 vol., H. M. Jones, ed.
Lectures, 3 hours per week.

ENGLISH 21

English Literature of the Nineteenth Century. A study of the major works of representative Romantic and Victorian writers. Essays will be assigned throughout the year.

Texts—GUIDE THROUGH THE ROMANTIC MOVEMENT, E. Bernbaum;
VICTORIAN ENGLAND: PORTRAIT OF AN AGE, G. M. Young.
Lectures, 3 hours per week.

ENGLISH 22

English Literature of the Neo-Classical and Romantic Periods. A study of the major works of representative Neo-classical and Romantic writers. Essays will be assigned throughout the year.

Text—To be announced.
Lectures, 3 hours per week.

ENGLISH 100

Advanced prose composition, including letter writing, report writing, public speaking. During the year students will read at least one novel, one biography, one play, and a selection of essays, short stories and poems.

Lectures, 2 hours per week.

FOREST FIRE CONTROL 1

Methods used in the prevention, detection and suppression of forest fires.
Lectures, 1 hour per week, second term.

FOREST MENSURATION 1 AND 10

Principles and practice of timber estimating.
Lectures, 1 hour per week; laboratory, 3 hours per week.

FOREST UTILIZATION

A general survey of logging methods and equipment including operational planning and supervision. Visits to local wood-using industries and guest lectures supplement the course content.

FRENCH 10

This course is designed to give a general survey of French literature, and to afford practice in French grammar and French composition. Representative French texts are studied.

Texts—FRENCH COMPOSITION AND REFERENCE GRAMMAR; Fraser, Square and Parker. LE DOUBLE MORT DE FREDERIC BELOT; Claude Aveline. FRANCE DE NOS JOURS; Carlut-Bree. LA TERRE QUI MEURT; Bazin. FRENCH POETRY; Forrest.

Lectures, 3 hours per week.

FRENCH 20

The prerequisite is French 10. Study of the characteristic French literature of 17th to the 20th century.

Texts—LE CID; Corneille. L'AVARE; Moliere. LES FABLES; La Fontaine. LETTRES CHOISIES; Voltaire. LE BARBIER DE SEVILLE; Beaumarchais. LES FLEURS DU MAL; Baudelaire. CONFESSIONS; Rousseau. OEUVRES POETIQUES; Hugo. EUGENIE GRANDET; Balzac. LE ROUGE ET NOIR; Stendhal. LES MAINS SALES; Sartre. LA PESTE; Camus.

Lectures, 3 hours per week.

FRENCH 21

The prerequisite is French 10. This is a course on the French novel.

Texts—LA PRINCESSE DE CLEVES; La Fayette. ADOLPHE; Constant. LE ROUGE ET LE NOIR; Stendhal. EUGENIE GRANDET; Balzac. MADAME BOVARY; Flaubert. LES FAUX MONNAYEURS; Gide. LA PESTE; Camus. LES LIAISONS DANGEREUSES; Laclos.

Lectures, 3 hours per week.

FRENCH 22

Modern French Drama:

Rostand: Cyrano de Bergerac
C Claudel: L'annonce faite a Marie
Pagnol: Topaze
Giraudoux: La guerre de Troie n'aura pas lieu
Anouilh: Antigone
Puccini: The French Theatre since 1930
Beckett: En attendant Godot
Romains: Cromedeyre-le-veil.

GEOLOGY 1

Elementary, physical and historical geology; exploration and prospecting.

Lectures, 2 hours per week; laboratory, 2 hours per week, second term.

GEOLOGY 2

A general introductory course with emphasis on the development and modification of soils and land forms; dam sites, gravel deposits and road materials; relation of rocks and forest types. Laboratory work consists of identification of common rocks and minerals and map interpretation.

Text—To be announced.

Lectures, 3 hours per week; laboratory, 2 hours per week.

