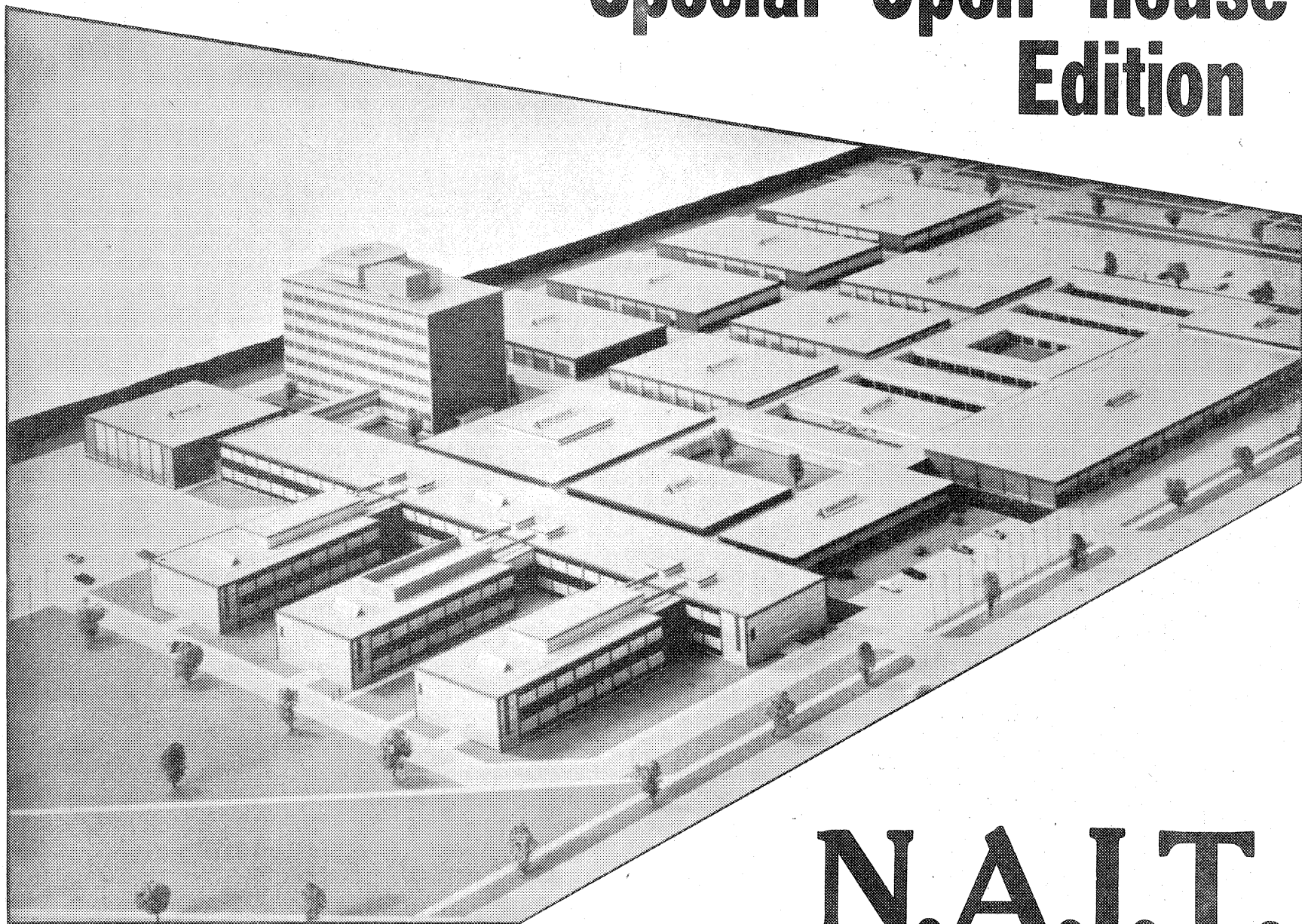




## Special Open House Edition



# N.A.I.T.

# Open House '65

**The Students of NAIT welcome you to the Institute - Enjoy your visit!**

**WE HOPE THAT YOU WILL ENJOY THE DISPLAYS AND WILL GATHER AN UNDERSTANDING OF THE INSTITUTE AND THE PURPOSE IT SERVES.**

**Please visit the displays; tour guides and staff will be located throughout the institute for your convenience to give directions and answer questions as need be.**

**The NUGGET has printed a map (middle page) of the Institute to aid you in finding your way around. Along with the map are articles on most of the Technologies and other subjects taught here. The purpose of these reports is to give you an understanding of the courses offered here at NAIT.**

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## EDITORIAL

### THE GROWING NEED FOR TECHNICIANS

The purpose of this special open house issue of the NAIT Nugget is to give prospective students and the general public an insight to the courses offered at NAIT.

It is hoped that after you have toured the Institute and have seen the many displays and exhibits you will have a better understanding of NAIT'S purpose and the students purpose for being here.

Perhaps many of you have, and do, associate NAIT with the apprenticeship pattern. This is not entirely true. In the beginning the term "technical school" was associated with welders, brick layers, mechanics and other facets of the apprenticeship program. But today in this age of advancing science and technology the technical institute plays another roll; that of educating technicians in fields of science, engineering and business to meet today's increasing technical advances.

Although technical graduates do not acquire the broad education that University students receive, their technical ability is definitely needed to fill the widening gap between the engineer and the tradesman. It has been proven by industries in the U.S.A. that an economical working balance of five technicians to one engineer, produces the utmost in all phases of business and industry. This fact is now being realized in Canada and the need for trained technicians is growing rapidly with this concept.

On behalf of the staff and students, we now invite you to look around and observe the displays. Tour Guides and staff are available throughout the Institute to answer questions and give direction as need be.

## Thank you!

The editors of the NUGGET would like to thank all those who worked with us or aided us in the publication of this special issue.

To those who wrote articles, to those who typed, and to those members of the administration and instructing staff who lent a helping hand, our thanks goes out to you!

# THE INSTITUTE

The Northern Alberta Institute of Technology is located on an excellent 26 acre site next to the Municipal Airport in the City of Edmonton. The Institute is modern in design with up-to-date equipment ready to serve the ever-increasing needs of the students of the province.

The Institute contains an area of almost 19 acres of floor space in 8 buildings, essentially under one roof; including 155 shops and laboratories, 101 classrooms, 203 offices, and numerous service areas such as a cafeteria, library, gymnasium, auditorium, student areas, power plant, mechanical equipment rooms, caretaker areas, and storage rooms.

The Industrial Building, Mortar Trades Building, Welding Building and the new Service Annex Building contain classrooms, shops, labs, offices, student areas, and service areas. These facilities are used primarily in the training of apprentices in 20 different trades.

The Service Building basically contains the power plant, and several maintenance shops required for operation of the Institute.

The Central Building houses the General Administrative Offices, McNally Library, Bookstore, Auditorium, and Food Service area. The cafeteria and dining services provide reasonably priced meals for students and staff, and provides facilities for training of Cooks, Bakers, and Waiters. The dining facilities are capable of handling approximately 1,100 persons at one time.

The Technical Building basically a two storey, three floor structure with Gymnasium and three intersecting wings, Medical Wing, Science Wing and Electronics Wing, contains classrooms, labs, offices, student areas, service areas, and a little Theatre and Bowling Lanes. The facilities provide instructional space primarily for Technology Students but also includes some Vocational instructional areas. An Industrial Arts Lab, under the direction of the Faculty of Education, University of Alberta, is also located in this area.

The new Tower Building which is presently under construction, will be an eight storey, nine floor structure, containing classrooms, labs, offices, student areas, and service areas. The facilities will provide instructional space primarily for Business Education and Vocational Students, but will also accommodate several related subject courses for the Technology Students. One of the features of the building will be the eight floor glass surrounded Tower Lounge, serving as a versatile study and lunch area for approximately 250 persons, also providing an impressive panoramic view of the City.

The complete facilities have been designed to accommodate a maximum of 4,300 students at any one time and a possible 3,000 at night school. It is expected that by 1966 up to 10,000 students will attend the school annually in day and night courses.



W. A. B. SAUNDERS  
Principal of NAIT

## Principal's Welcome

Welcome to the Northern Alberta Institute of Technology. This is your Institute. We hope that by the time you have concluded your tour you will be as proud of this Institute as we are.

We hope you will ask the students to explain the things of interest to you - the laboratories and shops - the equipment - where the courses fit into the industrial picture - the kinds of jobs they will go to, etc.

Many nice things have been said about this Institute, but the hard cold facts of reality demand that we must produce trained people acceptable to the needs of industry, or we have failed.

Technical education today is a far cry from that offered thirty years ago. The level of education, the advances in the technologies, the sophistication of modern industrial equipment - all these things demand a new top grade technician.

Today the tradesman and technician are honoured and respected members of the community. They are different, their training is different, their contribution to society is different. They are technicians and tradesmen by choice, their abilities are very special abilities channeled in a specific direction.

We hope you will learn more about them tonight.

W. A. B. SAUNDERS  
Principal  
NORTHERN ALBERTA  
INSTITUTE OF TECHNOLOGY

## The Objectives of the Northern Alberta Institute of Technology

by L. Thompson

### THE TECHNICAL INSTITUTE

The society which forges ahead to a plateau, only then to stop, is the society doomed. Change is the key; evolutionary change in every segment of the economy. Society may pause on the plateau to recoup its strength but each time it must start out anew climbing to higher and higher levels. Such has been the case with technical training in Canada, and especially in Alberta.

To many parents, the term "technical school" retains the connotation of those in existence some 35 years ago. This is just not true. Technical schools have kept pace with the new industrial revolution sweeping the land. In other words, they too have evolved.

Vocational schools of 1965 are monuments of integration, combining academic and technical training, well balanced to provide a thorough grounding for the skilled worker. Graduates of vocational high schools may advance to on-campus graduate training or directly enter industry.

