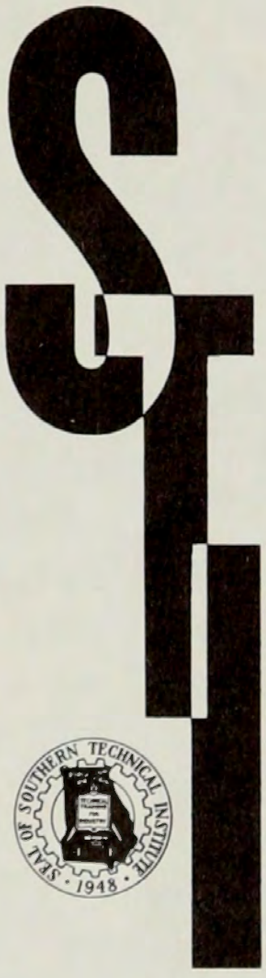
Catalogue and Bulletin 1964-1965

Southern Technical Institute

MARIETTA, GEORGIA

a unit of the
Engineering Extension Division

GEORGIA INSTITUTE
OF TECHNOLOGY



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Engineering Extension Division

GEORGIA INSTITUTE
OF TECHNOLOGY

THE SOUTHERN TECHNICAL INSTITUTE IS an accredited, two-year, co-educational, boarding, technical college offering the Associate in Engineering degree in

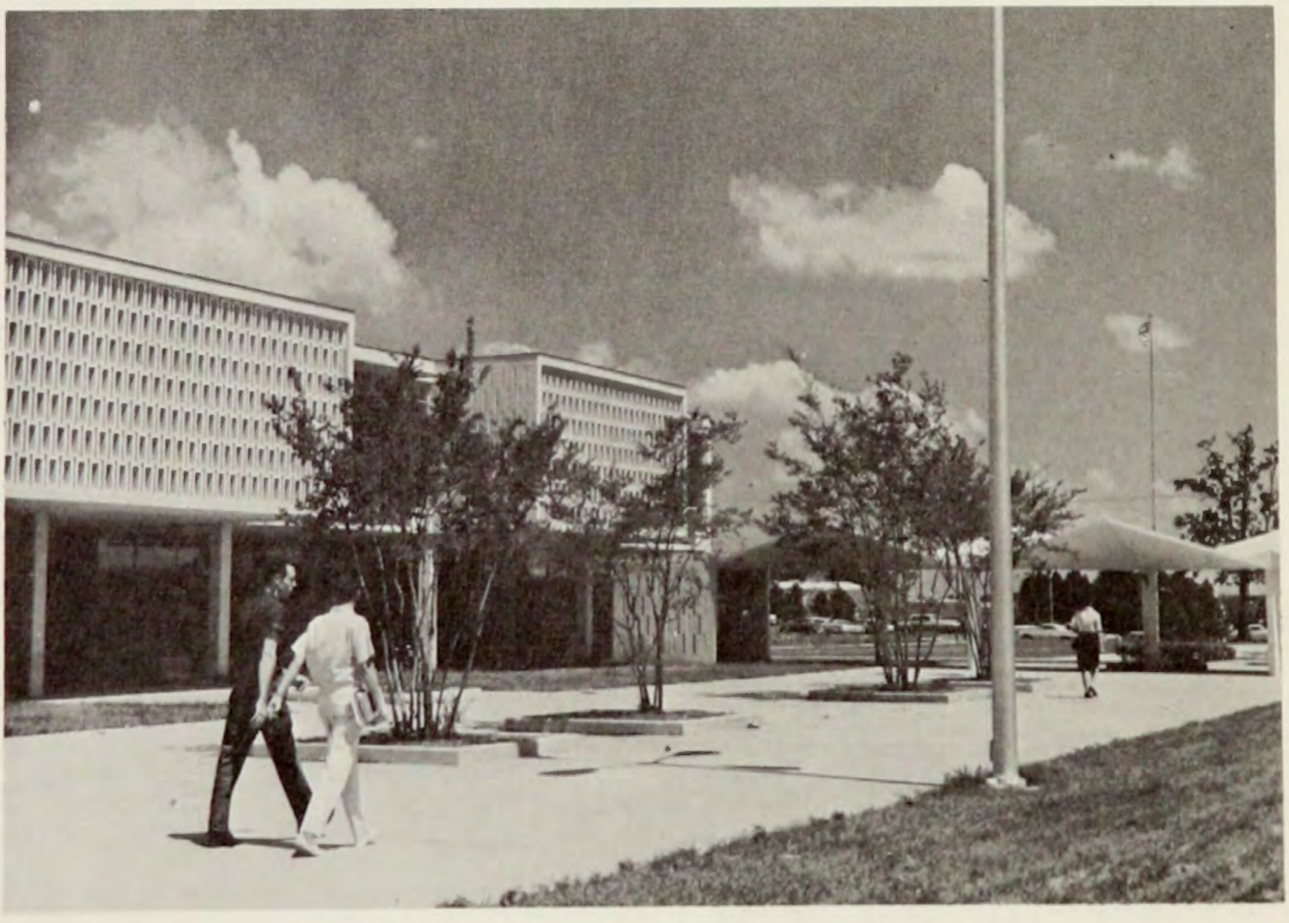
*Air Conditioning Engineering Technology
*Architectural Engineering Technology
*Civil Engineering Technology (Two Options)
*Electrical Engineering Technology (Electronics Option)
Electrical Engineering Technology (Telephone Option)
*Gas Engineering Technology
*Industrial Engineering Technology
*Industrial Engineering Technology (Management Option)
*Mechanical Engineering Technology
Textile Engineering Technology

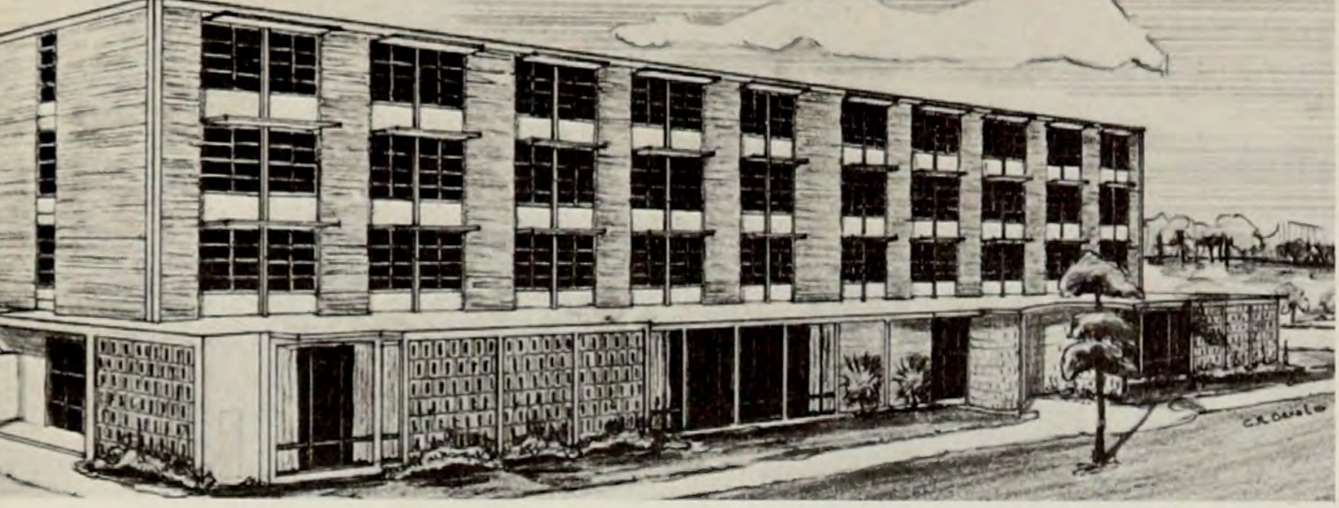
No scholastic work offered by Southern Tech is available through correspondence or extension.

**Engineers' Council for Professional Development accredited Technical Institute curricula. The two curricula not indicated as accredited have not yet been submitted for accreditation.*

(See inside back cover for location of campus)

EXIT





THE NEW SOUTHERN TECH

Pictured above is the architect's rendering of the new, air conditioned men's dormitory and dining hall, which is gradually becoming an actuality on the Southern Technical Institute campus. The completed structure, being built at a cost of $750,000, will be a brick, four-story building which will harmonize with the prevailing modern architectural plan of the New Southern Tech. It will be conveniently located near the heart of the bustling campus and will accommodate 186 students. Ready for occupancy by the winter of 1965, the new dormitory will also include a kitchen and a dining hall having a serving capacity of 600.

News of almost as great significance is the fact that the Board of Regents of the University System has approved a second men's dormitory for Southern Tech—this one also to be of brick and of four stories, designed to house 300 students. It will be adjacent to the one now under construction and connected to it by a covered walkway. Work on it is also in progress.

These new buildings, which will assure greatly expanded services to Southern Tech students, will complement and add to the attractive, modern, well-equipped, $2,500,000 facilities which the Institute's faculty, staff, and students have been utilizing since the fall of 1961. It was in this year that the New Southern Tech was built on Clay Street, Marietta, Cobb County, Georgia, eighteen miles northwest of Atlanta, one mile north of Lockheed Aircraft Corporation, just off the four-lane Highway 41, and about one mile from the center of the city of Marietta.