GEOLOGY 2A

Petrology, Structural, Economic, and Precambrian Geology. A study of rock types and geological structures together with an introduction to economic geology and mineral deposits. The relationship of the foregoing to the Precambrian periods receives greatest emphasis. Map reading and hand specimen determinations comprise the laboratory work.

Text—Selected references.

Lectures, 3 hours per week; laboratory, 2 hours per week.

GEOLOGY 2B

Exploration. A study of modern exploration methods including application of geophysical and geological methods. diamond drilling, interpretation of results and evaluation of mining properties.

Text—Selected references.

Lectures, 1 hour per week.

GEOLOGY 10

An introductory course in Physical and Historical Geology; deals with physiographic features, internal geological processes, history of the earth and fossils. The laboratory periods deal with study and examination of common rocks, fossils, geological maps and models.

Text—OUTLINE OF GEOLOGY; Longwell, Knopf and Flint.

Lectures, 2 hours per week; laboratory, 2 hours per week second term.

GEOLOGY 100

Elementary general Geology; geological principles, methods and applications; physiography and climatology. General and descriptive mineralogy and petrology.

Text—OUTLINE OF GEOLOGY; Longwell, Knopf and Flint.

Lectures, 2 hours per week; laboratory, 2 hours per week second term.

HISTORY 10

An historical introduction to contemporary Europe; a survey of European history from the 4th century to the present.

Texts—A HISTORY OF CIVILIZATION; 2nd Ed., 2 Vols.; Brinton, Christopher and Wolff. RAND McNALLY ABRIDGED HISTORICAL ATLAS; Palmer.

Lectures, 3 hours per week.

HISTORY 21

Canadian history to the present.

Text—COLONY TO NATION; Lower.

Lectures, 3 hours per week.

HISTORY 20

A survey of the history of Great Britain from the Anglo-Saxons to the present.

Text—To be announced.

Lectures, 3 hours per week.

HYDRAULICS 1

Pumps and pumping, flow in pipes under pressure, flow in partially full pipes; pressure, velocity, flow in canals and ditches, weirs, orifices, small dams.

Text—To be announced.

INSTRUMENTATION

A descriptive course dealing with the instruments used in mechanical and thermal measurements.

No text.

Lectures, 1 hour per week.

INTRODUCTION TO FORESTRY 10

Description of the forest regions of Canada. Discussion of the ranking of Canada's forest resources in the world's forest, their importance to the people socially, industrially and economically. Brief account of the forest industries. Explanatory treatment of the major field of forestry; relationships of the various courses of the curriculum to these.

Lectures, 1 hour per week.

ITALIAN 10

Lectures on modern Italy, Italian literature and composition.

Texts—I PROMESSI SPOSI; Manzoni. POETI IIRICI MODERNI E CONTEMPORANEI; Giuseppe de Robertis. COSI SE VIPARE; Pirandello. ITALIAN REVIEW GRAMMAR AND COMPOSITION; Cioffari.

Lectures, 3 hours per week.

LATIN 10

Translation and prose composition.

Texts—ODES HORACE, Book 3; Catiline, Sallust. LEWIS AND SHORT'S LATIN DICTIONARY. ALLEN GREENOUGH'S NEW LATIN GRAMMAR. WILKIN'S ROMAN LITERATURE.

Exercises in Latin prose and composition will be assigned.

Lectures, 3 hours per week.

LATIN 20

Vergil. Grammar.

Text Book: P. Vergili Maronis Opera—Sidgwick.

Lectures, 3 hours per week.

MATHEMATICS 1A

Computations with approximate numbers; use of slide rule; logarithms; functions and their graphs; variation; solution of equations with applications to formulae and problems; analytic geometry of straight line and circle; mensuration of areas and volumes.

Text—To be announced.

Lectures, 3 hours per week.

MATHEMATICS 1B

Plane Trigonometry—Trigonometric ratios, solution of triangles, trigonometric identities.

Text—PLANE TRIGONOMETRY, 4th Ed.; Sparks and Rees.

Lectures, 2 hours per week.