The Technical Institutes of Alberta stand on a level above that of the vocational schools. Among the myriad of courses offered at the vocational schools, five can be articulated with courses offered at the Northern Alberta Insti-

tute of Technology. These include electricity and electronics, drafting, machine shop and carpentry.

These factors point up a vital distinction between Alberta's two technical institutes and the existing vocational schools. The Institutes are designed primarily for post high school education. The NAIT student's training begins where the high school left off. The exceptions include heavy duty, welding, construction, factory woodworking, radio, dental assistants, dietary service, office machine repair, commercial cooking and commercial sign writing. Prerequisites for entry into these technologies vary between grades 9 and 11.

### THE TECHNOLOGIST

A technologist is an assistant to a professional. He is the person who takes over the profession's routine but complex tasks, thus freeing the professional for more intricate work - research, for example, where his invaluable and more extensive years of university and post graduate training can be better utilized.

When unemployment declined after the commencement of the Second World War, a demand began to arise for technologists. This demand has never abated. Rather, it has continued to increase and today stands the levels unprecedented in history. The answer to this overwhelming need in Northern and Central Alberta was the construction of the Institute of Technology in Edmonton. At this ultra-modern centre, training in numerous fields is provided with graduates in all fields such as engineering, medical laboratory and business welcomed into industry.

### THE APPRENTICE

The Apprenticeship Division of the Institute also plays a vital role in the Province's industrial scheme. The division here in Edmonton, and its counterpart at SAIT in Calgary, correspond to Trade Training Schools in other provinces. To gain admission one must have grade 10 (grade 9 is acceptable in some instances) and be a registered apprentice. Of the twenty-four apprenticeable trade programs available in the province, twenty-two are offered at the Institute. Each apprentice undertakes a period of theoretical and trades training, followed by on-the-job training at the apprentice's place of employment. As a general rule, the length of training in the Institute is eight weeks per year for four years. Details of admission are handled by the Apprenticeship Board, Department of Labour, Edmonton.

### EVENING DIVISION

Main objective of the Evening Division of NAIT is to provide the means for adults employed during the day to upgrade their qualifications - an essential requirement in the Canada of today. The trend has been, and doubtless will continue, to be courses of practical nature rather than hobby types. This is evidenced by the inclusion of such fields of study as mathematics, electronics, drafting and many, many more.

The Northern Alberta Institute of Technology is providing a vital cog in the wheel of automation presently turning the Alberta wheels of Industry.

## Student Services

The Student Services Department is concerned with the promotion of student's learning, interests and overall well-being on both the curricular and extracurricular level. These aims are attained by way of five areas which make up the Student Services programme.

The first and only curricular area is the Physical Education programme which has the primary aim of developing a positive attitude towards active recreation as a means of organic maintenance throughout the student's adult life. This is accomplished by introducing the student to the skills and knowledge relating to a number of activities shown for their enjoyment and carry-over values. Our physical education programme is a steadily expanding one and as time passes we are getting closer to producing people prepared to cope with a society which is becoming leisure orientated and thus closer to obtaining another major goal of education, that of educating the "whole man".

The remaining areas of concern for Student Services are extra-curricular and encompass the following:

Intra-murals - which consist of an organized programme of competition between various departments of the school aimed at creating departmental esprit de corps and also acting as a laboratory where skills learned in the Physical Education programme may be practiced and perfected.

Inter-School Athletics - this serves as an outlet for participation by the more highly skilled individuals through competitions in the Western Inter-College Conference. This Conference is made up of the original charter members, Northern Alberta Institute of Technology, Camrose Lutheran College, Southern Alberta Institute of Technology, Mount Royal College and Lethbridge Junior College, with the future addition of several other junior college level institutions which have signified their intent to join next season.

Student Government - A very great deal of energy is devoted to the promotion of a dynamic, democratic student government on campus. Through this medium we hope to develop the skills, knowledge and attitudes of individual participation initiative and responsibility necessary for the operation of any democratic organization.

Special Interest Groups - these activities serve to initiate and develop interests which although not directly related to curricular offerings, may enhance future vocational pursuits or may add to the base of individual interests thus aiding in the development of a well-rounded citizen. Several of the more successful of these are the Newspaper, Yearbook and the Radio Broadcasting Club.

In summing up it might be said Student Services are primarily concerned with the development of personal qualities which will insure vocational and avocational success and happiness in our fast-paced modern society.

R. G. MEADUS  
Coordinator Student Services  
Director of Physical Education

## NAITSA's Invitation



BILL MILES  
President NAITSA

As president of the NAIT Student Association it gives me a great deal of pleasure to welcome you to the second annual "Open House".

To those of you who come as laymen we hope that you will gain some appreciation for the rapid advance of technology in its many varied fields.

To those of you who are presently working in some facet of the technologies represented here, we hope that you will be favorably impressed with the level of training offered by NAIT.

We hope that those of you who are seriously planning to attend the institute will take this opportunity to become aware of some of the curricular and extra-curricular activities of the institute. There will be a person on duty in the Students Executive Offices at E133 to explain our activities to you.

To all of you we wish a very pleasant journey through the exciting world of modern technology.

W. H. Miles  
President N. A. I. T. S. A.



## NAIT Radio



NAIT Radio is a separate area of student services, operated as a communications media for the administration and students of NAIT. The membership is composed of interested students from the various technical departments of the Northern Alberta Institute of Technology. Owing to the time and effort of these students, NAIT Radio has developed into the most effective communication media of the Technical Institute.

NAIT Radio broadcasts from 11:15 until 1:15 each and every school day. This programming is done through an extensive sound system that serves eight areas through the Master Control Room situated off the main Dining Room.

During Open House NAIT Radio will be operating from a remote Control Center in the main lobby. All programming will originate from this location. If you are seeking directions or wish to observe the Radio Club in action, drop by the Control Room or Operation Center in the main lobby and let us welcome you to NAIT.

## NAITSA

The Northern Alberta Institute of Technology Students' Association (NAITSA) incorporated under the Societies Act of Alberta was formed with the idea of planning and promoting students' affairs and activities in NAIT. It has an executive consisting of a: President, Vice-President, Treasurer, Secretary, Social Chairman, Men's Athletic Chairman and Ladies' Athletic Chairman. The executive is responsible for the overall operation of NAITSA with assistance from the co-ordinator of Students' Affairs.

The governing body of NAITSA is the NAITSA Council which consists of the Executive and a representative from each Course or Departmental Club. Other boards which plan and co-ordinate NAITSA activities are:

a) The Social Council which is responsible for the planning of Frosh Week which is held to introduce all first year students to life at NAIT. It also plans and runs the Queen Campaign and all allocates dances, which are held monthly, to the various clubs in the Institute.

b) The Athletic Board is responsible for the co-ordination and planning with the Physical Education Department of NAIT, the Intra-Mural and Extra-Mural programs.

The Intra-mural program is planned to enable all interested students to compete in a friendly but keen matter for points for the Aggregate Intra-mural trophy and for individual trophies in each sport which include: golf, cross country races, basketball, volleyball, bowling, and badminton. Wrestling is being introduced this year and should provide many grunts and groans for the muscle-bound students of NAIT.

Extra-mural competition is carried on in the Western Inter-College Conference which is made up of: NAIT, Southern Alberta Institute of Technology, Mount Royal College, Lethbridge Junior College, and Camrose Lutheran College. This league is being enlarged to include Red Deer Junior College and eventually all Institutes of Technology and Junior Colleges in Alberta and possibly Saskatchewan.

At present, men's basketball is the only sport played by all teams in the league. However, girls' basketball, volleyball, and hockey are going to be added next year.

Our teams play under the name of "NAIT Ookpiks" and have, so far, been as slow as that great bird of the North which is NAIT's mascot.

Funds to carry on the operation of these and other activities of NAITSA are obtained through a collection of \$17.00 from all students of NAIT. This money which totals \$22,000.00 this year is also used to finance the NAITSA yearbook "The Northern Torch", and "The Nugget", our newspaper.

These two publications along with NAIT Radio provide a means of communication for NAITSA and an outlet for the creative abilities of students.

All have been formed within the last two years and are now functioning fairly smoothly. However, all have staff shortages and can always use a helping hand.

As one can see NAITSA tries to fulfill the void between studying and classes for its members and promote rivalry among the various clubs in NAIT.

Don Kellner,  
Treasurer, NAITSA.

## Air Conditioning & Refrigeration

In recent years the term air conditioning has come into common use in every city and town in Canada and the United States. At one time the familiar saying "Everybody talks about the weather, but nobody does anything about it", was certainly true. Today it is no longer true, for air conditioning engineers, contractors and technicians are modifying indoor weather in every part of the country. Commercial buildings and the like are heated in winter and cooled in summer and made comfortable the year around by proper application of air conditioning and refrigeration principles and equipment.

Air conditioning and refrigeration like many other industries needs a great number of workers at the technical level. A graduate of the NAIT Air-conditioning and Refrigeration Technology may serve as an engineer's assistant to carry out the graduate engineer's ideas. His training includes drafting, selection of equipment, load calculation, etc. and thus would fill such positions well.

Air conditioning and Refrigeration technicians may also be employed as operating and maintenance people to look after large and complex systems of large buildings. He may also enter the sales field either selling complete air conditioning and refrigeration jobs, or working with suppliers of Air conditioning and Refrigeration machinery and equipment. The sales field would include estimating. The NAIT graduate will have a wide field of employment to choose from.

The student will be taught basic refrigeration cycles, operational care of refrigeration and air conditioning hand tools. From this he will go on to the installation of single and multiple units which will lead into freezer calculation and selection of refrigeration equipment and controls.

In the air conditioning phase of the stu-



dent's training he will be given an understanding of the various systems; high and low velocity systems, temperature, humidity, and air purity, principles, etc., selection and operation of equipment and complete systems, construction and operation of electrical and pneumatic control systems.

Also the course includes subjects such as electrical machines and controls, starters, etc. which will be taken in the students electrical courses. Closely associated with the design of air conditioning equipment is drafting. Here the student will learn the basic principles of pre-

paring drawings, blueprint reading, pipe sketching, etc. Subjects such as Mathematics, English, and Physics are also included. Machine shop, sheet metal and welding courses are also taken by the student to familiarize the student with the operation of lathes, shapers, tools employed in sheet metal, oxy-acetylene and arc welding as it applies to the Air conditioning and Refrigeration field.