The campus area of 120 acres provides adequate room for buildings, athletic fields, and parking space to accommodate 1600 students. Since 1961 and before the new structures, eight modern, fire-resistant, brick buildings have been utilized. Four of these are two-story buildings: the Classroom Building, the Student Services Building, the Electrical Building, and the Building Construction—Drawing—Civil Building. The Administration Building and three buildings for mechanical laboratories are one-story structures. Buildings are connected by covered walkways, and there are parking facilities to accommodate more than 700 automobiles.

The new dormitories and the dining hall will increase Southern Tech's buildings to ten and will assure unexcelled living and boarding accommodations to complement its already superior instructional facilities and services.

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Engineering technicians must observe, test, and check accurately.

THE WHY OF SOUTHERN TECH

The Engineering Technician and Southern Tech

The engineering technician is the newest member of the engineering team composed of the scientist, the engineer, the engineering technician, and the craftsman. His addition to the team resulted from the impatience of the 20th century. Prior to World War II, the lapse of time between a scientific discovery and its application was approximately six to ten years. Today our technology is moving so fast that in many cases this lapse time has been reduced to three to six months or less.

This increasing pressure to move more quickly from experiment to product requires engineers to witness, interpret, and make use of scientific discoveries almost as they occur. This change in engineer's work requires engineering education to be more and more in the area of advanced mathematics and the physical sciences and less and less in applied or operational engineering fields. Today an engineer's work is generally concerned with research, development, or design rather than with applied or operational engineering work.

Because the engineering arts and skills are essential to industry, the American Society for Engineering Education has sponsored the technical-institute program with curricula designed to fill the educational gap caused

by the change in the engineer's work. The technical institute trains men to take over much of the applied or operational engineering work formerly done by large segments of the engineering profession, thus freeing engineers for work requiring a much higher scientific and mathematical background.

The engineering technician is concerned with the production, operational, and sales aspects of engineering and industry, and he performs specific tasks which are functional parts of the engineering or scientific activities. Such work usually embraces a specialized field of research, design, development, or construction; or of control and operation of production facilities and manpower. The performance of such work is based on (a) knowledge of the underlying scientific, engineering, and mathematical principles related to the specialized field of work and (b) the application of established scientific techniques and methods toward the solution of problems encountered in the field of specialization—i.e., the engineering and industrial know-how of the field.

Although many colleges accept transfer credit, the technical-institute program is not intended as a feeder channel into the junior and senior levels of a college or university. The program is not comparable to the first two years of a four-year engineering program; it is much more than that in some important respects and less in others. Its direction and emphasis are significantly different. The technical-institute program is designed to give the student a high degree of proficiency in his chosen field of technology, solidly supported by a sound working knowledge of the mathematics, English, basic sciences, and technical principles involved in that field.

Accelerating developments in all phases of technology are continually increasing the need and demand for highly qualified technicians. The President's Committee for Scientists and Engineers estimated that colleges are now graduating fewer than one-sixth the required number of highly skilled scientific and engineering technicians through accredited or approved courses in the United States.

For this reason graduates from technical-institute courses are in great demand. To date, Southern Tech has graduated over 3,000 engineering technicians. Starting salaries for these graduates are not only excellent but have increased year by year. Graduates with several years of industrial experience in many instances hold positions equal, or nearly equal, to positions held by professional engineering graduates who have similar industrial experience.

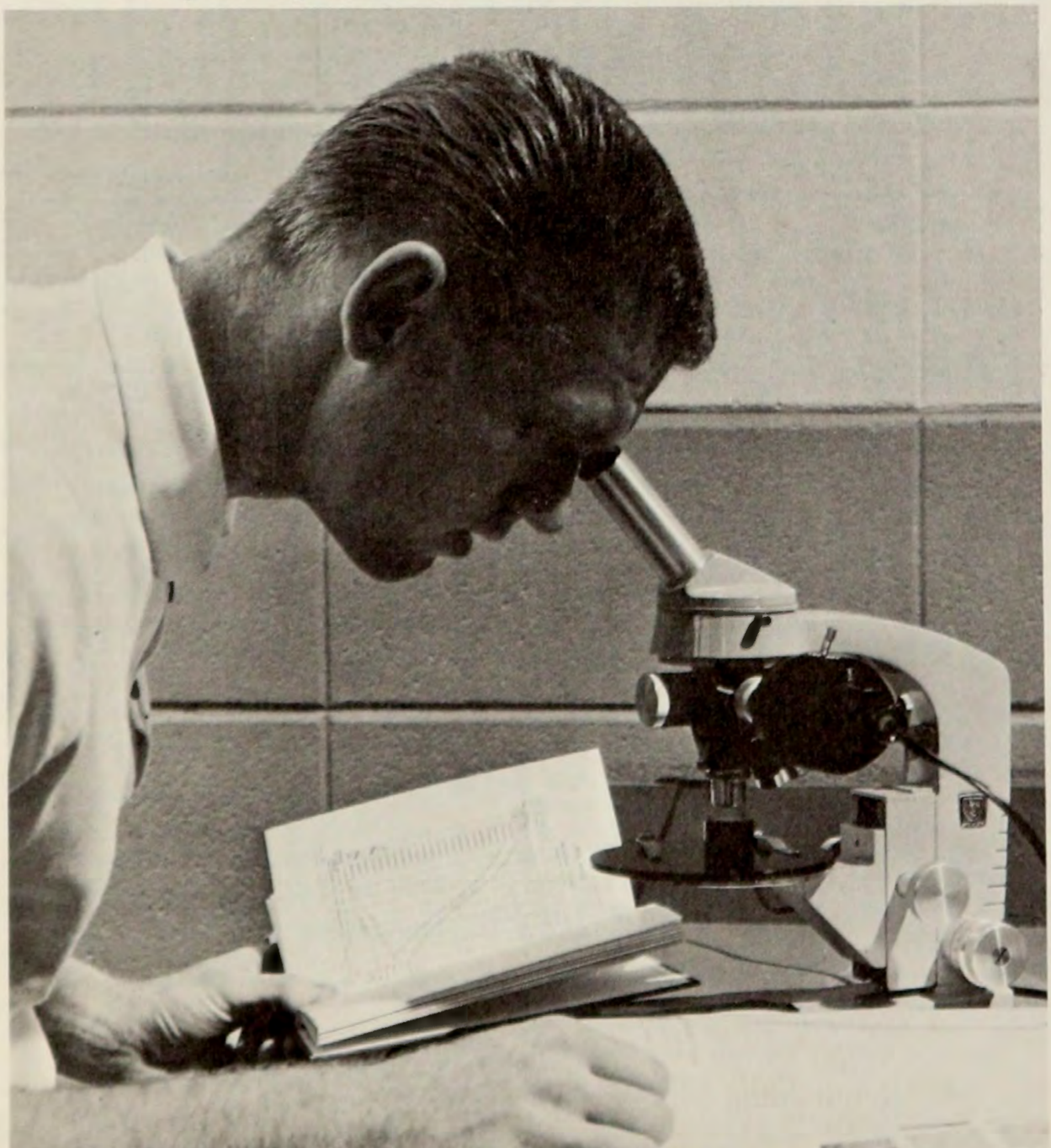
Southern Tech is the two-year technical division of the Georgia Institute of Technology, operating under the Engineering Extension Division of that institution. The school was established at the request of the Associated Industries of Georgia to serve the critical need for engineering technicians in Georgia industry.

Qualifications Necessary for Success in Technical-institute Training

Because of the complex technical and industrial areas served by the engineering technician, the technical-institute student must be carefully selected. Graduation from a good accredited high school is, of course, essential. Graduation alone, however, is not sufficient assurance of a student's success in a technical-institute program of study. He should also possess the following qualities, which are reliable predictors of scholastic achievement and success in this level of technical education:

1. *An overall, average or above-average record in four years of high-school work*
2. *Aptitude for, skill in, and interest in mathematics (especially algebra), science (especially physics), and English*
3. *Some mechanical aptitude and manual dexterity*
4. *Ability to grasp the theory of applied engineering*
5. *Genuine interest in and enthusiasm for some technical field*
6. *Determination and willingness to work hard*
7. *Ability to work with and influence other people*

Engineering technicians learn to use much scientific equipment.



TWO-YEAR CALENDAR

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1965

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ACADEMIC CALENDAR, 1964-65

Fall Quarter, 1964

September 28—Registration for "new" (beginning) and "old" (returning) students. Orientation for beginning students.
September 29—Orientation continues for beginning students.
September 30—Classes begin for all students. Late registration fees apply.
October 2—Last day for registration. Last day for adding a subject to study list.
October 16—Last day for dropping a subject from study list without penalty.
November 6—End of deficiency report period.
*November 26-November 29—Thanksgiving recess.
December 18—End of term.
*December 19-January 3—Christmas recess.

Winter Quarter, 1965

January 4—Registration.
January 5—Classes begin.
January 6—Late registration fees apply.
January 8—Last day for registration. Last day for adding a subject to study list.
January 22—Last day for dropping a subject from study list without penalty.
February 12—End of deficiency report period.
March 19—End of term.
*March 20-28—Spring recess.