MATHEMATICS 2A

Calculus—Differentiation and integration of algebraic, trigonometric, exponential, and logarithmic functions. Applications to problems in geometry, mensuration, mechanics, etc.

Text—ANALYTIC GEOMETRY AND CALCULUS; Juzli.

Lectures, 3 hours per week.

MATHEMATICS 2B

Further work on selective first year topics and an introduction to statistics.

MATHEMATICS 10

Algebra—Computations with approximate numbers; logarithms; complex numbers; solution of equations; infinite series; determinants. Solid Geometry and Mensuration. Spherical Trigonometry—solutions of spherical triangles with applications. Analytic Geometry—the general conics; polar coordinates; lines, planes, and quadric surfaces in solid geometry.

Texts—BASIC MATHEMATICS FOR ENGINEERS; Wood. ANALYTIC GEOMETRY; Middlemiss.

Lectures, 3 hours per week.

MATHEMATICS 11

Calculus—Differentiation and integration of algebraic, trigonometric, exponential, and logarithmic functions. Application to problems in geometry, mensuration, mechanics, etc.

Text—CALCULUS; Smith, Salkover & Justice.

Lectures, 3 hours per week.

MATHEMATICS 12

Mathematics of Finance—A review of business arithmetic and an introduction to the theory of interest and bond values.

Text—To be announced.

Lectures, 2 hours per week.

MATHEMATICS 100

Algebra—Computations with approximate numbers; logarithms; complex numbers; solution of equations; infinite series; determinants. Solid Geometry and Mensuration. Spherical Trigonometry—solutions of spherical triangles with applications. Analytic Geometry—the general conics; polar coordinates; lines, planes, and quadric surfaces in solid geometry.

Text—BASIC MATHEMATICS FOR ENGINEERS; Wood. ANALYTIC GEOMETRY; Middlemiss.

Lectures, 3 hours per week.

MATHEMATICS 101

Calculus—Differentiation and integration of algebraic, trigonometric, exponential, and logarithmic functions. Applications to problems in geometry, mensuration, mechanics, etc.

Text—CALCULUS; Smith, Salkover and Justice.

Lectures, 3 hours per week.

MINERALOGY 1

Elementary Mineralogy.... crystallography, detailed physical and chemical properties, occurrences and uses of the important minerals; introduction to the study of rocks.

Text—DANA'S MANUAL OF MINERALOGY; Hurlbut.

Lectures, 1 hour per week; laboratory, 2 hours per week.

MINING 1

Principles of mining and history of mining. A study of sampling and related problems, ore reserve calculations, mining methods, explosives, rockburst problems, price cycle of metals; early history of the industry and its influence on Canadian mining; mining machinery.

Text—ELEMENTS OF MINING; Lewis.

Lectures, 2 hours per week; laboratory, 2 hours per week second term.

MINING 2

Mine plant and equipment, building materials and structures, electrical wiring, compressed air, hoists and cables, underground haulage, pumps, ventilation, safety, underground mining methods, shaft sinking. Various mining methods used in practice; mine evaluation and operation.

Text—Selected publications.

Lectures, 2 hours per week.

PHILOSOPHY 10—INTRODUCTION

A study of the traditional problems of philosophy through discussion of selected readings; formal logic and scientific method.

Texts—PHILOSOPHIC PROBLEMS; Mandelbaum, Gramlich, Anderson. PRACTICAL LOGIC; Beardsley.

PHILOSOPHY 20—HISTORY OF PHILOSOPHY

An analysis of philosophic thought from early Greeks to the nineteenth century.

Texts—THE REPUBLIC OF PLATO, Modern Library; Aristotle, SELECTIONS, Modern Library; Bacon, THE NEW ORGANON, Liberal Arts; Descartes, DISCOURSE ON METHOD, Liberal Arts; Locke, ESSAY CONCERNING HUMAN UNDERSTANDING, Gateway; Berkeley, A TREATISE CONCERNING THE PRINCIPLES OF HUMAN KNOWLEDGE, Liberal Arts; Hume, AN INQUIRY CONCERNING HUMAN UNDERSTANDING, Liberal Arts; Kant, CRITIQUE OF PURE REASON, Random House.