Advantages and disadvantages of various air conditioning layouts can be determined through experience where they would not be immediately obvious through classroom instruction.

Other test equipment provided in the lab for the use of students includes:

1. A Centrifugal Fan Test unit to determine proper fan characteristics.
2. A Centrifugal Pump Test unit to test water pump performances at various speeds.
3. A High Pressure Dual Duct test to determine air flow characteristics through diffusers.

Further refinements or possible additions to the Air conditioning lab facilities may be added for 1965-66 to allow the new students as much practical experience as possible.

## Business Education

by Richard Higham



### Business Administration

This program covers the basic principles of theory as well as some practical application of the basics of modern trade and commerce. It includes in its objectives to mature the student in his responsibilities towards his work and efficiency in carrying out those responsibilities. He is introduced to all the "shop talk" and commonly accepted means of carrying out business so that he can enter the business world with an exceptionally thorough knowledge of the fundamentals of business, thereby placing him in a position which assures him of faster promotion in his particular field. It is generally agreed that two years of training is the equivalent of six years of experience.

Students are encouraged to join the Business Education Society, a club which seeks to promote itself and good business practices by inviting speakers, and the use of films.

Employment opportunities on the completion of this course include positions with local and national firms engaged in both business and industry. The provincial and federal governments too are in need of personnel with this type of training.

The courses include such subjects as: personnel, statistics, accounting, auditing, finance, and office management.

### Distributive Technology

Rather closely allied with Business Administration is a two year course in Distributive Technology. This involves the distribution of the products of industry to the ultimate consumer, and therefore has wide employment possibilities, right from the industrial, to the wholesale, to direct selling and retailing, and the many branches of each of these. Employment could be in advertising, motor vehicles, real estates and insurance, finance, accounting, selling, transportation and public relations.

Subjects taken provide a general background of theory and practical application of skill and knowledge which can be applied to any of the above mentioned occupations.

Courses covered include such things as retailing, marketing, advertising, communications and accounting. A general course is taken the first year with a choice of three majors for the second year.

(continued on page 5)

(continued from page 4)

**Banking and Finance**

Canada needs bankers — right from clerks to managers.

With the growth in Canadian bank institutions young persons have been provided with an unequalled career with promotion opportunities at their best.

This course offers fundamental practices, procedures, and skills, in both classroom and laboratory studies. It provides a general knowledge of all types of banking methods so that the graduate can adopt to any one in a very short time. Students are taught the use of posting machines, proofing machines and sorters. Courses include typing, law, banking procedures, bookkeeping, English, credit and collections and public relations.

**Secretarial Technology**

This course is designed to give the student a high degree of advanced training, so that the graduate will be perfectly capable of a responsible position. Positions such as office managers, and supervisors and management assistants are common. The graduate (male or female) should be able to use sound judgement concerning company policy, exercise initiative, and work with very little direction.

Here again employment opportunities are vast and include positions with major industrial companies and department stores. A sample of the subjects taken include: math., office practice, shorthand, typing, communications, data processing, and accounting.

**Data Processing**

Data Processing in Canada is just in its infancy and is growing at a fantastic rate, leaving a great need for trained operators of computers and punched card data processing systems. Even the medium and small sized retail organizations are turning to the computer accounting and stock control systems. Sufficient data processing installations are presently in operation, with more being added yearly to more than adequately provide an expanding job opportunity for graduates of this course. Graduates could expect employment opportunities with retail organization such as department stores or accounting organizations or wholesalers and manufacturers as well as government departments.

Instruction is provided on the following machines: key punch, verifier, sorter, collator, accounting machine, reproducing punch and calculator and lectures in double entry book-keeping.

**Office Machine Repair**

This course provides a sound and thorough knowledge of the repairing of office machines such as typewriters, adding machines and calculators. It includes theory of operation and construction as well as laboratory work in practical repair. The student is provided with a foundation which can be more fully developed while in training, on more advanced equipment.

The one year course covers: basic type-writing theory, laboratory work, typing, math, electricity, English and record keeping.

## Chemical Laboratory Technology

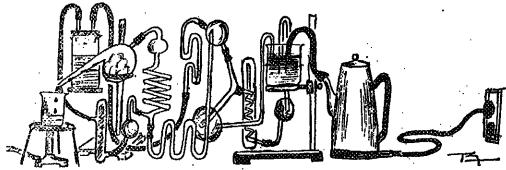
by Sharon Turner

Due to the rapid growth in Alberta of the petrochemicals industry, a demand for technicians has arisen. Chemical technicians are needed also to fill positions in other fields such as Steel Mills, Oil Refineries, Canneries, Pipe Mills, Fertilizer Producers, Mines and Meat Packing Plants. Government research requires technicians in organizations such as the University, The Research Council, The Atomic Energy Commission, and the Oil and Gas Conservation Board.

The starting salary of a Chemical Technician is around \$300-400 per month, depending upon the position and the employer's policy. Students are eligible for student membership in the Chemical Institute of Canada and upon

graduation, may write examinations to qualify for full professional membership.

Graduates of Chemical Technology will be qualified to do research, quality control and standard analysis. In research, developing new compounds and new methods of preparing compounds economically are the objectives. Quality control is the checking of various stages of production. Analysis is finding "what" and "how much" is in a product.



Courses taken in the first year are: Inorganic Chemistry, Oil Chemistry, Mathematics, Physics, English, Material Sampling and Testing and Drafting. Inorganic Chemistry covers laboratory techniques and analytical methods of testing as well as the theory behind the chemical reactions of inorganic compounds. Organic Chemistry includes with the basic theory, structure, and nomenclature (naming of compounds), the preparation, purification and testing of carbon compounds and synthesis.

Oil Chemistry is a study of petroleum products and in particular, gasolines, oils and lubricants. The uses and standardized ASTM tests of these products are covered.

Physics studies gas, matter, heat, mechanics and electrostatics. Mathematics consist of trigonometry, calculus and analytical geometry. Technical writing, research reports, and business English are the main aspects of English. The Drafting course deals with basic sketching; Materials deals with sampling techniques and non-destructive testing methods.

In addition to the regular 2nd year pattern there is available to Honors students a Research Program designed to offer a more enriched course. Both groups take in the second year: Instrumental Analysis, Organic Chemistry, Electronics, Physics, English, Stoichiometry and Chemical Statistics. Instrumental Analysis is the determination of compounds by the use of instruments. The 2nd year Organic Chemistry course covers the basic preparation of compounds using type reactions, and the structure of aromatic and heterocyclic compounds. Electronics consists of basic AC and DC circuitry, amplification and trouble shooting. Physics is a study of optics and nuclear reactions. Stoichiometry is the mathematics of chemistry such as the calculation of normality and molarity. Chemical Statistics covers the methods of gathering, sorting and presentation of data.

In addition to the forementioned courses, Research also takes glass blowing, dealing in repair of scientific equipment; Physical Chemistry, covering the application of gas laws, study of thermodynamics, and molecular structure; and a Calculus course.

This program provides a career with different scope than a University program. A chemical technician will be trained on a more practical line to enable him to assist a scientist as his extended hand.

The Chemistry display will be shown in four labs; G105, G107, G109 and G110, all located in the Science Wing (G Wing) on the main floor. On display are typical experiments and demonstrations that Chemical Technicians have to perform during their training program. Examples are Oil-Tests, Glass Blowing, High Vacuum Line, Instrumental Analysis, Organic distillation methods, analytical titrations, etc.

## Civil Technology

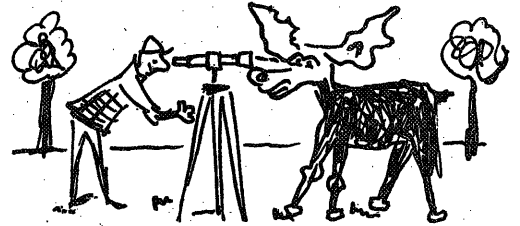
Civil Engineering Technology embraces work in the research, planning, construction and maintenance of a variety of engineering projects. This field includes the construction of buildings, highways, railroads, bridges, viaducts, dams, harbor facilities, irrigation and reclamation projects, water power development, city planning and similar projects, many of them of great size involving enormous expenditures.

A Civil Technology graduate may be em-

ployed as a surveyor, draftsman, estimator, water or sewage treatment operator, town works foreman, superintendent or inspector, or as an engineer assistant to the contractor or Civil Engineer. The graduate may also embark on a program to study for and write the examinations of the Alberta Association of Professional Engineers and so obtain certification as a Professional Engineer.

The courses offered provide the sound and broad basic training necessary to prepare a young man to enter any of many specialized fields, and with diligence and application to assume positions of considerable responsibility. The technician should be skilled in drafting, and should have an understanding of the properties and functions of construction materials and the ability to solve many of the problems of structural design. Training includes instructions in such subjects as strength of materials, structural design, engineering materials, highway and sanitary technology as well as related courses in Mathematics, Science, and English. These subjects provide the tools for the solution of many of the practical problems encountered in this field and provide the individual with a sound educational background.

In the modern world, technical knowledge and manipulative skills alone are not sufficient to assure success. To encourage the development of personal qualities such as integrity, dependability, initiative, co-operation, the ability to work with and for others, courtesy, etc., the Institute has a Students' Association under whose auspices many varied extra-curricular activities are organized. In addition the Students Services Department promotes the physical, moral, and mental wellbeing of students through participation in one or more of five athletic organizations



The Civil Engineering Technology Society is a departmental organization which compliments the above organizations and works in close co-operation with interested staff sponsors to foster professional growth, social activities, and athletics. The society sponsors and the members participate in such activities as inter-departmental basketball, volleyball, and bowling, organize industrial tours and an annual dance, actively participates in the queen contest, and wind up the year with a grand banquet and dance.