Spring Quarter, 1965

March 29—Registration.
March 30—Classes begin.
March 31—Late registration fees apply.
April 2—Last day for registration. Last day for adding a subject to study list.
April 16—Last day for dropping a subject from study list without penalty.
May 7—End of deficiency report period.
June 11—End of term.
June 12—Graduation exercises.

Summer Quarter, 1965

**July 6—Registration for Southern Tech (Day and Evening).
July 7—Classes begin.
July 8—Late registration fees apply.
July 9—Last day for registration. Last day for adding a subject to study list.
July 23—Last day for dropping a subject from study list without penalty.
August 13—End of deficiency report period.
*September 6—Labor Day Holiday.
September 17—End of term.

September 27—Registration for Fall Quarter, 1965.

***Official school holidays.**
****Night-school students register at Georgia Tech.**

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February 19, 1960 - January 1, 1967

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January 1, 1963 - January 1, 1970

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January 13, 1964 - January 1, 1971

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W. ROSCOE COLEMAN, Augusta, Georgia, Tenth District
January 1, 1958 - January 1, 1965

LEONARD ROBERT SIEBERT, *Executive Secretary,* Atlanta, Georgia

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LEONARD H. TAYLOR, B.S.M.E., M.S.M.E. (Georgia Institute of Technology) P.E. (Georgia), *Head, Air Conditioning Engineering Technology; Professor, Air Conditioning Engineering Technology*

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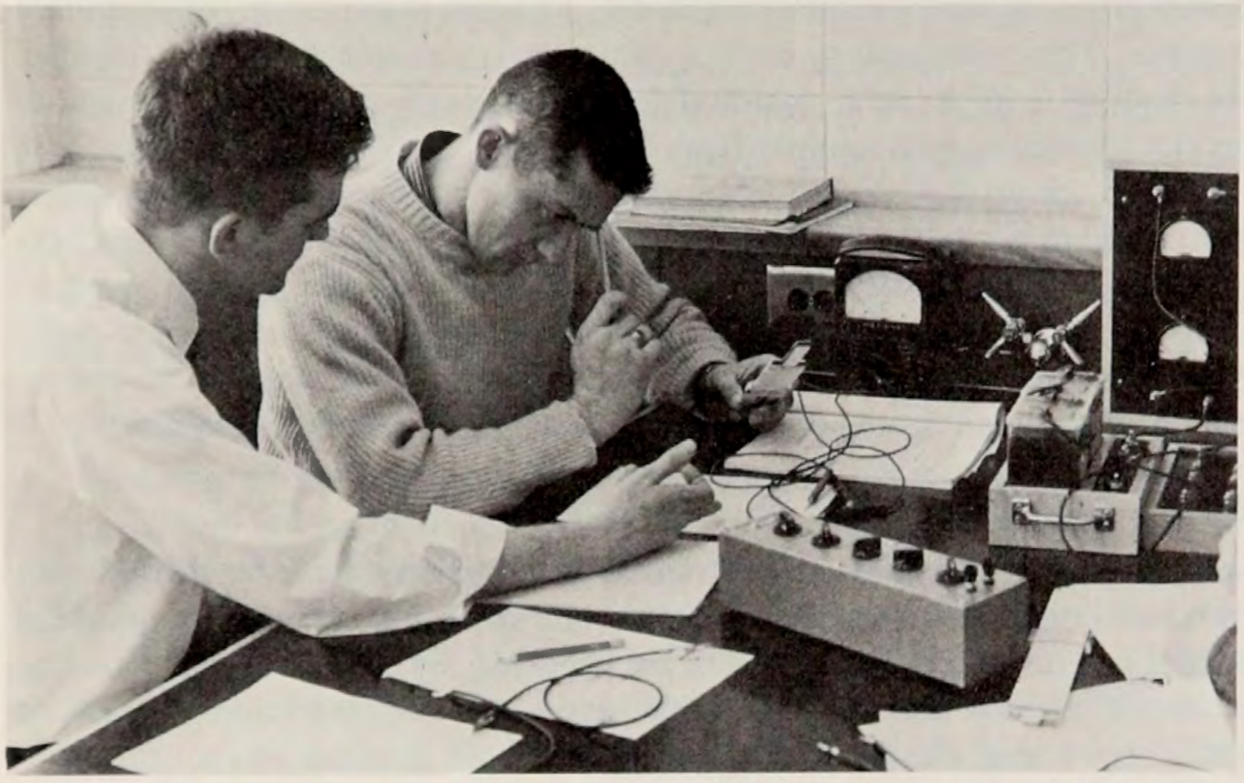
*On leave



Engineering technicians learn laboratory techniques by using laboratories.

GENERAL INFORMATION

History

The Southern Technical Institute has been in existence as a two-year, boarding, co-educational, technical college for almost seventeen years, thirteen and a half years of which were spent at its previous location on the old Atlanta Naval Air Station facilities in Chamblee, Georgia. With the full support of the Associated Industries of Georgia, the Georgia Institute of Technology, and the Board of Regents of the University System and after many months of curriculum-building conferences, and much work on the physical plant, The Technical Institute, as the school was called then, opened its door to its first students on March 24, 1948.

Several achievements in Southern Tech's seventeen years of phenomenal growth, progress, and success are noteworthy: the change in name from The Technical Institute to the Southern Technical Institute; the right to award the Associate in Engineering degree to all graduates; national accreditation of curricula by the Engineers' Council for Professional Development; recognition of Southern Tech by the U. S. Department of Education as an institution of higher learning; the increase in the number of students from 116 to 978, the faculty from 10 to nearly 60, laboratories from three to 40, and curricula offerings from seven to 11; the development and maintenance of a very effective student job-placement service; and the acquisition of a new campus and school plant in Marietta, Georgia.

Southern Tech has trained and sent to excellent positions in industry over

3,000 graduate engineering technicians, who are performing indispensable services. This achievement in itself is a most meritorious one and justifies the Institute's existence a hundred fold. An equally significant, infiuential service, however, has resulted from Southern Tech's role in the Southeast as a pilot school in technical education at the institute level. Southern Tech has served as a model for other technical institutes in the area, and members of Southern Tech's administrative staff and faculty have on numerous occasions served as consultants when other technical institutes were in the planning stage. Futhermore, Southern Tech personnel have been most instrumental in "spreading the word" about technical institute education.

Living Accommodations and Their Cost

Until the Southern Technical Institute completes its dormitory-dining hall building on the school's Marietta campus, living accommodations for single and married students will be provided by the Marietta Housing Authority, which maintains and operates a one-thousand unit project on Clay Street near the Southern Tech campus.

For $70.00* per quarter, single students may live in a one-, two-, or three-bedroom apartment, each of which has kitchen facilities for the occupants' use. The quarterly charge includes water, electricity, gas for heat and cooking, and maid service. Every apartment has adequate space to house, with convenience and comfort, the number of students assigned to it. Students are forewarned, however, that the number of one-bedroom units is somewhat limited. Prior to occupancy each student must make a $25.00 key and security deposit to cover any loss of key or specific damage to his apartment other than the normal wear and tear. All arrangements for these units must be made through the business office of the Southern Technical Institute. Students also will make their deposits and pay their rent to this office. To all interested students the Southern Technical Institute registrar's office will send a room reservation card.

Apartments for single students are equipped with all essential living-room, bedroom, dinette, and kitchen furniture—beds, mattresses, chairs, tables, refrigerator, and stove. The student must supply towels, mattress cover, bed linens, pillow, blankets, study lamp, dishes, cooking utensils, curtains, pictures, and other furnishings which will add convenience, attractiveness, and comfort to his living facilities. All beds in the apartments for single students are single beds.

Parents of single students who live in a Marietta Housing Authority apartment are assured that their sons will be as closely supervised as possible and that no conduct which reflects discredit upon the student, his parents, or the school will be tolerated.

* When the new dormitories are completed, this charge will be increased.

Furnished and unfurnished apartments of various sizes and prices are also available to married students. Since all applications must be filed and financial arrangements made with The Marietta Housing Authority, all correspondence relative to living accommodations for married students should be addressed to Executive Director, Marietta Housing Authority, P. O. Box 366, Marietta, Georgia. Before the student can be assigned an apartment, he must prove to the Executive Director that he is a bona fide applicant for admission to the Southern Technical Institute.

Boarding Facilities and Their Cost

Because room and board are not now sold by Southern Tech as a unit, the student is free to choose from three possibilities where he will take his meals.* In its own dining hall, located in the Student Services Building, the school serves breakfast and lunch five days a week on a pay-as-you-go basis. The dining hall is not open on Sundays and official school holidays. Since students living in a Marietta Housing Authority apartment will have a kitchen and cooking facilities, they may prepare the meals they wish in their own school home. A third possibility is the numerous, reputable restaurants conveniently located within walking distance of the school campus. Though the cost of the student's board will vary, depending upon where, what, and how much he eats, a fair estimate of this school expense is $145.00 per quarter.