PHILOSOPHY 21—PHILOSOPHIC SYSTEMS

A critical study of systems of philosophy; idealism, naturalism, realism, existentialism, organism, pragmatism, logical positivism.

Texts—Collingwood, THE IDEA OF NATURE; Kaufmann, EXISTENTIALISM; Santayana, SCEPTICISM AND ANIMAL FAITH; Ayer, LANGUAGE, TRUTH AND LOGIC; Whitehead, ADVENTURES OF IDEAS; Lewis, MIND AND THE WORLD ORDER, with other selected readings.

PHYSICS 1

Mechanics and Heat—Vectors, uniform motion, accelerated motion, mechanical energy, simple machines, power; effects of heat, calorimetry and change of state, work and heat engines, transfer of heat.

Text—MECHANICAL ENGINEERING SCIENCE; J. D. Walker.

Lectures, 3 hours per week; laboratory, 3 hours per week second term.

PHYSICS 2

Electricity, electric charge, magnetism, current and resistance, electro-magnetism, alternating currents, elements of electrical machinery.

Text—INTRODUCTION TO ELECTRIC CIRCUITS; Jackson.

Lectures, 2 hours per week.

PHYSICS 10

Mechanics: (a) Statics—fundamental principles of the laws of equilibrium of forces; (b) Dynamics—equations of linear and angular motion; force, motion, and momentum; work, energy, and machines; simple harmonic motion; wave motion; (c) elasticity; mechanics of liquids and gases. Applications of these topics.

Text—PHYSICS PRINCIPLES; Ballard, Slack, Hausmann.

Lectures, 2 hours per week.

Problems, 1 hour per week.

PHYSICS 11

Heat, Electricity and Magnetism, Light, Sound.

Text—PHYSICS PRINCIPLES; Ballard, Slack, Hausmann.

Lectures, 2 hours per week.

PHYSICS 12

Laboratory experiments and problems to supplement Physics 10 and 11.
3 hours per week.

PHYSICS 13

A further course in general physics, including some work on modern physics, for those entering an honours Math or Physics Course.

Text—Resnick and Halliday.

Lectures, 2 hours per week.

PHYSICS 100

Mechanics: (a) Statics—fundamental principles of the laws of equilibrium of forces; applications to the determination of stresses in simple trusses, shear and bending moments in beams; (b) Dynamics—equations of linear and angular motion; force, motion, and momentum; work, energy, and machines; simple harmonic motion; wave motion; (c) elasticity; mechanics of liquids and gases. Application of these topics.

Text—ELEMENTS OF PHYSICS; Shortley Williams.

Lectures, 2 hours per week.

Problems, 1 hour per week.

PHYSICS 101

Heat, Electricity and Magnetism, Light, Sound.

Text—ELEMENTS OF PHYSICS; Shortley Williams.

Lectures, 2 hours per week.

PHYSICS 102

Laboratory experiments and problems to supplement Physics 100 and 101.
3 hours per week.

POLITICAL SCIENCE 10

A comparative study of the structure of the governments of Great Britain, the United States and Canada.

Text—DEMOCRATIC GOVERNMENT AND POLITICS; Corry.

Lectures, 3 hours per week.

POLITICAL SCIENCE 20

Elements of Political Theory—an analysis of the concepts of the major political thinkers from Plato to the present.

Lectures, 3 hours per week.

POLITICAL SCIENCE 21

Great Britain and the Commonwealth—a study of the politics, governmental processes, and political relationship of the United Kingdom and Commonwealth countries.

Lectures, 3 hours per week.

PSYCHOLOGY 10

An introductory study of experience and behaviour from the viewpoint of natural science.