Dale James  
Roger LeBlanc

## Commercial Cooking Course

"But for life the universe were nothing and all that has life requires nourishment."

The above quotation is taken from one of Fannie Farmer's Cook Books. It very aptly introduces to us one of the oldest of human endeavours, the serving of food. A true art, cooking also makes a fascinating career. The time has come to foster the art and make more people aware of cooking as a career. Luckily there are people who are interested in cooking as an art and a career for the young and not so young, the people who operate the Food Services Department of NAIT. Individuals who are highly trained in their respective branch of food preparation and management be it bread, dessert or business math. They are passing their knowledge and skill on to the students who are taking the challenging Commercial Cooking Course.

Cooking as a business has been rapidly undergoing changes. Shorter working hours, labour saving devices, refrigeration, and scientific methods of food production have helped to take the drudgery out of the profession. Kitchen

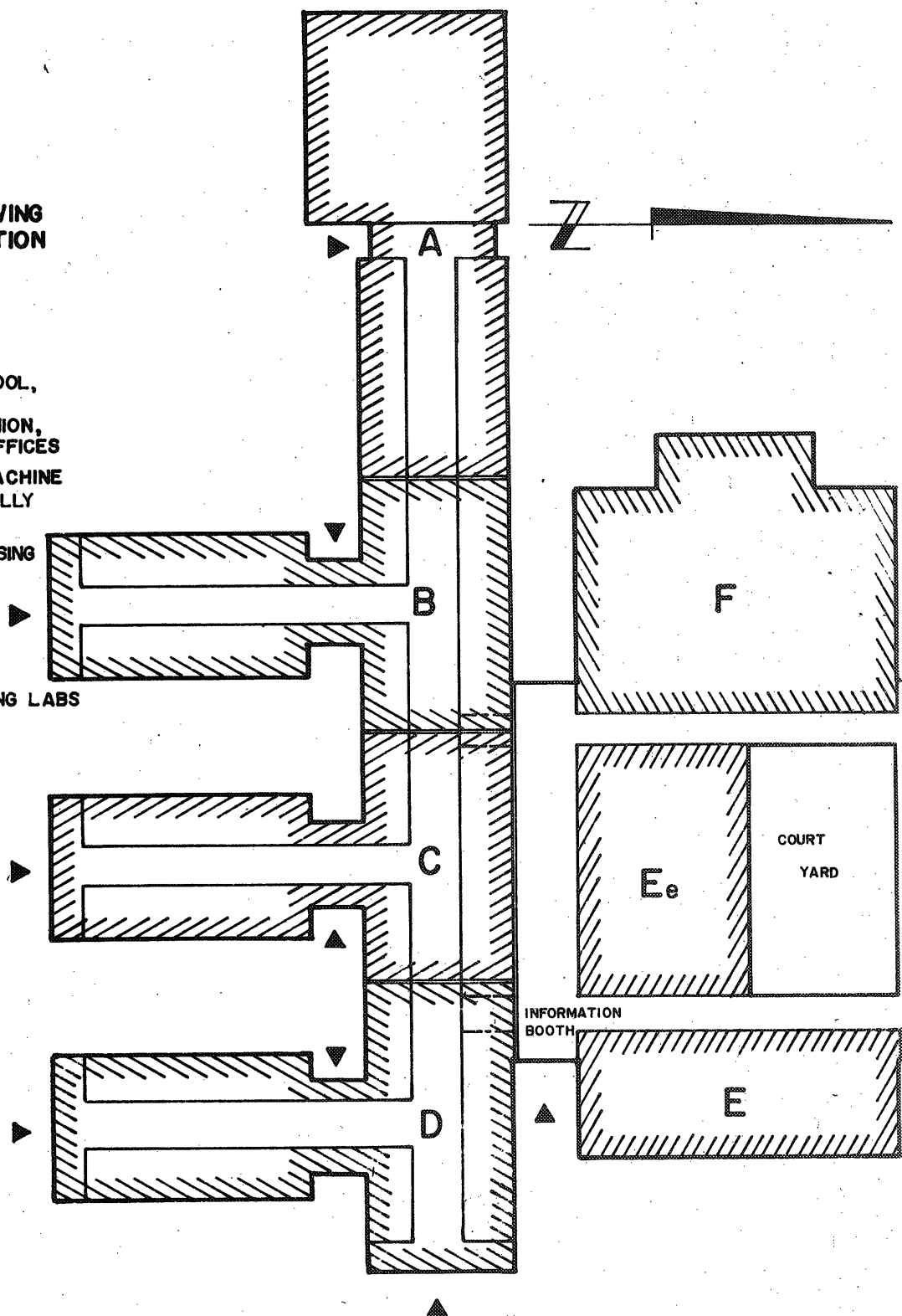
(continued on page 8)

# NORTHERN INSTITUTE OF

## COLOR GUIDE

ALL HALL WAYS ARE MARKED WITH DIFFERENT COLORS INDICATING THE DIRECTION OR SECTION OF THE DIFFERENT TECHNOLOGYS. BY SIMPLY FOLLOWING THESE COLORS, ONE CAN FIND THE DESIRED SECTION HE WISHES TO VISIT.

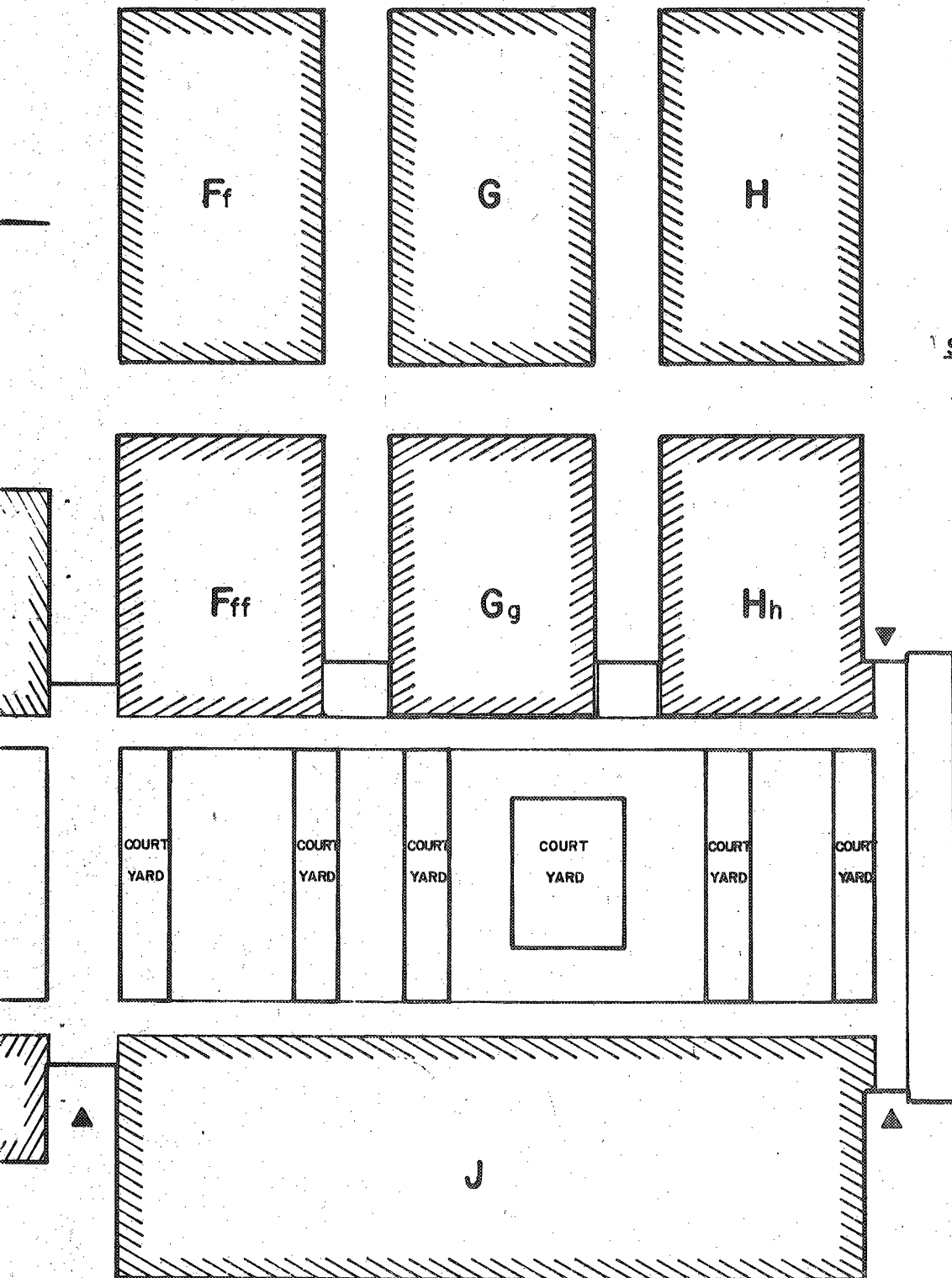
<u>SECTION</u>	<u>COLOR</u>	<u>SECTION CONTAINS</u>
A	ORANGE	SECOND FLOOR—BUSINESS, BARBAR SCHOOL, BEAUTY CULTURE MAIN FLOOR—GYMNASIUM, STUDENTS UNION, NEWSPAPER, YEARBOOK OFFICES BASEMENT FLOOR—LOCKERS, OFFICE MACHINE REPAIRS, BOWLING ALLY
B	TURQUOISE	SECOND FLOOR—ELECTRONICS LABS BUSINESS, DATA PROCESSING MAIN FLOOR—ELECTRONICS LABS BASEMENT FLOOR—PHOTOGRAPHY
C	YELLOW	SECOND FLOOR—PHYSICS LABS MAIN FLOOR—CHEMISTRY LABS BASEMENT FLOOR—MATERIALS TESTING LABS
D	BROWN	SECOND FLOOR—DENTAL LABS DRAFTING ARCHITECTURE MAIN FLOOR—MEDICAL LABS BASEMENT FLOOR—X-RAY LABS



PRINCESS  
ELIZABETH  
AVENUE

106 STREET

# OF ALBERTA TECHNOLOGY



SECTION	COLOR	SECTION CONTAINS
E	LIGHT BLUE	GENERAL OFFICES
E <sub>o</sub>	LIGHT BLUE	AUDITORIUM & LIBRARY
F	PURPLE	FOOD SERVICES
F <sub>f</sub>	PURPLE	SERVICE BUILDING
F <sub>ff</sub>	PURPLE	ELECTRICAL
G	GREEN	WELDING
G <sub>o</sub>	GREEN	MACHINE SHOP & PIPE TRADES
H	DARK BLUE	MORTAR TRADES PAINT TRADES PLASTER TRADE SOILS LAB
H <sub>h</sub>	DARK BLUE	SHEET METAL & WOODWORKING
J	RED	HEAVY DUTY, DIESEL, AUTOMOTIVES

ENTRANCES ►



(continued from page 5)

equipment at NAIT is ultra modern. Students have an opportunity to try out the latest in cooking apparatus.