Tuition and Fees

	Matriculation	Tuition	Activity	Medical	Qtr. Total	Annual Total
Residents of Georgia	$80.00	None	$5.00	$3.50	$ 88.50	$265.50
Non-Residents of Georgia	$80.00	$100.00	$5.00	$3.50	$188.50	$565.50

Matriculation, tuition, student activity, and medical fees of veterans enrolled under P.L. 894 are paid by the Veterans Administration in accordance with the terms of that law.

Summary of Expenses

The following summary is based upon an academic year of three quarters in attendance by a regular student carrying as many as twelve hours of scholastic work, remedial or credit.

	Resident of Georgia	Non-Resident of Georgia
Matriculation, tuition, other fees	$ 265.50	$ 565.50
Board ($130.00 estimate qtr.), room ($70.00)	700.00	700.00
Board, Sundays and holidays	120.00	120.00
Books and supplies ($35.00 qtr.)	105.00	105.00
Slide rule and drawing instruments	40.00	40.00
Key and security deposit (refundable)	25.00	25.00
	$1255.50	$1555.50

The rates for fees, board, and room are subject to change at the end of any quarter.

* When the dormitory-dining hall facility is occupied, room and board will be sold as a unit.

Since Southern Tech does not operate a laundry, the cost of the student's laundry is not included in the prices stated on page 15.

The cost of a slide rule and a set of drawing instruments is a one-time cost. After the student has purchased these items of equipment in his first quarter, no additional outlay for them will be necessary.

Officials of Southern Tech regret that the school is not permitted to extend to parents and students the privilege of deferred payments of expenses. The cost of fees, tuition, room rent, books and supplies, etc., is, therefore, due on the day the student registers. All checks should be made payable to the Southern Technical Institute.

Matriculation Deposit

A matriculation deposit of $25.00 is required of all "new" (beginning) students when they submit their application for admission. This deposit serves as an added assurance that the student fully intends to enroll, and it reserves a place for him in the quarter he intends to matriculate. If the student does enroll, the $25.00 is applied to his first quarter's expenses; if he does not, it is refundable, *provided he makes a written request for it sixty days before the registration date of the quarter he was to enter Southern Tech.*

After the sixty-day period has begun, the $25.00 is refundable only if Southern Tech has refused him admission because of scholastic deficiencies (low SAT scores, poor overall record, lack of entrance units). The student's failure to file all admissions papers on time is not grounds for refunding the $25.00.

A request to transfer the $25.00 matriculation deposit to a later quarter may be made only once; and the request, in writing, must be received by the registrar sixty days before the original date the student was to enroll. A late request or failure to register for the quarter to which the request is granted will result in forfeiture of the $25.00.

Key and Security Deposit

A $25.00 key and security deposit must be made by all students — single and married — who live in a Marietta Housing Authority apartment. To assure a reservation in one of these apartments, a single student must send this deposit, along with an official application (room reservation card), to the Southern Technical Institute as soon as he is accepted for admission. No action can be taken on an application for a room unless the $25.00 deposit accompanies the application (reservation card). Married students make their deposit with the Marietta Housing Authority *and not with Southern Tech.*

The Key and Security deposit is refundable at the end of the school year

or at such time when the student may withdraw from school, provided he was officially enrolled in Southern Tech, turns in his apartment key, and has not been responsible for damage to his living facilities. If the student reserves living accommodations, makes the $25.00 key and security deposit, and does not enroll, the deposit is refundable, *provided he cancels his application for a room in writing at least 30 days before the official registration date of the quarter he was to enter.*

Late Registration

A late registration fee of $3.00 for the first day and $1.00 for the second and third days, the total amount not to exceed $5.00, will be charged. Exceptions to this regulation will be made for proved emergencies or for sickness certified by doctor's statements.

Other fees

Each member of the senior class must pay a diploma fee of $5.00 before graduating.

Examinations at other than the regular examination times will be granted in exceptional cases and only by faculty action. A fee of $2.00 will be charged in all such cases.

Refund of Fees

No portion of the student activity fee or the medical fee is refundable. Refund of tuition, room rent, and other educational fees will be made only upon official, written application for withdrawal and in accordance with the following schedule.

Students who formally withdraw within one week following the scheduled registration date are entitled to a refund of 80% of the fees paid for that quarter.

Students who formally withdraw during the period between one and two weeks after the scheduled registration date are entitled to a refund of 60% of the fees paid for that quarter.

Students who formally withdraw during the period between two and three weeks after the scheduled registration date are entitled to a refund of 40% of the fees paid for that quarter.

Students who formally withdraw during the period between three and four weeks after the scheduled registration date are entitled to a refund of 20% of the fees paid for that quarter.

Students who withdraw after a period of four weeks has elapsed from the scheduled registration date will be entitled to no refund of any part of fees paid for that quarter.

Definition of Legal Residence

To be considered a legal resident of Georgia for the purpose of registering at the Southern Technical Institute, a student must establish the following facts to the satisfaction of the registering officers:

(1) A student who is under 21 years of age at the time he seeks to register or re-register at the beginning of any quarter will be accepted as a resident student only upon a showing by him that his supporting parent or guardian has been legally domiciled in Georgia for a period of at least twelve months immediately preceding the date of registration or re-registration.

(2) In the event that a bona fide legal resident of Georgia is appointed as the guardian of a non-resident minor, such minor will not be permitted to register as a resident student until the expiration of one year from the date of the appointment, and then only upon proper showing that such appointment was not made to avoid the non-resident fee.

(3) If a student is over 21 years of age, he must show that *bona fide* residence in Georgia was established at least one year prior to the registration date. Any period of time during which a person is enrolled as a student in an educational institution in Georgia may not be counted as a part of the year's residence herein required when it *appears that the student came into the state and remained in the state for the primary purpose of attending a school or college.*

Veterans Program

The school is approved for the training of veterans under Public Law 550 (Korean) and Public Law 815 (Service Connected Disability) and for the training of sons of deceased veterans under Public Law 634. Veterans and sons of veterans eligible for training under any one of these bills should apply directly to the nearest Veterans Administration office for additional information.

Monthly subsistence checks are paid by the government directly to the P. L. 550 veteran or the mother of the war orphan, and the veteran or the mother is personally responsible to the school for expenses incurred by the student. Recipients of the financial assistance, however, do not begin to receive checks until at least a month and a half after the student is enrolled. The veteran or the war orphan should, therefore, come prepared to pay in advance for all fees, books and supplies, and room rent.

Health Care

The medical fee paid by the student entitles him to clinical services for minor illnesses by doctors at the Kennestone Hospital in Marietta. The facilities of the hospital on the main campus of the Georgia Institute of

Technology are available for the use of Southern Tech students who require temporary hospitalization.

Free service does not apply to the following: major surgery, elective surgery, specialist's care, orthopedic appliances, special laboratory examinations, special nurses, medications, hospitalization in cases of the more serious contagious diseases, or ill students who elect to remain outside the infirmary. In these instances the student's parent or guardian is responsible for such added expenses.

Scholarships, Part-Time Jobs, and Loans

Although the Southern Technical Institute's ways and means of financial assistance to worthy students are somewhat limited, the school does have the following types of financial aid to offer or recommend.

REGENTS' STATE SCHOLARSHIPS: The school participates in the scholarship fund set up for Georgia residents by the State of Georgia, and through this fund several scholarships are made available each year. The student applicant must prove a definite need for financial assistance, and he must rank high scholastically and have achieved good scores on the CEEB Scholastic Aptitude Test. Recipients of this grant must work in the state a year after graduation for each $1,000 granted, or repay the whole amount with interest.

CIVIC CLUB SCHOLARSHIPS. A number of civic clubs in the Marietta area have set up scholarship-loan funds for the use of Southern Tech students. This money, which generally covers only fees and books, is paid back after graduation. To qualify, a student must have completed at least two successful quarters at Southern Tech and prove a need for financial assistance.

OTHER SCHOLARSHIPS: Frequently other scholarships are offered. These, however, are not of the permanently established, yearly recurring type, but are available only in years when their donors honor Southern Tech by awarding them to outstanding, deserving students.

NDEA: Because the National Defense Education Act did not include technical institutes as participants, Southern Tech cannot offer prospective students any benefits set up in this bill.

For additional information concerning STI scholarships write to the Director of Student Aid, Southern Technical Institute, Marietta, Georgia.

PART-TIME CAMPUS JOBS: A few part-time jobs do exist on the Southern Tech campus. These, however, are limited in number and are restricted because of the nature of the work to be done. The majority of the jobs are of the type which require students more advanced in their study at Southern Tech than first-year men are. Many students do, however, work off-campus, though school officials discourage beginning students from doing so.

LOANS: To those who must have financial assistance to enter and remain in school, Southern Tech recommends The Pickett and Hatcher Educational Fund, Box 2128, Columbus, Georgia, a reliable concern which lends thousands of dollars each year to men and women who are determined to obtain a college education.

GEORGIA TECH LOAN FUND: Southern Tech students facing a financial crisis are eligible to apply for the needed assistance to the Georgia Tech Loan Fund. It must be understood that the obtainable loan is limited to $100.00, that it is granted only in emergencies, and that it must be repaid by the end of the quarter in which it is borrowed.