Texts — PSYCHOLOGY AND LIFE; Ruch, 4th ed. WORKING WITH PSYCHOLOGY; Ruch and Warren.

Lectures, 3 hours per week.

PSYCHOLOGY 20

Child Psychology; Child development; learning and personality development. The child in and without the family. Methods of studying children. Practical work will be arranged.

Texts—To be announced.

Lectures, 3 hours per week.

SEMINAR

A period during which the students discuss technical and business problems, largely under their own supervision. A portion of the time is given to guest speakers on special subjects.

SILVICULTURE 2

Classification of Ontario forest development and influence of environmental factors. Silvicultural characteristics of Ontario's tree species; nursery practice; silvicultural cutting methods. Identification of minor forest flora of Northwestern Ontario; forest soils.

Lectures, 1 hour per week.

STRENGTH OF MATERIALS 1

Statics, forces, moments, simple framed structures.

Strength of materials, stress, strain, elasticity, tension and shear. Simple torsion and bending.

STRENGTH OF MATERIALS 2

Stress, strain, modulus of elasticity, tension and shear, torsion, bending moments and shearing force, deflection of beams and continuous beams, strut theory, combined stresses.

Text book—Mechanics of Materials; Lauxson and Cose.

Lectures, 2 hours per week 1st term.

STRUCTURES 2

Elementary structures; design of simple structures in steel and reinforced concrete, connections, application of Strength of Materials.

Text—AISC HANDBOOK; SIMPLIFIED DESIGN OF STRUCTURAL STEEL; Parker.

Lectures, 2 hours per week 2nd term; laboratory, 3 hours per week 2nd term.

SURVEYING 1

Instruction and practice in the general principles of surveying with the chain, compass, transit and level with special attention to co-ordinate surveying.

Text—MEASUREMENTS FOR ENGINEERING AND OTHER SURVEYS; Smirnoff.

Lectures, 1 hour per week; field, 3 hours per week first term.

SURVEYING 2

Topographic and route survey, use of aerial photographs in surveying, profile levelling, cross sections, curves, grades, earthwork, building layout, determination of standards in road construction, elementary economics for private roads, determination of costs, organization of road construction.

Text—SURVEYING; Breed and Bone.

Lectures, 2 hours per week; field and drafting room, 3 hours per week.

SURVEYING 100

A first course in general principles of surveying with emphasis on precision and common errors; use, adjustment and care of the chain, the compass, the transit, and the level; special attention to co-ordinate surveying. Practice work in the field and drafting rooms is very important.

Text—SURVEYING; Breed and Bone.

Lectures, 1 hour per week; field, 3 hours per week first term.

SURVEY FIELD SCHOOL

All students are required to take this class before graduating. The course provides practice in the field technique studied in surveying. Efficient and careful handling of instruments and note-keeping are stressed. The course will be held during the week following the final examinations in April.

TESTING LABORATORY 2

Methods of soil tests, gravel sampling and testing, cement and concrete testing.
2 hours per week.

THESIS

Each mining student is required to prepare a report on a subject approved by the Mining Department. It is intended to test his ability to make an independent investigation of a practical problem.

WOOD TECHNOLOGY 2

Physical and mechanical properties of wood; wood seasoning and elements of lumber grading. Instruction and practice in systematic identification of various woods in log and sawn state. Wood preservation.

Lectures, 1 hour per week; laboratory, 3 hours per week.

ZOOLOGY 10

A survey of the animal kingdom with special emphasis on the form and function of representative invertebrate and vertebrate types. Laboratory exercises will supplement lecture material and include dissection of some of the more important representatives of the animal kingdom.

Text—GENERAL ZOOLOGY; Storer and Usinger.

Biology 1 may be required as a prerequisite if the student does not have standing in Grade XIII Biology.

Lectures, 2 hours per week.

Laboratory, 3 hours per week.