#### Objectives of the Commercial Cooking Course:

1. To train people to prepare food on a large scale.
2. To buy and manage supplies so that the place of business may operate at a profit.
3. To serve food that is attractive and wholesome.
4. To observe the importance of cleanliness and sanitation.
5. To promote good public relations.

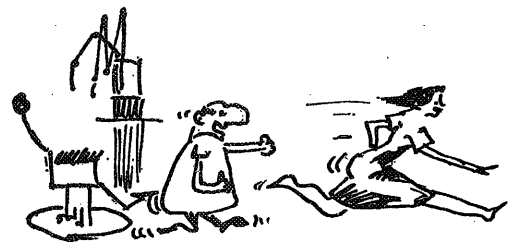
The course requires two years to complete. The first year of study acquaints the students with the basic principles of commercial cooking and the basic theory of food. The second year of study is an extension of the first giving a broader and deeper knowledge of the profession. All phases of the art are explored, advance techniques in presenting food, decorating, pastry, practice etc., are all studied and practiced.

Operating a restaurant, hotel, exclusive club or just serving hamburgers includes more than the serving of food. Good management is a must in to-day's business world. Business training is included in the Commercial Cooking Course at NAIT. A knowledge of business math, bookkeeping, letter writing and record keeping is an essential part of the course.

Graduate students from this course have a worth while knowledge of the cooking profession. Knowledge and training they can offer to employers in the business of feeding the public. A good basic knowledge to begin specializing in a particular area of the business and there are many. Food serving, management, buying, demonstrating, selling, ice carving, pastry specialists etc.

Job opportunities are varied: restaurants, hotels, department stores, clubs, hospitals, camps, catering firms are all looking for people trained in quantity cooking. You can get that training at NAIT!

## Dental Assisting



by Sandra Albert & Pamela Bigg

The Dental Assisting Program consists of a ten-month course which trains girls to enter a profession offering many varied and interesting fields of work. Not only may the Dental Assistant assist in operations and office administration for the general practitioner, but also for specialists, clinics, hospitals, or the Armed Forces' dental corps.

There are three main divisions in our training. We have six months of classes in basic sciences and techniques, an externship period which we spend in private offices for a month and the U of A clinic for a month and a final session of review and business courses here at Tech. The order and time length of these periods may be changed if necessary. Extra

courses, such as First Aid and self-improvement are included. It is through the contributions of several professional people that we acquire basic knowledge and experience to enable us to adjust easily to different offices and doctors.

Apart from the prerequisites listed, it has been found especially helpful to have had some high school science courses. We refer to two main technical and a few business textbooks which we buy ourselves. The former describe our duties and give helpful suggestions for carrying them out. We are trained to handle and sterilize instruments, care for equipment, prepare materials, develop x-rays, chart, and carry out the Administrative work. Probably the most interesting and rewarding is being able to comfort and educate one's patients. The duties, as well as the hours and pay vary according to the policy of the employer. (We might add here that to aid us in obtaining a job in the area in which we would like to work, the National Employment Service has a representative who tries to arrange placement upon graduation.) It should be realized that there are disadvantages to every profession, but if a girl is really enthusiastic about her work, she will find enough advantages to keep her happy. It is not likely a Dental Assistant will become easily bored, but her objective is to have the Patience and concern to treat each visitor with friendliness, and perhaps firmness too. The result is a deep personal satisfaction.

While we train we wear complete white uniforms which we buy as a class, and a lab coat which is bought separately.

Out of classes we can attend a Dental Club comprising Dental Assistants, Mechanics, and Lab Techs. The day we look forward to is graduation in mid-May. It is then we receive our cap bands and class pin along with a diploma which we seek to deserve and be proud of in the business world..

Dental assisting is rapidly becoming one of the most highly regarded professions for ladies of all ages. There is a demand for efficient and trained people, and it is with this in mind that our program is designed. To those contemplating this course, we wish you the best that you may complete an enjoyable year of studies, and enter the dental field with confidence.

## Dietary Service Technology

On September 16, 1964, a new technology course was started at the Northern Alberta Institute of Technology. It was developed to alleviate the shortage of trained personnel assumed capable of responsible positions in food service departments.

This course is actually a two year program with the first eight months spent at NAIT, in lectures and laboratory sessions, then four months of practical experience in a hospital dietary department, and another lecture and laboratory session at NAIT, and a final three months of hospital training. The last three months of training, after the second session at NAIT will be in hospitals throughout the province of Alberta.

The NAIT program for the first year includes lectures and labs in Food and Food Preparation, tours to various institutions, nutrition, ethics, basic psychology, general chemistry, theory and labs, institutional management, business courses, and physical education. Personal management, menu planning, modifications of the normal diet, food service planning, food purchasing and costing, will be part of the second year Technology program. This will include dietary department organization, main kitchen experience, clerical duties, money management, portion control, staff records, interviewing applicants, scheduling jobs, special diet planning, geriatrics, and countless other interesting jobs and experiences. This interesting summer training will give the Dietary Service training very helpful practical training

in each and every section of a hospital or institution that they are going to be working in later.

The main objectives of the Dietary Service Technology are:

1. To train Dietary Service Technicians for supervisory positions in dietary departments of hospitals and in commercial institutions.
2. To attract and assist capable individuals in attaining a higher level of employment in hospitals and to improve their qualifications.
3. To provide Dietary Service Technicians for institutions which are unable to obtain the services of a registered Dietitian.

The entrance requirements for this course are 67 high school credits with a B in English and the enrolment is limited to twenty-four students each year.



This course at NAIT is the door to a new, interesting, fascinating, and challenging career as a Dietary Service Technician.

## Exploration Technology

#### What is Exploration Technology?

Up to the present, exploration technologists have been trained on the job by mining and oil companies. However, many have lacked adequate training in geology, geophysics and electronics. Recent advances in exploration techniques and use of increasingly complex equipment, together with the introduction of electronic computers for the analysis of exploration problems, makes proper academic and practical pre-job training essential.

The location of new mineral deposits, upon which the economy of our country and the improvement of living standards throughout the world is dependent, present a tremendous challenge both for the future, and opens a field of unlimited potential for those trained in exploration techniques.

Today's explorationist has the opportunity to enter such allied areas as space exploration and oceanography, as well as earth science areas such as soil studies in the fields of agriculture and forestry. The exploration industry is still young, with great areas of our country, as well as the rest of the world, barely investigated. As minerals continue to become harder to find, the need for scientifically trained explorationists will increase.

The explorationist uses basic scientific principles to study the earth's crust and tries to find new mineral producing areas by making surveys which may take months or years to complete. As a result of the study, reports and maps are prepared summarizing all the data gathered and if conditions appear favorable, the explorationist will recommend that the project go ahead. If the conclusions drawn from the data are correct, an oil or gas field may be found, or a mine may go into production.

#### Where does he work?

For the Exploration technician adventure comes ready-made. During his career he may visit many parts of Canada and of the world. The present trend is towards the completion of much of the interpretation and office work in larger towns or centers.

The choice of assignments in many different countries rest almost entirely with the technician. Usually the experienced explorationist who is interested in foreign service, and who requests it, can obtain positions with Canadian companies operating in other countries.

(continued on page 9)



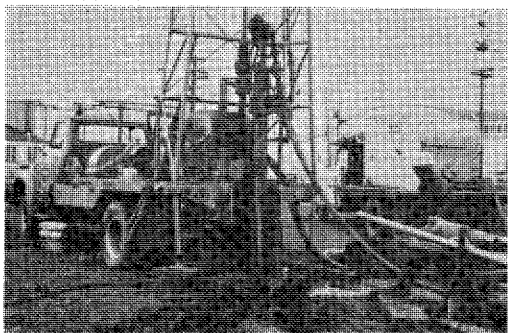
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**Do you want to be an explorationist?**

How would you answer the following?

YES	NO	Do you like your high school science courses?
		Are you a better-than-average student?
		Do you enjoy outdoor activities such as camping, fishing, hiking, etc?
		Can you work with and get along with your fellow students?
		Are you a good organizer?
		Do you enjoy travelling?
		Can you "take it" when conditions get tough?
		Do you think you would enjoy exploration work?

If you can give a honest YES to most of these questions, then you have gone a long way towards indicating that you are suited for a ca-



reer in exploration. This is not enough however! Rigorous training lies ahead and you should plan to give your interest a fair trial. In any event, many of the subjects you will study in your course will be valuable to you whatever profession you finally enter. The foundation for this course should be established in your high school work and you should note that a strong scientific background would be a tremendous asset for anyone contemplating exploration as a career.

## Forest Technology

The forest technology course was instigated and planned with co-operation of industry and the federal and provincial governments. The rising need for personnel trained in practices of forestry with a view to multiple use management has been noted for some time. It was with the view in mind that the advisory board decided upon the curriculum now being offered at the Institute.

To many the idea of a forester is a man alone off in the wild communing with nature and living more or less in the way of nature. While this may have been true in the days of Robin Hood, the forester of today is responsible for an increasingly complex job.