GAS FUEL TECHNOLOGY FOUNDATION: Under the new plan of financial assistance recently established by the Gas Fuel Technology Foundation, a student can borrow up to the full amount of his tuition and fees for six quarters at no interest until one year after he terminates his training in the Gas Engineering Technology course. Beginning one year after the termination of the Gas Engineering Technology course, the loan will bear interest at the rate of five percent per annum. The student is allowed a period of five years after completion of the course in which to repay the loan.

Information on how to secure one of these loans may be obtained from the Registrar, Southern Technical Institute, Marietta, Georgia.

CO-OP PLAN: One of the best means of financial assistance offered by Southern Tech is the opportunity to participate in one of its school-sponsored co-op plans. These plans are operative in all STI curricula. See page 56 for more detailed information concerning the co-op program at Southern Tech.

Placement Service

The Placement Service is available to all Southern Technical Institute graduates and candidates for graduation. The emphasis is directed toward placing students in their last quarter of study, but the service is also available any time after graduation. The chief function of the Placement Bureau is to guide and direct the student in obtaining the job most suitable for his individual abilities, likes, and dislikes.

This service includes maintaining active contact with approximately 4800 national concerns; keeping available for the students informative booklets, brochures, and industrial directories; arranging group and individual job interviews; and giving advice to the prospective graduate on any phase of job seeking.

As time permits, the Placement Bureau also helps students who need part-time work. Frequently calls come in from employers who seek student help. The Placement Office welcomes these and passes the opportunities

on to students who have registered with the Bureau for part-time employment.

Affairs of the Placement Bureau are carried on by a full-time director and a secretary. Their services are available at regularly scheduled hours.

Counseling Service

The student-faculty relationship at Southern Tech is based upon the friendly applied philosophy that every student is an individual, that all students occasionally have problems, and that no teacher, department head, dean, or other member of the administration is ever too busy to help students solve their problems.

In the fall of 1961 Southern Tech added a professionally trained, full-time counselor to its staff. His office is located in the Administration Building and is easily accessible to the students. Here he is available by appointment for testing, orientation, and academic, vocational, and special problems counseling. The job of the counselor is to help the students of Southern Tech get a better idea of their potentialities and capabilities and to bring about a better relationship with the world about them. New students are urged to come by and get acquainted.

Upon registration, every student is assigned to the head of the degree-granting department in which he is to do his major scholastic work. This man serves as the student's course adviser; and he is responsible for scheduling the student, following his scholastic progress, and assisting him if he encounters difficulty. The teachers at Southern Tech are helpful, and they spend many hours of their time in coaching and tutoring students who need additional help.

Close cooperation between student and teacher and the freedom granted the student to drop in on his teacher, course adviser, dean, the director, or the counselor to talk over a problem are two of the major contributing factors in the success Southern Tech has enjoyed throughout its existence.

Engineering technicians learn to use the library and books.

ACADEMIC REQUIREMENTS

Requirements for Admission

A qualified student may enroll in the Southern Technical Institute at the beginning of any quarter—fall, winter, spring, or summer. If, however, he enters in any quarter other than the fall, the school can not assure him that he can complete the six quarters' work in eighteen months' time, because of scheduling difficulties which are likely to arise.

To be accepted for admission, applicants must be graduates of accredited high schools or have passed satisfactorily the General Educational Development (GED) Tests. Also they should have credit for two high-school units of algebra, one of plane geometry, two of science (general science, biology, chemistry, or physics), and four of English. In addition, all applicants must have taken the College Entrance Examination Board Scholastic Aptitude Test (Verbal and Mathematical) and the CEEB Achievement Tests in Intermediate Algebra (Level I—Standard) and in English Composition and have submitted scores to the Southern Tech Registrar.

Results of the Achievement Tests in Mathematics and English will be used (1) to help determine more about the student's ability and knowledge in mathematics and English and (2) to guide members of the STI staff in correctly placing students in remedial, regular credit, or advanced sections in these fields. Some students are not ready for college algebra, even though they may have credit for two units of algebra. If test results prove that a student's knowledge is inadequate, he will be required to schedule and pass a quarter of non-credit, remedial algebra before attempting college algebra.

At least one unit of algebra is required for admission. For those students who lack a year of algebra or of plane geometry or of both but who qualify otherwise, pre-freshman courses in algebra and geometry are available. Furthermore, if a student is deficient in English or in science, he may

make up his deficiency through a one-quarter, remedial course in English or in science at Southern Tech after being admitted.

College Preparatory Quarter

For those students who cannot qualify for entrance because of low high-school averages, low SAT scores, or who otherwise wish to strengthen their preparation for college work, a pre-tech quarter of work will be offered during the summer quarter. For further information, write or call the Registrar at Southern Tech.

CEEB Tests

Further information about the College Board Scholastic Aptitude Tests and the Achievement Tests may be obtained from the student's high-school principal or counselor or by writing the College Entrance Examination Board, P. O. Box 592, Princeton, N. J.

Supplying information, administering and grading the tests, and furnishing the school the scores are functions and services of the CEEB; the student, therefore, will save time by writing directly to the Board for an application and its *Bulletin of Information.*

Admission Requirements

Applicants for admission must submit to the school the following:

1. *An Application for Admission, complete in every detail.*
2. *A $25.00 matriculation deposit.*
3. *A recent photograph.*
4. *A high-school transcript, if a graduate; if not a high-school graduate, a high-school transcript and an official copy of satisfactory scores on the General Education Development (GED) Tests.*
5. *A complete college transcript, if the applicant has had previous college work.*
6. *CEEB test scores on (1) Scholastic Aptitude Test, (2) Achievement Test in Intermediate Mathematics (Level I—Standard), and (3) Achievement Test in English. Required of all beginners and transfers except foreign students.*
7. *A VA Certificate of Eligibility of all veterans entitled to assistance from the G.I. Bill.*
8. *Doctor's certificate of health (from family physician).*

Filing of Papers

No application will be accepted after twenty days before the registration date of the quarter the student desires to enroll.

Students applying for admission for a fall quarter are urged not to wait later than March of their senior year to take the CEEB Scholastic Aptitude

Test and the Achievement Tests. Also they should make every effort to file an application and submit other entrance requirements by April 15 of their final year. A high-school transcript including all work but that of the student's last semester is a most vital document in determining acceptance or rejection and must be submitted before any action can be taken. Obtaining transcripts, high-school and college, is the student's responsibility. Have them sent directly to the STI Registrar.

There is reserved to every institution of the University System of Georgia the right to require any applicant for admission to take appropriate intelligence and aptitude tests in order that the institution may have information bearing on the applicant's ability to pursue successfully courses of study for which the applicant wishes to enroll and the right to reject any applicant who fails to meet such tests satisfactorily.

Advanced Standing

Students may be admitted for advanced standing by transfer from other technical institutes and colleges, or from universities. To transfer, the subjects must be of "C"-grade quality and must parallel closely subjects in the student's Southern Tech curriculum.

An official transcript of the student's previous college work must be submitted at least twenty days before the registration date of the quarter the student plans to enter Southern Tech.

Graduation Requirements

A student is eligible for graduation when he (1) has satisfactorily completed the required number of hours specified by the curriculum of the course in which he is specializing, (2) has achieved the necessary scholastic point average (1.80), (3) has paid all required fees, fines, and other financial obligations owed the school, and (4) has filed with the Registrar the official "Petition for Admission to Candidacy for a Degree."

Southern Tech awards an Associate in Engineering Degree to each student who satisfactorily completes the required program of study for his chosen field as outlined in this catalogue.

Only one graduation exercise a year is held—that in June, at the end of the spring quarter.

Grade Reports

Reports on students are mailed to parents soon after the close of each academic quarter. Reports are also sent to parents at mid-quarter, if the students are failing in any subject. If a student is passing all subjects, no report is made on his work until the end of the quarter.

Minimum Class Sizes

No classes will be scheduled in service subjects (English, drawing, physics, mathematics, chemistry, and a number of specialized subjects serving more than one curriculum) with enrollments of less than twelve students; other subjects will not be offered with enrollments of less than ten.

Rules and Regulations

Every student is obligated to become thoroughly acquainted with *The Green Hornet,* student handbook of the Southern Technical Institute, the contents of which are just as official as those of this catalogue. From this booklet he will gain vital information concerning attendance, grades, point averages, conduct, withdrawal from school, activities, etc.

Students are also responsible for all official announcements which appear in "The Weekly Bulletin" and *The Engineering Technician,* student monthly newspaper.

Extracurricular activities at Southern Tech range from sports like basketball (left) to social events like school dances.

EXTRACURRICULAR ACTIVITIES

Not all of a student's time at Southern Tech is spent in scholastic pursuits in the classroom, in homework, and in laboratories. In fact, officials of the Southern Technical Institute believe so strongly in the benefits of extracurricular activities that they urge every student to participate in them. These student activities are most helpful in developing good health, the social graces, well-rounded personalities, and dependable leadership. They offer the student wholesome diversion from classroom, shop, and laboratory, and give him opportunities for creative self-expression. They build school spirit, keep it bouyant, and serve to unify administration, instructors, and students into one enthusiastic, loyal group. The Southern Technical Institute sponsors an athletic program, a school paper, a yearbook, social events, and worthwhile student organizations.