Scholarships and Prizes

Entrance Scholarships

BOARD OF GOVERNORS BURSARY—TECHNOLOGY DIVISION

Value \$500. Available annually to a student entering the first year of one of the Technology Courses. Preference will be given to non-residents of the Lakehead. Payment will be made in four equal instalments; upon registration, and on November 1st, January 2nd and March 1st, providing a satisfactory record is maintained by the student.

BOARD OF GOVERNORS SCHOLARSHIP—UNIVERSITY DIVISION

Value \$1,300. Awarded on the basis of academic standing and financial need to a student entering the first year of one of the University Division Courses at Lakehead College. Payment of \$100 will be made upon registration at the College. Subsequent payment of \$400 per year will be made upon satisfactory completion of each year of study up to a maximum of three years.

A second scholarship with a value of \$500 will be awarded, if merited, to a student from outside the Lakehead, on the basis of Grade XIII standing. Payment will be made in two equal instalments—at registration and on January 15. If a student fails to maintain satisfactory standing, the second instalment may be cancelled.

Application for these scholarships should be submitted to Lakehead College by May 31.

DEPARTMENT OF PUBLIC HEALTH BURSARIES

A limited number of Department of Public Health Bursaries are available to students who plan to take Medical Technology. These bursaries pay \$25.00 per month to students who live in Fort William and Port Arthur and \$75.00 per month to students whose homes are outside the Lakehead.

The Department of Public Health also pays student fees for bursary holders. The students are employed in Public Health laboratories during the summer. Students who accept bursaries must agree to work for the Department of Public Health for a specified period after graduation.

Further details may be obtained from The Director, Division of Laboratories, Department of Health, 360 Christie St., Toronto 4, Ontario.

DOMINION-PROVINCIAL STUDENT-AID BURSARIES

University Bursaries, Type A, and Technical Institute Bursaries, Type A, are available to students entering the College. The University Bursaries have a value of \$250 for residents of Fort William and Port Arthur and vicinity, and of \$500 for non-residents of this area.

Information and application forms may be obtained from High School principals. Application forms for University Bursaries must be submitted before June 18, for Technical Institute Bursaries before June 30.

LIONS BURSARY

Value \$1,300. Established by the Fort William and Port Arthur Branch of the Lions Club. Awarded to a student entering the University Division of the Lakehead College by a committee consisting of the Principal and two representatives from the Lions Club. One Hundred Dollars will be paid when the student registers at Lakehead College and Four Hundred Dollars for each of three years following, provided that certain prescribed scholastic standards are maintained.

PRINCESS BEATRICE CHAPTER I.O.D.E. SCHOLARSHIP

Value \$50. Awarded annually to a student having the highest academic standing from either the Port Arthur Collegiate Institute or the Hillcrest High School, Port Arthur.

STUDENTS' COUNCIL OF THE COLLEGIATE INSTITUTE, PORT ARTHUR

Prize value \$25 in books. Awarded to the student graduating from the Collegiate Institute, Port Arthur, with highest standing and entering one of the university courses.

Undergraduate Scholarships and Prizes

ABITIBI POWER & PAPER CO. LTD. SCHOLARSHIP

Value \$250. Awarded to a student showing general proficiency in his study of Science or Forestry, and who upon leaving the Lakehead College has demonstrated his intention to further pursue his studies by enrolling in a recognized Canadian university.

BETA SIGMA PHI, XI UPSILON CHAPTER SCHOLARSHIP

Value \$100. To be awarded to a deserving student of Lakehead College who is continuing his or her education at a university or technological institute.

J. P. BICKELL FOUNDATION SCHOLARSHIP IN MINING

Two scholarships. Value \$200 and \$150. Awarded to the students ranking first and second in first year Mining Technology.

CANADIAN INSTITUTE OF FORESTRY SCHOLARSHIP

Established by the Northwestern Ontario Section and awarded to a student in Forestry who plans to continue his education in Forestry. Value \$100. Awarded by the Scholarship Committee on the basis of (a) class standing, (b) financial need, (c) permanent residence in Northwestern Ontario.