Subjects offered at the Institute give a firm basis upon which to build for the purposes of entering into the field of forest and wildlife



resource management. As our society becomes more complex and the desire for natural recreation areas increase, the forester is involved in this phase of forest utilization, where areas are set aside for camping, and picnicing, other areas for hunting and still other areas for active logging or pulpmill cutting.

The range of courses involved in the forestry curriculum may, to the casual observer seem

unrelated and obscure, for instance the study of zoology and geology would appear unrelated in forestry work. The wildlife of our forests is as much a natural resource as are the trees that grow in it or the rivers that run through it. The complex life of a forest encompasses so many varied aspects, that the range of study must of necessity be complex.

In addition to resource management and planning there is the major role of protection of the resources from fire, insect infestation or disease attack. A major part of the foresters job is surrounded by basic protection and protection planning practices, these in turn preclude the knowledge of how to build roads, bridges, lookouts and cabins so that facilities are available to carry out the job of protecting the forest. Thus the curriculum must provide for the requirements of construction subjects, surveying, and maintenance of heavy equipment.

The study of forestry in all its facets would take many more years than are available to the Institute, as a result the present forest technology course has been tailored to meet a general requirement and provide the basis upon which to build.

## Gas Technology

The production and sales of natural gas is one of Canada's largest and most rapidly expanding industries. The sales of natural gas in Canada has grown from 1222 million cubic feet per day during 1960 to approximately 2470 million cubic feet per day during 1963 — a two-fold increase in three years! Indications are that sales will continue to grow to a figure in excess of 5000 million cubic feet per day in 1970.

In 1962, there were sixty-six natural gas processing plants in operation in Canada, the total value of which was estimated at \$254 million. Industry experts estimate that the total value of gas processing plants in Canada will nearly double to a figure of \$490 million by 1970.

Canada has managed to maintain a supply balance of natural gas reserves in excess of forty years since the commencement of large scale sales of gas. Indications are that this balance of reserves to sales will be maintained or exceeded for the next ten years. Barring the complete disuse of natural gas as a primary energy source, the foregoing figures indicate that the employment of gas technicians is assured in excess of fifty years hence.

An informal inquiry by the Canadian Petroleum Association indicated that the natural gas industry will be able to absorb approximately fifteen gas technicians per year for the next ten years.

### What is a gas technician?

The gas technician is an engineering technician.

He is the liaison or connecting link between the engineer and the skilled tradesman.

His work is in the same general area as that of the engineer.

He translates creative ideas into new equipment, products or processes.

He is familiar with the tools, equipment and procedures used by the skilled worker and understands the basic principles of Mathematics, Physics, Chemistry, and Engineering.

He is specialized in a rather limited area and is more concerned with the practical application of established principles and theories than with the development of the principles and theory themselves.

### What jobs will a gas technician do?

It is expected that a graduate gas technician would commence his employment in the field, in a gas plant, or in a sales training program, in the manner of most new gas industry employees. However, his technical institute training would permit him to advance, as experience and capability warranted, to positions such as field foreman, shift foreman, engineers assistant, or sales technician.

A graduate gas technician might expect to be involved in any or all of the following functions:

1. Operation and maintenance of gas field production equipment.
2. Testing of gas wells.
3. Operation and maintenance of gas gathering and transmission systems.
4. Operation and maintenance of gas treating, dehydration, measuring, and processing equipment in field or plant.
5. Testing of gas processing equipment in the field or plant.
6. Sales and servicing of gas field and plant equipment.
7. Assisting gas engineers in any of the following:
  - a) Planning and execution of engineering and construction activities.
  - b) Developing cost reduction program.
  - c) Preparing engineering estimates, recommendations and justifications.
  - d) Preparation of operating reports.
  - e) Training and safety of field and plant personnel.
  - f) Design and construction of gas processing equipment.
  - g) Calculation of flow rates, open-flow potentials and gas reserves.

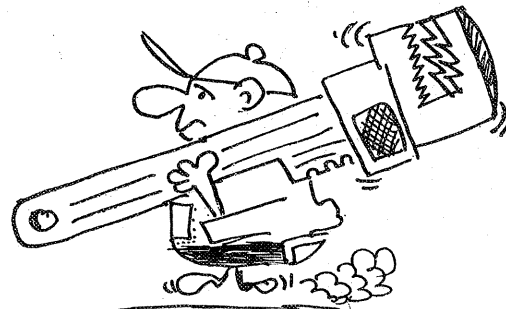
## Heavy Duty Equipment Technology

Because of a great demand for employees in the Heavy Duty Diesel trade today, a technology course was devised to train men in specialized fields of Diesel Equipment. Graduates of this course who have gained their Technicians and Journeymens status will find themselves able to qualify for such specific positions as maintenance foremen, service supervisors, sales technicians, industrial plant educators and many others. A man of such status falls between the engineer and mechanic doing work accordingly. Being a new course, it is hoped much public interest will be gained in following years.

### Testimonial

B. S. Samba, Gambia,  
W. Africa

Good communications are one of the essentials of any industrially improving town, city, or province or country. Magnificent airports and seaports are as much needed as all-weather roads within the country. To build and



to operate efficiently these communication facilities, heavy diesel mechanics and technicians must be trained efficiently. The Northern Alberta Institute of Technology gives an up-to-date and expert training to the interested scholar, in the heavy duty technology course.

Covering a period of two years this course could be divided into three sections, (a) Theory, (b) Practical and (c) Administration. The theory and practical sections are however co-related and consist of lectures and shop work ranging from the basics of tools and equipment, to tractor dismantling and rebuilding. Welding, an important factor in salvage work is also included in the two above. Since, however, the technician may be promoted to an administrative post, their sections acquaint the student with the problems of present day administration and management.

## Industrial Production Technology

This is an age where mechanical and electronic devices of great complexity are making their entry into every phase of industry. At the same time, competition is stimulating a keen awareness of the need for increased productivity and an understanding of the methods by which this may be accomplished.

Production Technology is basically the application of science towards this end and concerns itself with the planning and control of production as well as the manufacturing processes themselves. Planning and control involve the analysis of a product to determine manufacturers' procedures, and schedules within the limitations of the organization and so, depend for their effectiveness upon a detailed knowledge of machinery and equipment, plant layout, manufacturing processes, company organization and many associated matters.

It has been decided to accept the metal-working industry as the medium for instruction in Production Technology not only because so much of the nation's potential is applied in this direction but also because of the variety of machine tools, each with its own characteristics, which are accommodated conveniently within the confines of an educational institution.

The student has an opportunity to operate and, what is perhaps more important, to investigate for efficiency and capacity a wide range of equipment such as may be found in local plants which depend for their existence upon machinery, welding, or other metal work. In order to prepare him more fully to meet the demands of industry, his lab and shop training will be balanced by adequate instruction in metallurgy, estimating, machine design, work study, metrology, thermodynamics, and other technical subjects of similar nature.

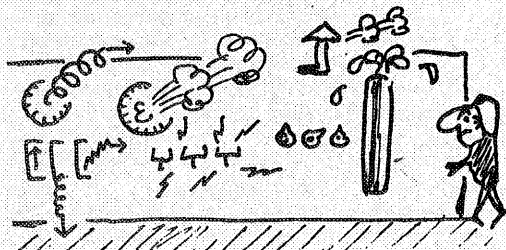
The graduate can expect employment in the fields of production control, estimating sales planning, mechanical design and inspection to name but a few and, with the experience that only such employment can provide, should enjoy the prospects of promotion to situations such as those of plant superintendent, works manager, or production supervisor.

During Open House, visitors will have the opportunity to see several machines and pieces of equipment in operation in the Production Lab. (A175) in the metals wing.

## Instrument Technology

This course is designed to train Instrument Technicians for an ever-increasing future in our modern technical world. The student will find himself, among other things, studying the theory of automatic control and its application in Alberta's numerous industries. Many hours of the course are spent working on actual process instruments in the Instrumentation Laboratory — one of the best equipped in North America.

Because this field requires knowledge of such a wide variety of subjects, the course was designed to give at least some training in as many areas as possible. Electronics, Mathematics and Physics are studied, as are Chemistry, Drafting and Materials Production, not of course



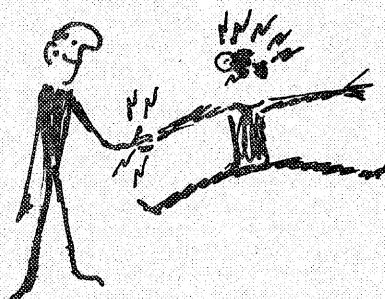
forgetting many courses in Instrumentation Theory and System Fault Analysis. The Instrumentation Theory and Laboratory courses are designed to complement each other — what

is taught in Theory is applied in the laboratory.

As an Instrument Technician the employment opportunities are unlimited. It has been estimated that for every five million dollars of capital investment in industry, one Instrument Technician is required. This may appear to be rather an insignificant figure, but if one realizes that industry is planning to spend over \$500 million on the development of the Alberta Tar Sands alone, the prospects are seen to be more than bright. In fact, the opportunities for the graduate instrument Technician are some of the best at the Institute.

In the Instrumentation Laboratory several interesting displays have been set up. There will be a small automatic control loop, using water as the process fluid. A drop of lemon juice will be shown to have great physical strength. A system will also be set up to measure a person's height in much the same way that liquid level is measured in a large storage tank. At the same time, using no weights or springs, no levers or pulleys, it will be shown the accurate measurements of weight that can be made.

## Industrial Electrical



The subjects taken by the Industrial Electrical student cover much of the practical and theoretical knowledge which will be encountered in the electrical industry today and in the future. During the first year, the student learns the basic but essential information needed for a full understanding of electricity. Along with mathematics, physics, and English the student learns about direct current theory and applications advancing to alternating current in the latter part of the first year and continuing through the second year. An interesting and enlightening part of the Industrial Electrical course is electronics, in which the student becomes familiar with many of the electronic devices used for industrial controls. Drafting, which is taken in the first year will be found to be very useful in every phase of the electrical field. Many companies in the electrical industry prefer electrical technicians with a basic knowledge of drafting.