Publications

Students who are interested in publications may become members of the staffs of the student newspaper and the yearbook. *The Engineering Technician,* a monthly newspaper, and the *Technician's Log,* a yearbook published each June, are sponsored and produced by students. These publications offer excellent opportunities for writers, cartoonists, and advertising salesmen to acquire valuable experience and to extend their interests into activities outside their courses of study.

Staff members who meet the requirements of publications work receive special recognition on Awards Day near the end of the spring quarter, when keys, trophies, letters, and other awards are presented to students who have been outstanding in extracurricular activities.

Athletics

The athletic program has been developed in two separate phases, intramural and intercollegiate. Intramural competition is between departments and includes basketball, volleyball, tennis, golf, and softball. A trophy is presented to the winning department at the end of the year. An All-Campus team is selected in all the major sports.

Intercollegiate competition is conducted with schedules in varsity and freshman basketball, baseball, golf, tennis, and track and cross country. An athlete who earns a letter in an intercollegiate sport is eligible for membership in the Monogram Club. This club has as its purpose the development of sportsmanship and athletics at Southern Technical Institute. One phase of this is in the sponsorship of the intramural program, where the varsity athletes act as department coaches and game officials for all intramural competitions.

Available athletic facilities include a full-size college basketball court, tennis courts, baseball and softball diamonds, and a volleyball court.

Campus Organizations

At least twenty-two different campus organizations exist at Southern Tech for the purposes of providing fellowship and fun, information, and opportunities for training in leadership and in social and personal development. Each student has his departmental club: Architectural's Alpha Beta Sigma, Mechanical's Alpha Mu Sigma, Textile's Tau Epsilon Chi, Electrical's Epsilon Pi Chi and Institute of Radio Engineers (IRE), Industrial's Iota Tau, Civil's Sigma Chi Tau, and Gas Fuel's Gamma Phi Kappa. These clubs provide opportunities for participation in creative projects, intramural sports, and such social functions as fish fries, barbecues, picnics, and dances. Visiting speakers, many of whom are specialists in their field, inform the club member along his line of interest.

In addition, a student may become a member of several live, progressive, campus-wide organizations, depending upon his interests and qualifications —the Camera Club, the Ham Club, the Glee Club, the International Club, the Society for the Advancement of Management (SAM), the Toastmasters International, Circle "K", the Wesley Foundation, and the American Society of Tool & Manufacturing Engineers (A.S.T.M.E.)

Superior scholastic achievement is recognized by membership in the Tau Alpha Pi National Honor Society, the original chapter of which was founded on the Southern Tech campus. Athletic achievement is honored through membership in the Monogram Club. A student may participate in joint Student-Faculty Rules and Regulations and Honor Committees; or, elected to represent his department on the Student Council, he may take part in controlling elections, supervising student activities, chartering student organizations, and conducting group meetings.

HELPFUL REMINDERS

REACHING MARIETTA, 18 miles northwest of Atlanta.

BY PLANE: To Atlanta Municipal Airport; ride airport bus into city; board Greyhound bus at corner of Walton and Cone Streets, and ride to Marietta; engage taxi to STI.

BY TRAIN OR BUS INTO CITY: Get Greyhound Bus at corner of Walton and Cone Streets and ride to Marietta; engage taxi to STI.

BY AUTOMOBILE: From east over Route 12, 78, or 29—Travel Ponce de Leon Avenue to Peachtree Street; turn left on Peachtree and go one block to North Avenue; turn right on North Avenue and go to the North Expressway; follow the expressway and Route 41 to Clay Street (1 mile north of Lockheed); turn left at Clay Street and left at Martin Street to enter the campus.

From northeast over Route 23—Follow expressway to Route 41; follow Route 41 to Clay Street (1 mile north of Lockheed); turn left at Clay Street and left at Martin Street to enter the campus.

From north over Route 19—To Roswell on 19; turn right on Georgia 120 and go to Route 41 at Marietta; turn left and follow Route 41 to Clay Street; turn right at Clay Street and left at Martin Street to enter the campus.

From northwest over Route 41—Follow Route 41 to Clay Street (just south of Marietta); turn right at Clay Street and left at Martin Street to enter the campus.

From west over Route 78—Follow Route 78 to Atlanta; follow North Avenue to Route 41 (North Expressway); turn left at Route 41; follow Route 41 to Clay Street (1 mile north of Lockheed); turn left at Clay Street and left at Martin Street to enter the campus.

From south over Routes 41, 19, 29, 85, 23, and 42—Williams Street, North Avenue, Tenth Street, or Piedmont Avenue to Route 41 (North Expressway); follow Route 41 to Clay Street (1 mile north of Lockheed); turn left at Clay Street and left at Martin Street to enter the campus.

* * *

WHAT TO BRING—Students should remember to bring bed linens (4 sheets, 2 pillowcases), a mattress cover, 2 blankets, a pillow; a bathrobe; a desk lamp; and any other personal items which would add to comfort, convenience, and attractiveness of their rooms—radio, curtains, pictures, etc.

SCHOOL CLOTHING—STI students dress informally. A few do wear suits; many choose slacks, shirt, and warm jackets; others find khaki or denim trousers and matching shirt appropriate and acceptable. Every student should bring clothing suitable for wear in shops and labs.

DRAFT DEFERMENT—Southern Tech students are subject to the same draft-deferment regulations accorded other college students over the nation. A student is deferred for his first school year as long as his work is satisfactory, and for the second if he makes the upper half of the class.

* * *

LAUNDRY SERVICE—The school operates no laundry. Commercial firms will make scheduled pickups and deliveries to the dormitories for dry cleaning and laundry.

* * *

PAYMENT OF EXPENSES—All fees ($88.50) for residents of Georgia and $100.00 additional for non-residents, cost of books and supplies (about $35.00 per quarter exclusive of drawing instruments and slide rule), and room rent ($70.00 per quarter) are payable in advance on registration day. A $25.00 key and security deposit is also required of all students—married or single—who live in a Marietta Housing Authority unit.

* * *

STUDENT AUTOMOBILES—STI students are permitted to keep automobiles on the campus as long as they operate them safely, courteously, and moderately. If this principle is violated, privilege of keeping the car at school will be denied.

Furthermore, all student automobiles must be officially registered with the Dean of Students and each owner assigned a specific operator's permit before the car can be driven on the campus.

* * *

ENTRANCE EXAMINATIONS—With the exception of the College Board SAT, no examinations to determine whether a student will or will not be admitted are required, although a battery of tests for guidance and counseling purposes is administered to each student in his first week of school.

Results of the CEEB Achievement Tests in Intermediate Mathematics (Level I - Standard) and in English, now required of entering freshmen and transfers, will be used to determine aptitude and ability in basic algebra and English, and remedial courses in these subjects are provided for those not meeting minimum requirements.

* * *

EVENING SCHOOL CLASSES—Five of the eleven curricula offered in the Southern Technical Institute Day School may be studied and completed in the evening on the main campus of the Georgia Institute of Technology. The Associate in Engineering degree may be earned through this study in these engineering technologies: Architectural, Civil, Electrical (Electronics), Industrial, and Mechanical. Also some of the subjects in these curricula are frequently taught at night on the Southern Tech campus in Marietta. Especially is this true of the scholastic work which utilizes STI laboratory facilities to the greatest advantage.

Students interested in Evening School study, whether on the STI Marietta campus or on Tech's downtown campus, should know that all details of registration, scheduling of subjects, and payment of fees are handled by the Engineering Extension Division office on the Georgia Tech campus.

The fact that five of Southern Tech's Day School curricula are also offered at night means that students who wish to do so may take a part of their training in the evening. Conversely it frequently happens that an STI Day School student finds that he can advantageously work a quarter in the day time and earn credits at night by attending evening classes on the Atlanta campus.

* * *

WHEN TO REPORT—All beginning students are expected to be on the STI campus by 10 A.M. of the first day in the quarter.

Southern Tech graduates now receive the Associate in Engineering degree.

Southern Technical Institute

Marietta Georgia

This Certifies That

Robert Eugene Henderson

having satisfactorily completed the engineering technician's course of study authorized by the Board of Regents of the University System of Georgia and prescribed by the Georgia Institute of Technology for the Southern Technical Institute, is hereby awarded

the degree of

Associate

in

Industrial Engineering Technology

Given under our hands, this 13th day of June, 1964

E. D. Harrison
President, Georgia Institute of Technology

D. L. McLane
Director, Southern Technical Institute

L. V. Johnson
Director, Engineering Extension Division

L. Y. Bryant
Registrar, Southern Technical Institute

COURSES OF STUDY

The Southern Technical Institute offers courses of study in the following eleven technical fields:

Air Conditioning Engineering Technology
Architectural Engineering Technology
Civil Engineering Technology (Surveying & Construction Option)
Civil Engineering Technology (Structural Materials and Design Option)
Electrical Engineering Technology (Electronics Option)
Electrical Engineering Technology (Telephone Option)
Gas Engineering Technology
Industrial Engineering Technology
Industrial Engineering Technology (Management Option)
Mechanical Engineering Technology
Textile Engineering Technology

These curricula have in common a number of features which deserve to be emphasized. First, all eleven are the same in length—six quarters of approximately twelve weeks each, or two academic years of three quarters. All courses are about the same in scholastic difficulty, and all require above-average scholastic aptitude. Every curriculum is so built that the student must spend approximately seventy percent of his time in the study of theory and thirty percent in laboratory application. This combination of the theoretical and the practical assures that the graduate technician possesses not only a sound, thorough, rather extensive knowledge of the principles of applied engineering in the field of his specialization but also an adequate knowledge of the work of the skilled craftsman as well.