CANADIAN LEGION, PORT ARTHUR BRANCH, SCHOLARSHIP

Value \$100. Awarded only to a student who (a) is a member, or is eligible to become a member, of the Canadian Legion, (b) is the son or daughter of a person referred to in (a) above, (c) has a place of residence in Port Arthur or is the son or daughter of a member of the Port Arthur Branch. The scholarship is awarded on the basis of academic standing and is tenable only by a student who continues to a school of higher education.

CANADIAN LEGION, FORT WILLIAM BRANCH, SCHOLARSHIP

Value \$100. Established by the Canadian Legion, B.E.S.L., Fort William Branch, and awarded on the basis of scholastic ability and general proficiency. Applicant must be a resident of Fort William or district and a member of the Canadian Legion, or a son or daughter of a member. The scholarship is tenable only by a student who proceeds to University from the College.

CITY OF FORT WILLIAM SCHOLARSHIP

Value \$200. Established by the Corporation of the City of Fort William and awarded to the student with the highest academic standing in the first year of Arts. The scholarship is tenable only by students who continue studies at a recognized university.

CITY OF PORT ARTHUR SCHOLARSHIP

Value \$400. Established by the Corporation of the City of Port Arthur and awarded to a student at the end of the first year in Applied Science or University Forestry on the basis of academic standing. This scholarship is tenable only by students who continue studies at a recognized university.

EVA CLENDINNEN MEMORIAL SCHOLARSHIP

Value \$150. Established by the University Women's Club of Thunder Bay. To be awarded to the girl with the highest standing (minimum second-class honours) who is leaving first year at Lakehead College to go on to any other accredited College.

J. A. CARTY SCHOLARSHIP

Value \$100. Awarded on the basis of academic standing to a deserving student in either the Technology or the University Division.

P. H. B. DAWSON LOAN FUND

This fund was established by Mr. Dawson to assist worthy students from Northwestern Ontario in obtaining post secondary school education. Loans are limited to \$400 per year.

Further details and application forms may be obtained from Mr. Donald Haggard, Business Administrator, Fort William Board of Education, 400 Catherine Street, Fort William, Ont.

DOMINION-PROVINCIAL STUDENT-AID BURSARIES (University Division)

University Bursaries, Type B, are available to students who are enrolled in full-time courses in a Canadian university, provided that the applicant has been enrolled for at least one year in his course of study and is proceeding towards a degree other than a degree in Divinity. The applicant must have obtained at least second class standing (66%) on the last series of examinations held immediately prior to the filing of the application. These bursaries have a value of \$250 for resident and \$500 for non-residents of the municipality in which the university is situated.

Forms of application may be obtained at the university attended by the applicant after he has enrolled therein.

DOMINION-PROVINCIAL STUDENT-AID BURSARIES (University Division)

University Bursaries, Type B, are available to students who are enrolled in full-time courses in a Canadian university, provided that the applicant has been enrolled for at least one year in his course of study and is proceeding towards a degree other than a degree in Divinity. The applicant must have obtained at least second class standing (66%) on the last series of examinations held immediately prior to the filing of the application. These bursaries have a value of \$250 for resident and \$500 for non-residents of the municipality in which the university is situated.

Forms of application may be obtained at the university attended by the applicant after he has enrolled therein.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO SCHOLARSHIP

Value \$300. Awarded to a student in the first year of the Applied Science Course having regard to both need and academic standing. The scholarship is tenable by a student who continues his studies in a recognized university.

LADIES AUXILIARY UNITED BROTHERHOOD OF CARPENTERS AND JOINERS OF AMERICA SCHOLARSHIP

Value \$100. Available only to children of the members of either the Union Local No. 1669 or Local No. 740 of the Ladies Auxiliary. To be awarded on the basis of scholastic standing to a student who is continuing his education.