One of the most frequent questions asked of students is what they will become once they finish their education. Industry is looking for many types of trained people but in the electrical industry the possibilities seem almost unlimited. The course in Industrial Electricity attempts to provide the student with as much knowledge as possible. Information on power generation, distribution and various types of electrical equipment is a large part of the course. Basically, the student is taught the theory concerning the operation of electrical devices so that once he obtains employment he will have the basis upon which he may specialize.

The demand for Industrial Electrical graduates is growing. The greater strides in automation taking place in Canada means that trained men will be needed. Industrial Electrical men, who will be able to understand and operate the equipment so vital to the economy of the country, will have a good opportunity for a rewarding career. The graduate may be concerned with design, assembly, installation or maintenance of electrical equipment, ranging from relays and transistorized controls to huge power generators. The graduate should be aware that many areas of employment now available are a result of our technical age and were not available to previous graduates of Industrial Electrical Technology.

## Materials Technology

This course is designed to produce materials technologists of high calibre to work in research, inspection, selection, and application of engineering materials such as: metals, plastics, concrete, asphalt, rubber, ceramics, and soils (with emphasis on metals). The first four quarters are designed to give the student a broad education in the engineering sciences — the subjects vary from welding to modern physics. Intensified courses in testing, inspection, and properties of these engineering materials are taken in the last two quarters.

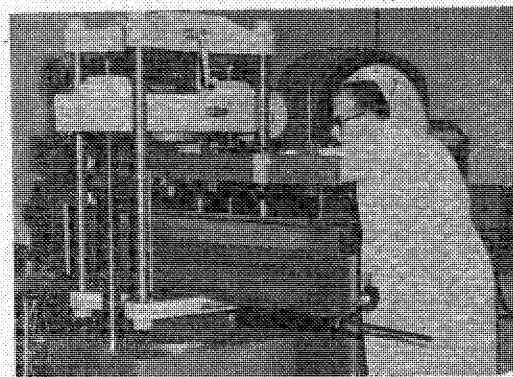
When the students graduate they will probably take jobs with the large metallurgical companies to become supervisors in their quality control laboratories. Others will find employment as non-destructive testing inspectors in the aircraft, pipeline, or construction industries. The research divisions of Industry, the National Defense Research Board, and the Atomic Energy Commission will require other Materials Technologists.

The opportunities in this challenging field are unlimited. It has been estimated that Canada will need at least 1,000 Materials Technologists and the United States another 10,000 within the next ten years. NAIT is the only institution in Canada that offers this course (three universities in the United States have similar programs).

The following is a summary of the courses taken by a Materials Technologist student during his two years at NAIT:

### A. Metallurgical Courses:

1. Destructive Testing: (70 hrs.) — Tensile, Fatigue, Charpy, Izod, Torsion, Rockwell, Brinell, and Tukon tests.
2. Non-destructive Testing: (140 hrs.) — X-ray, Gamma-Ray, Darkroom procedures, Ultrasonics, Magneflux, Dye penetrants, and Filtered Particle tests.
3. Physical Metallurgy: (205 hrs.) — The physics of metals — Mechanisms of hardening metals, mechanisms of failure, corrosion, equilibrium diagrams, solutions, phase changes, and diffusion. The labs included specimen preparation, the use of the microscope, metallograph, and the identification of various microstructures.



4. Properties of Non-Metallurgy: (120 hrs.) — Properties, structure, selection, and use of non-metallic engineering materials such as wood, wood products, cement, gypsum, plastics, ceramics and protective coatings.

### B. Pure Science Courses:

1. Physics: (180 hrs.) — Heat, sound, optics, solid state physics, basic electronics, and elementary atomic and nuclear physics.
2. Math: (130 hrs.) — Analytical geometry, trigonometry, differentiation, integration, probabilities, and statistics.
3. Statics and Dynamics: (50 hrs.) — Force systems, moment of inertia, accelerating bodies, kinematics, etc.
4. Chemistry: (180 hrs.) — General inorganic chemistry, qualitative analytical chemistry and organic chemistry, including nomenclature common petroleum tests, stoichiometry, and industrial chemical processes.

### C. General Courses:

English — report writing; welding; machine shop; elementary drafting; material balance — industrial stoichiometry.

Note: All theory was supplemented by experimentation and lab work.



## Medical Laboratory Technology



The Medical Laboratory students extend a welcome to all visiting the Medical section of the Northern Alberta Institute of Technology.

In general, people have strange ideas about the medical technologist. They have perhaps met with "the vampire" in the hospital, in the clinic or on T.V. They may have been tested with some very complicated looking machine by someone in white, who really wasn't "the nurse". What becomes of all that blood or all those tracings, remains for the average person, a mystery. Take this opportunity to go behind the scenes, into the Medical Laboratory Section.

Technologists may work in a small hospital or in a clinic and would probably be doing Haematology, Clinical Chemistry, Histology, Bacteriology and perhaps even Blood Banking, all in a limited scale or may be working in a larger establishment. Still other technologists, may choose to work in research laboratories or may devote their time in teaching.

In Haematology, the technologist studies blood slides microscopically to determine the number and types of normal and abnormal blood cells. The findings aid the doctor in diagnosing such diseases as anemias and blood disorders.

The Technologist employed in a Bacteriology Laboratory is a microbe hunter. He attempts to isolate and identify microorganisms from various body specimens. From the laboratory results the doctor may diagnose his patient's bacteriological infection. The following Bacteriologist's Prayer may be enlightening:

"O Lord, lend sharpness to my eyes  
That with the aid of stains and dyes  
and microscope's enlarging sight  
The little things may come to light.

The little things like germs and spores  
That make for growths and spots and sores  
Like cocci, fungi, parasitic  
That once defied the analytic.

That I may speak and say "This, this"  
Lest doctors diagnose amiss  
That pain may be relieved through me  
The tiny things, Lord, let me see."

Author Unknown

The work of a Technologist in Clinical Chemistry involves chemical analysis of body fluids to detect presence of abnormal components or to determine abnormal amounts of normal constituents. The chemistry of the human body can be used as a very useful diagnostic tool.

The Blood Bank technologist prepares bottles of blood to be given in transfusions. This involves ABO and RH typing of both the person giving the blood (donor) and the person receiving it (recipient).

Histology deals mainly with body tissue. Here anything removed as a result of surgery is processed by special techniques and the tissue cut as thin as 1/500 of a millimeter is placed on a slide and stained so it can be examined microscopically by a Pathologist. The structure of the cells which make up the tissue is helpful in the diagnosis of malignant or benign growths.

Prior to the Northern Alberta Institute of

Technology, the training of Medical Laboratory Technologists in this province, was on an apprenticeship-like basis in the hospitals. Now students may take ten months didactic training at the school and a year of "learn by doing" at the hospital. After completing two years of training they may write the Dominion Examinations set by the Canadian Society of Medical Laboratory Technologists and if successful, may be registered by the Society. There are further qualifications beyond the basic R. T. level such as Advanced Registered Technologist or Licentiate Canadian Society Laboratory Technologist. These necessarily require further training.

The requirements to enter the school of Medical Technology at NAIT are Senior Matriculation with credits in Mathematics 30, Chemistry 30, Physics 30 or Biology 32-30, and an overall average of at least 60%. The course of study at the school includes courses in English, Organic and Inorganic Chemistry, Laboratory and Hospital Orientation, as well as work in all of the previously mentioned departments. If anyone wishes further information, pamphlets are made available by the Medical Laboratory Section.

## Medical X-Ray Technology

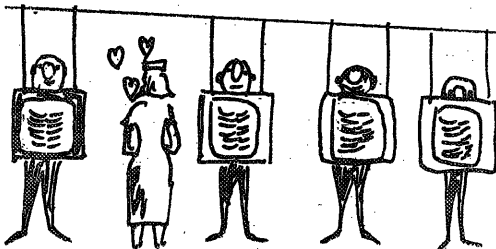
The X-Ray Technologist is a member of the medical team in the Hospital or Clinic. X-Ray is playing an ever increasing role in medical diagnosis and treatment of disease.

Over the past twelve years there has been a three to four fold increase in the number of X-Ray examinations undertaken in the hospitals and medical clinics in Alberta. During this time the size of the X-Ray department and the numbers of Radiological Technicians required has increased correspondingly. With the continual increase in population, and development of new radiological procedures there is an ever increasing need for fully qualified technicians in this area of patient care.

Medical X-Ray Technology is a two year program for either Diagnostic Radiography or Therapeutic Technology. An additional year is required for Registration in both Specialties. Before the training program at the Northern Alberta Institute of Technology was initiated in 1963, the entire training was given at the Accredited Training Schools in the X-Ray Departments in the larger hospitals. The training is now carried out as a co-operative program between the hospital school and the Section at NAIT.

The X-Ray Technician spends most of his time with the patient. Following admission of the patient to Emergency, the first stop is frequently the X-Ray Department. Because of this constant involvement with the seriously ill or injured patient and as many of the x-ray procedures involve team-work with other medical personnel, the student spends part of his training period at the hospital and the remaining time in the X-Ray Section at NAIT.

The student is accepted by the accredited training school in the Hospital. Application may be made to any of the four city hospitals



for training in Diagnostic Radiography. Students come to NAIT from Red Deer and Calgary. The Edmonton Cancer Clinic is the only training school among the hospitals or clinics in the province that is accredited for the training of both Radiographic and Therapeutic Technologists. The students undertaking the Therapeutic program attend the institute for the subjects applicable to both courses. Therapeutic Technology involves the use of X-Ray and various

radioactive sources for the treatment of patients with cancer and other diseases.

If the student has fulfilled the requirements for examination at the end of the two year training program, he may attempt the National Examination set by the Canadian Society of Radiological Technicians. Certification following successful completion of these examinations entitles the technician to use the designation "R. T." C. S. R. T. after his name which indicates proficiency in his chosen profession. This certification is recognized across Canada, and through reciprocity in the United States, Great Britain and a number of other countries.