Every STI curriculum, furthermore, makes certain that the student studies subject material in four distinct though related areas:

1. The COMMUNICATION SKILLS of engineering drawing, speaking, writing, interpreting and transmitting technical data and reports, and reading electrical circuit diagrams, blueprints, and the like.

2. The BASIC SCIENCES of mathematics, chemistry, and physics.

3. SUPERVISORY AND MANAGEMENT TRAINING—essential to many graduates who enter the ranks of professional management and, therefore, need to know how to coordinate men and materials in achieving maximum production.

4. A TECHNICAL SPECIALTY—that body of subject matter which is peculiar to each STI curriculum and which contributes so much toward the student's becoming a technical specialist.

Finally, all eleven curricula lead to the Associate in Engineering degree as their graduation credential.

In the pages which follow, each course of study is outlined and all subjects are described briefly.

AIR CONDITIONING ENGINEERING TECHNOLOGY

The expanding air conditioning industry has become one of the largest in the country. In addition to the residential and commercial comfort air conditioning, there is a constantly growing application to industrial processing.

The air conditioning course is designed to train engineering technicians to plan, select and supervise installation, operation, and maintenance of heating, air conditioning, and refrigerating equipment. Basic courses in chemistry, physics, mathematics, drawing, human relations, public speaking, and technical writing are included.

Graduates of the course have excellent job opportunities leading to responsible positions in an expanding industry.

A more detailed description of each subject is given in the back of this catalogue.

FIRST YEAR

First Quarter	C—L—T
Chem. 112 (Gen. Chemistry)	5—3—6
Draw. 111 (Engr. Draw. I)	0—6—2
Eng. 111 (Comp. & Rhet.)	3—0—3
I.E.T. 111 (Human Relations)	3—0—3
Math. 111 (Algebra)	5—0—5
Total	16—9—19

Second Quarter	C—L—T
A.C.E.T. 141 (Tech. Msmts.)	2—3—3
Draw. 112 (Engr. Draw. II)	0—6—2
G.E.T. 113 (Theory of Gases)	3—0—3
Math. 112 (Trigonometry)	5—0—5
Phys. 131 (Mechanics)	5—3—6
Total	15—12—19

Third Quarter	C—L—T
A.C.E.T. 112 (Elec. Controls)	5—0—5
G.E.T. 122 (Gas Util. I)	5—3—6
Math. 114 (Analyt. & Calc.)	5—0—5
Phys. 132 (Electricity)	3—3—4
Total	18—6—20

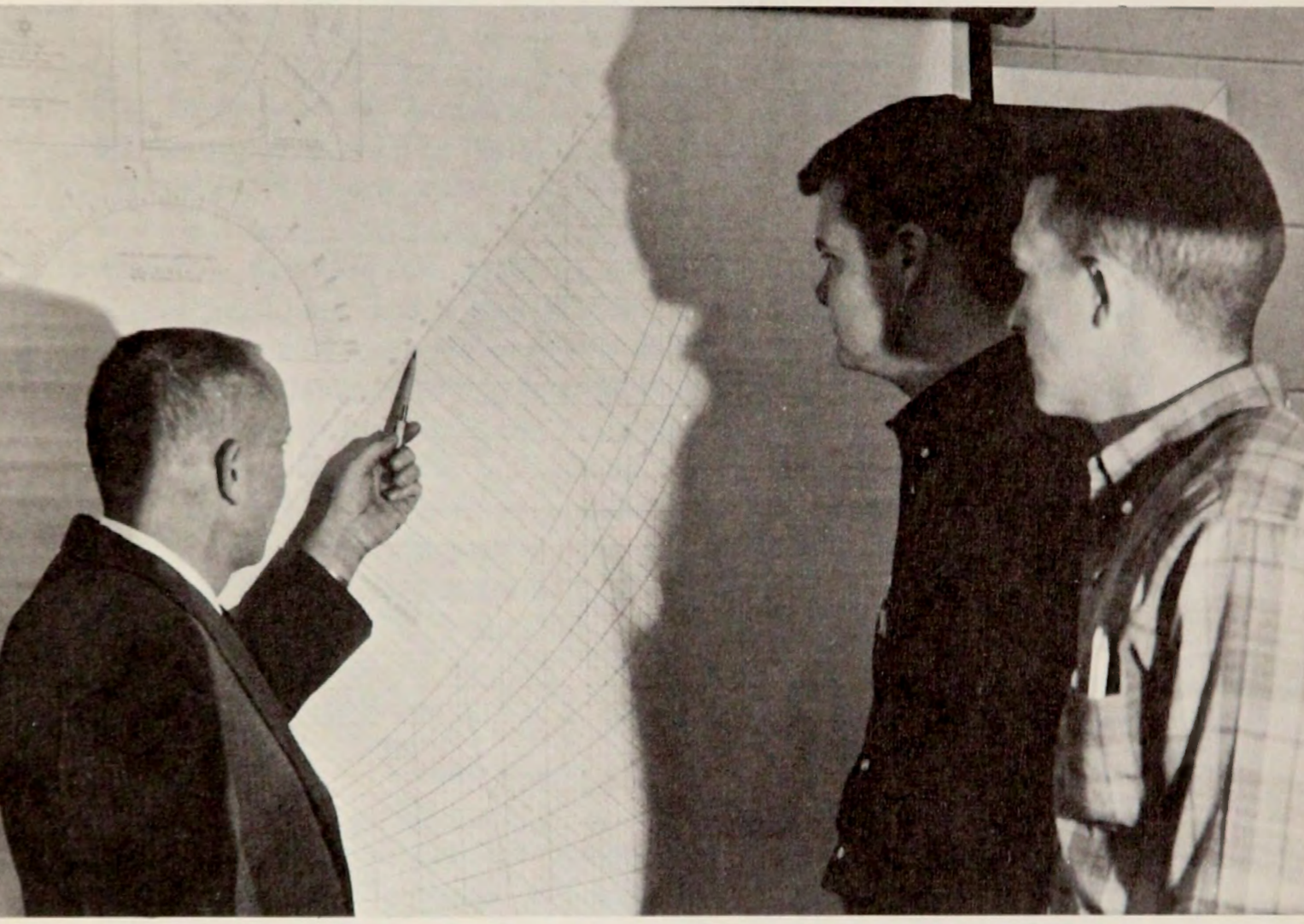
SECOND YEAR

Fourth Quarter	C—L—T
A.C.E.T. 224 (Res. AC)	5—3—6
A.C.E.T. 231 (Refrig. I)	3—3—4
Eng. 112 (Comp. & Rhet.)	3—0—3
M.E.T. 217 (Thermo. I)	3—0—3
Phys. 133 (Ht., Snd., Lt.)	3—3—4
Total	17—9—20

Fifth Quarter	C—L—T
A.C.E.T. 225 (Air Cond. I)	5—3—6
A.C.E.T. 232 (Refrig. II)	3—3—4
Eng. 221 (Public Speaking)	3—0—3
I.E.T. 243 (Business Law)	3—0—3
M.E.T. 218 (Thermo. II)	2—0—2
Phys. 134 (Modern Physics)	2—0—2
Total	18—6—20

Sixth Quarter	C—L—T
A.C.E.T. 226 (Air Cond. II)	5—3—6
A.C.E.T. 227 (Air Cond. Des.)	0—6—2
A.C.E.T. 212 (Control Sys.)	5—3—6
Eng. 231 (Tech. Writing)	3—0—3
I.E.T. 261 (Seminar)	1—0—1
Total	14—12—18

Under quarters C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.



Psychrometry is the basis of air conditioning design.

Positions Now Held By STI Graduates of Air Conditioning

Technical Sales Representative (Sales Engineer)
Heating System Designer
Assistant to Consulting Engineer
Heating Contractor
Manager of Service Department Training
Air Conditioning Layout Draftsman
Service Engineer
Refrigeration Instructor
Laboratory Technician (Refrigeration)
Controls Technician

ARCHITECTURAL ENGINEERING TECHNOLOGY

Architectural Engineering Technology is concerned with the design, supervision, and construction of homes, factories, schools, stores, and municipal projects. The work is at once creative and practical; the student is taught to design, draw plans, and follow through with construction details and methods.

Emphasis is placed on construction practices, which include such subjects as building specifications and codes, blueprint reading, building design, and costs and estimates. Basic subjects such as physics, mathematics, English, human relations, technical writing, and public speaking are included.

Successful graduates in this course are presented with many varied job opportunities in architectural and engineering offices and with building contractors and manufacturers of building materials.

A more complete description of each subject is given in the back of this catalogue.