LADY GREY CHAPTER I.O.D.E. SCHOLARSHIP

Value \$100. Awarded to a graduate of any one of the three secondary schools in Fort William who has completed the first year in the University Division at the Lakehead College. The scholarship is awarded on the basis of academic standing and a minimum of second class honours is required. Female students are given preference, but if no one is eligible the scholarship will be awarded to a male student.

LAKEHEAD BUILDERS EXCHANGE SCHOLARSHIP

Value \$100. Awarded to a student in first year Engineering Technology on the basis of academic standing. It is understood that the student will continue his studies in second year.

LAKEHEAD ELECTRICAL ASSOCIATION SCHOLARSHIP

Value \$100. Awarded to a deserving student who is continuing his or her education the following year.

LAKE SUPERIOR CHAPTER IMPERIAL ORDER DAUGHTERS OF THE EMPIRE BURSARY

Value \$300. Awarded on the basis of academic standing and financial need to a student who is leaving Lakehead College and continuing his studies at another university.

JESSIE MACKEY MEMORIAL SCHOLARSHIP

Value \$25. Founded by Mary Isabel Mackey in memory of Jessie Mackey and awarded annually to the woman student who, at the end of the first year, attains the highest aggregate marks in one of the following combinations of subjects: English and Philosophy, English and History, Physics and Chemistry, Mathematics and Physics, Mathematics and Chemistry, or French and English. Students who already have received a scholarship in excess of \$75 are not eligible.

MARATHON PAPER MILLS OF CANADA SCHOLARSHIP

Value \$200. Established by the Marathon Paper Mills of Canada Limited and awarded to the student in first-year Forest Technology who has attained the highest combined aggregate standing in Surveying, Drawing, Descriptive Dendrology and Forest Mensuration. The scholarship is tenable only by students who continue in the second year.

PETER McKELLAR SPENCE MEMORIAL SCHOLARSHIP

Value \$200. To be awarded to a student graduating from Lakehead College who is continuing his education at a university. Those going on in the Sciences, particularly Medicine, will be given preference.

NATIONAL COUNCIL OF JEWISH WOMEN SCHOLARSHIP

Value \$25. Awarded to the student with the highest standing in Psychology or Philosophy.

NORTHWESTERN ONTARIO TIMBER OPERATORS' ASSOC. SCHOLARSHIP

Value \$200. Established by the Northwestern Ontario Timber Operators' Association and awarded to the student in the first year of Forest Technology who has attained satisfactory scholastic standing and who shows need of financial assistance. The scholarship is tenable only by students who continue in the second year.

NORTHWESTERN ONTARIO LIFE UNDERWRITERS ASSOCIATION BURSARY

Value \$100. To be awarded to residents of Northwestern Ontario to assist them in continuing their education at university.

THUNDER BAY PHARMACEUTICAL ASSOCIATION BURSARY

Awarded to a student on the basis of his standing and need on the completion of his first year in Pharmacy. Value \$200. The student must have resided for at least two years in Northwestern Ontario (Hornepayne to Manitoba boundary).

PORT ARTHUR CHAMBER OF COMMERCE BURSARY

Value \$200. Established by the Port Arthur Chamber of Commerce and awarded to a graduate of a Port Arthur Secondary School and Lakehead College who is proceeding to a further education at a university or institute of technology outside of the Lakehead. The bursary is awarded on the basis of academic standing and financial need.

PORT ARTHUR LODGE No. 244, I.O.O.F.

Value \$100. Students in all faculties are eligible provided that they continue their studies. The scholarship is awarded on the basis of academic standing.

STUDENTS' COUNCIL OF THE COLLEGIATE INSTITUTE, PORT ARTHUR

Prize value \$25 in books. Awarded to the student graduating from the Collegiate Institute, Port Arthur, with highest standing and entering one of the university courses.

WOMEN'S ASSOCIATION OF THE MINING INDUSTRY OF CANADA

Value \$300. Awarded to a student who graduates with the highest standing from Lakehead College and who is going on to continue his studies in a Canadian University in the field of mining or geology. A minimum of second class honours in all subjects is required.