X-Ray Training presents the opportunity of an interesting and rewarding profession to either male or female applicants who meet the entrance requirements. One interested in people and their welfare may gain a great deal of satisfaction from this work.

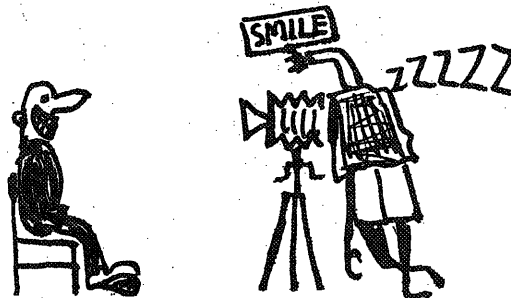
Post-graduate Training, a Fellowship in the Society or a Teaching Certificate is available to a graduate who is interested in advancement.

## Photographic Technology

Photography, as never before, has a responsibility to the people and economy of Canada. Once a medium of pleasure and beauty photography has refined and broadened itself to the point where now, those adequately trained can contribute vital and strategic information towards the production of saleable and competitive goods.

The Northern Alberta Institute of Technology is meeting this challenge by offering to those who can rise to the standards and qualifications a thorough and complete course in Photographic Technology.

This is a two year course, designed to equip a person to meet any type of photo-



graphic situation with clarity and understanding, whether it be behind the camera or in the dark room. Emphasis is put of "doing", so that each degree of theory is accompanied by practical labs and assignments.

The first year puts the emphasis of all phases of black and white photography. Densitometry and other density controls are stressed along with general working procedures. Dark-room and camera techniques are directed and controlled to ensure maximum efficiency and consistency. The course includes print and negative retouching and all techniques of presentation.

Colour processing and printing are incorporated in the second year studies along with the techniques of control and production. Advanced black and white work, both portrait and commercial, are carried with emphasis on studio situations. Basic Motion Picture techniques will also be introduced including A and B rolling and other editing devices.

Photography is taking a new and important place in society: particularly in industry. The technician can obtain employment in the dark-rooms of studios, large firms and industrial plants. Medicine and Police are using photography more and more, while there is always a demand for pictorial photographers in magazines, newspapers, studios, etc. It should be realized that the large area of employment will be found initially in darkroom technician work, but the opportunity to advance to the camera will be far greater to those who have achieved training in such. Like any competitive position, the potentials are limited only to the persons ability, experience, and training. Training in photography prepares the student in the only positive way to meet the competition with assurance.

## OPPORTUNITIES FOR CONTINUING EDUCATION

School Term - September 15 to April 15

# EVENING DIVISION

Many of our citizens are concerned about their future job and occupational security; advancement in their present positions; preparing for a new occupation or keeping up to date with the present day technological advances. Your government was well aware of the needs in these areas and conscious of the demands and wishes of the people. Their concern and wisdom is reflected in the facilities of the Northern Alberta Institute of Technology, which are admirably well suited to the needs of today, tomorrow and the future.

The Evening Division was first organized in September of 1963, a full year in advance of previous planning. Instruction was on a limited scale, with a total of 24 different courses being offered to a total of 650 students. A full scale programme was developed for September of 1964, with instruction in 110 different subjects, instructors being drawn from our own thoroughly qualified staff and from business and industry. This year, more than 2200 students will have received instruction in Night School.

Evening classes have been organized with the following broad objectives in mind; to provide educational opportunities for adults:

1. who wish to become more proficient in their particular occupations.
2. who seek occupational advancement.
3. who desire to prepare for new occupational fields.
4. who wish to acquire an avocational skill or interest.
5. who seek new insights to aid in better adjustment to the rapidly changing world around them.

The Evening Division is further concerned with providing short refresher courses for groups within industry. These may last two or three days, a week or more, depending on the requirements.

Our facilities are available for short summer training courses on an organized basis for groups interested. The entire facilities of the Institute are ready for use on an evening or

special short course basis. The general rule for the organization of courses under the evening division is that if the subject matter falls within the pattern of our daytime instruction and a qualified instructor is available, we are prepared to offer the course.

The Institute is particularly concerned with the plight of the shift worker who, because of his hours of employment, finds it next to impossible to attend scheduled evening courses in the ordinary manner. Suitable arrangements may be worked out on request, and we invite those in this position to consult with us.

Many of our citizens have not had the advantage of a formal education or normal instruction in their area of employment. This often means that promotion and salary increases pass them by. It is now possible through careful planning for adults to upgrade themselves by organized evening study over a period of time, thus making up for the deficiencies in their early preparation and education. Industry recognizes the need for upgrading and is prepared to recognize the studies carried on at the Institute.

Out of the 110 courses offered this year at night, over 30 of them are credit courses. This means that the instruction received is identical with that offered in the daytime. It is thus possible to eventually obtain a diploma equal in stature to the daytime diploma. It is our intention to expand the number of credit courses over the next few years and thus provide additional opportunities.

Certificates are issued for all courses which end with a final examination. The general rule is that in order for students to qualify, they must have attended at least 85 per cent of the time and obtained a minimum mark of 60 per cent on the examination.

Courses range in length from 36 to 180 hours with the average being 72 hours. Students attend either one or two evenings per week for a period of two or three hours, depending on the course. The usual starting time is 7:00 p.m. Fees charged depend on the length of the course

and range from \$10.00 to \$26.00 on the average, plus a registration fee of \$5.00.

The annual evening calendar containing full information on all courses offered is available by the first of June of each year, and copies may be obtained by telephoning or writing to the Institute.

There are a number of areas which bear special mention, namely the Homemaker Course, a Plastics Course, and the Foreman and Supervisory Training Course. Each of them is unique in that they are not offered elsewhere in Canada at this time.

The Homemakers course is 72 hours in length and offered two evenings a week. It was designed because of the acute shortage of trained personnel to assist the Various Welfare agencies in the city and in private homes. Course content includes instruction in nutrition, first aid, common diseases, child care, and care of the aged. Since the introduction of the course, we have had inquiries from Nova Scotia, the Northwest Territories, and many other areas seeking information.

Some months ago, the Plastics Industry approached the Institute with a plan to develop a course in Plastics for the Industry. Instruction consists of lectures, demonstrations, laboratory work, and plant visits. Despite the importance of Plastics in Canada, this is the first time that a course of this kind has been offered anywhere.

In 1963, with the able assistance of Mr. Arthur FitzPatrick of the Research Council of Alberta and others, we developed a series of courses for Foremen and Supervisors, including instruction in Administrative Controls, Work Study Analysis and Industrial Personnel Administration. The Foreman and Supervisor occupies a very important position in Industry, and it was felt, that a more complete understanding of the whole structure of business was not only desirable, but necessary, in this age of rapid development. Again, this is the first course of its kind to be formally organized at this level.

**INFORMATION MAY BE OBTAINED BY PHONING 479-3513 or 477-1053, or calling at the Institute.**

**Applications are now being accepted for the term commencing September 1965.**

**For those wishing guidance or advice concerning the courses, the office is open Monday to Thursday evenings from 6:30 to 8:30 p.m. and Monday to Friday from 8:00 to 4:45 p.m.**

## Apprenticeship Division

The Division offers Apprenticeship Training Courses, Technology Courses, Pre-Employment Courses, Refresher Courses for Journeymen, and Special Courses for tradesmen.

Each Department of the Division, in addition to training Apprentices, participates in the training of Technicians of the Industrial Technician field and serves as their home department. The Electrical Department Staff provides laboratory and theory instruction for three technologies; the Metals Department does likewise for Industrial Technology; and Automotive-Diesel and the Construction Department offer their services to Heavy Duty Equipment and the Forest Technologies.

In trade occupational areas where there are no designated (Alberta) trades, or where there is apparent need and when facilities permit at this Institute, Pre-Employment, Refresher and Special Courses are offered. Course outlines are prepared by the Institute staff in co-operation with trade groups, Government Agencies and Departments.

As the Institute develops, its work in the field of advanced training for Journeymen will become more and more important. The staff, equipment, and facilities are available to share in programs which will help Canadians meet the challenges of industry and of international competition.

Some 2,500 Apprentices from the Alberta

designated trades are attending courses at the Institute during the 1964-65 term. An increased number is expected in the 1965-66 term. In years to come, however, with the opening of the Vocational High Schools, it is possible that relatively fewer beginning Apprentices will attend at the Institute. Possibly more senior Apprentices will attend.

### APPRENTICESHIP

The Apprenticeship Program leading to Journeyman status in a number of designated trades, presently 24 in number, is under the direction of the Provincial Apprenticeship Board.

Apprenticeship is a method, a way of learning and acquiring a body of skills; it is training on the job supplemented by technical training courses taken at one of the Institutes of Technology.

## Canadian Vocational Training

Secretarial, stenography, clerk-typist, Typistry, Bookkeeping, Barbering, and Beauty Culture are offered to students under the Unemployment Insurance Commission operated CVT program.

Students come to the Northern Alberta Institute of Technology upon recommendation of the Commissioner to receive training. Tuition

is paid by the government for these courses which last 20 to 26 weeks. Additional classes for advancing high school standings are also offered.

CVT graduates are very well received in employment following their training at NAIT. This division of NAIT provides training for persons who were unable to receive adequate job training previously.

## SANXIS SEZ

This column is infamous. Perhaps a brief history of this particular part of the paper will explain why.

Originally, SANXIS SEZ was written by one, Tolbert Sanxis from Architectural Technology. One day he wrote a column to which the Drafting Boys took offence. Afraid of physical maim, Tolbert Sanxis quit writing this column. But not before he unearthed the dreadful and notorious NAITSPA (Northern Alberta Institute of Technology Students Protective Organization). NAITSPA is an underground "Gestapo-Like" organization which operates solely for the benefit of the underprivileged students.

Now yours truly, Grezelda Zlokstein writes Sanxis Sez. I am an extreme rightist and a member of NAITSPA.

Welcome to NAIT and I hope you enjoy your visit.