FIRST YEAR

First Quarter	C—L—T
A.E.T. 141 (Arch. Wkg. Dr.)	3—0—3
A.E.T. 142 (Bldg. Mats.)	3—0—3
Draw. 111 (Engr. Drawing)	0—6—2
Eng. 111 (Comp. & Rhet.)	3—0—3
I.E.T. 111 (Human Relations)	3—0—3
Math. 111 (Algebra)	5—0—5
Total	17—6—19

Second Quarter	C—L—T
A.E.T. 126 (Desc. Geometry)	2—6—4
C.E.T. 111 (Graphic Statics)	0—3—1
C.E.T. 113 (Engr. Mech.)	2—0—2
C.E.T. 123 (Elem. Surv. I)	1—3—2
Math. 112 (Trigonometry)	5—0—5
Phys. 131 (Mechanics)	5—3—6
Total	15—15—20

Third Quarter	C—L—T
A.E.T. 127 (Graphics)	3—9—6
A.E.T. 231 (Arch. History)	3—0—3
C.E.T. 114 (Str. of Mat.)	3—3—4
Eng. 112 (Comp. & Rhet.)	3—0—3
Math. 114 (Analyt. & Calc.)	5—0—5
Total	17—12—21

SECOND YEAR

Fourth Quarter	C—L—T
A.E.T. 217 (Steel & Timber St.)	3—3—4
A.E.T. 222 (Bldg. Design)	3—9—6
C.E.T. 125 (Arch. Surveying)	0—3—1
C.E.T. 216 (Ind. Struc. Anal.)	3—0—3
Eng. 221 (Public Speaking)	3—0—3
Phys. 132 (Electricity)	3—3—4
Total	15—18—21

Fifth Quarter	C—L—T
A.E.T. 218 (Reinf. Conc. St.)	3—3—4
A.E.T. 224 (Bldg. Design)	3—9—6
A.E.T. 243 (Bldg. Equip.)	3—0—3
C.E.T. 213 (Struc. Drafting)	0—6—2
Phys. 133 (Ht., Sound., Lt.)	3—3—4
I.E.T. 261 (Seminar)	1—0—1
Total	13—21—20

Sixth Quarter	C—L—T
A.E.T. 219 (Ult. Load Struc.)	3—0—3
A.E.T. 223 (Bldg. Design)	3—9—6
A.E.T. 244 (Estimating)	3—3—4
C.E.T. 212 (Struc. Drafting)	0—6—2
Eng. 231 (Tech. Writing)	3—0—3
Phys. 134 (Modern Phys.)	2—0—2
Total	14—18—20

Under Quarters, C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.

Positions Now Held By STI Graduates of Architectural Engineering Technology

Engineering Draftsman
Estimator-Expediter
Factory Representative
General Contractor
Superintendent and Estimator
Structural draftsman
Architectural Engineer
Building Contractor
Junior Engineer
Engineering Assistant
Architectural Draftsman
Architectural Draftsman and Estimator
Building Materials Salesman
Building Inspector
Appraiser and Inspector
Licensed Architect

Estimating Costs from Architectural Drawings.

CIVIL ENGINEERING TECHNOLOGY

Surveying and Construction Option

The general field of Civil Engineering Technology is one of the broadest of the technological curricula. It includes many fields which, although not directly Civil Engineering Technology subjects, require a knowledge of Civil Engineering Technology and the principles of this subject. The civil engineering technician is a versatile person. He is a surveyor and a construction man, not only on buildings but on hydroelectric projects, flood control work, highway and railroad construction, airports, sewerage and water supply systems, locks, dams, tunnels, aqueducts, and similar projects. It is the purpose of this course to qualify the student in any of these various fields so that he can handle his position with a minimum of supervision.

A more complete description of each subject is given in the back of this catalogue.

FIRST YEAR

First Quarter	C—L—T
Chem. 112 (Gen. Chem.)	5—3—6
C.E.T. 100 (Off. Prac.)	0—3—1
C.E.T. 123 (Elem. Sur. I)	1—3—2
Draw. 111 (Engr. Draw I)	0—6—2
Eng. 111 (Comp. & Rhet.)	3—0—3
Math. 112 (Trigonometry)	5—0—5
Total	14–15–19

Second Quarter	C—L—T
C.E.T. 111 (Graphic Statics)	0—3—1
C.E.T. 113 (Engr. Mech.)	2—0—2
C.E.T. 124 (Elem. Surv. II)	2—6—4
C.E.T. 214 (Mat. Testing)	1—3—2
Math. 111 (Algebra)	5—0—5
Phys. 131 (Mechanics)	5—3—6
Total	15–15–20

Third Quarter	C—L—T
C.E.T. 114 (Str. of Mat.)	3—3—4
C.E.T. 122 (Route Surveying)	3—6—5
C.E.T. 132 (Hwy. Const.)	2—3—3
C.E.T. 232 (Heavy Const.)	2—3—3
Math. 114 (Analyt. & Calc.)	5—0—5
Total	15–15–20

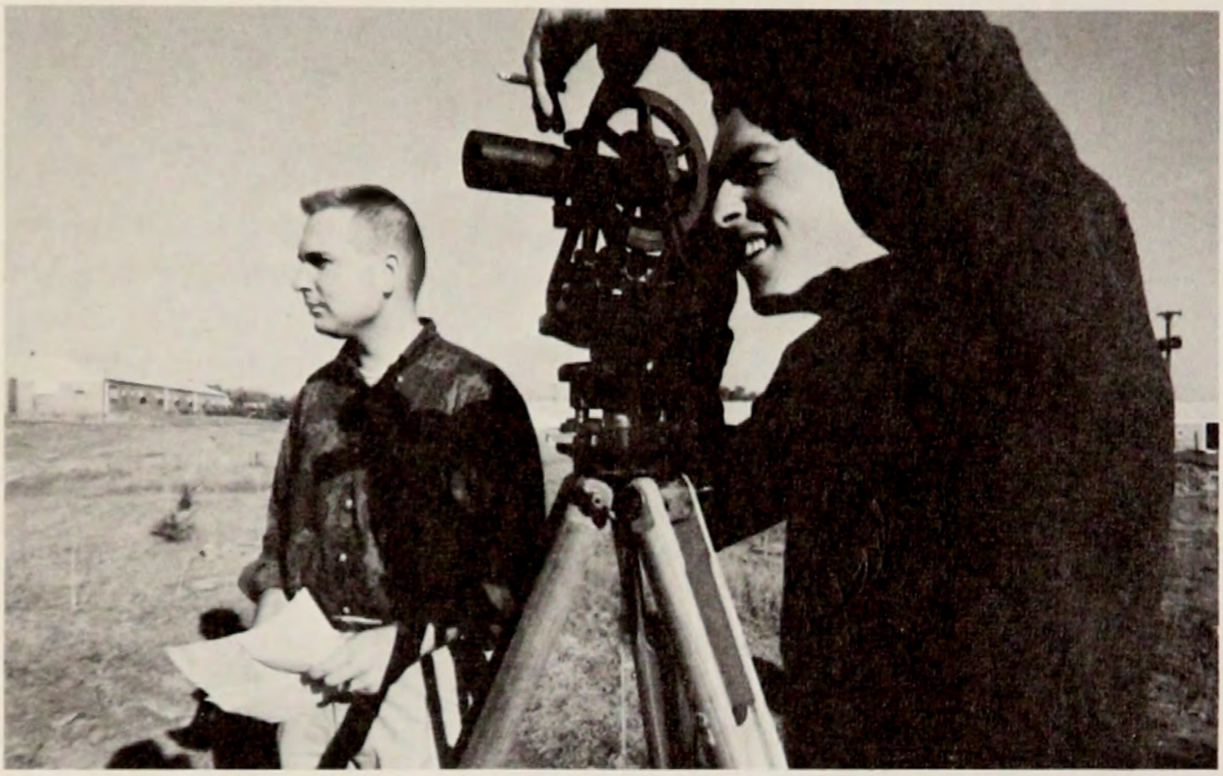
SECOND YEAR

Fourth Quarter	C—L—T
A.E.T. 142 (Bldg. Mats.)	3—0—3
C.E.T. 201 (Surv. Data Proc. Equip.)	0—3—1
C.E.T. 223 (Land Surv.)	3—6—5
C.E.T. 243 (Hydraulics)	3—0—3
C.E.T. 244 (W & S Systems)	1—3—2
Eng. 112 (Comp. & Rhet.)	3—0—3
Physics 132 (Electricity)	3—3—4
Total	16–15–21

Fifth Quarter	C—L—T
A.E.T. 244 (Estimating)	3—3—4
C.E.T. 215 (Soil Mechanics)	2—3—3
C.E.T. 224 (Top., Cont., Surv.)	2—6—4
Eng. 221 (Public Spkg.)	3—0—3
Phys. 133 (Ht., Sound, Lt.)	3—3—4
Phys. 134 (Modern Phys.)	2—0—2
Total	15–15–20

Sixth Quarter	C—L—T
C.E.T. 213 (Struct. Draft)	0—6—2
C.E.T. 225 (Adv. Surv.)	2—3—3
C.E.T. 233 (Const. Est.)	1—3—2
C.E.T. 251 (Photogrammetry)	0—6—2
Eng. 231 (Tech. Writing)	3—0—3
I.E.T. 111 (Human Relations)	3—0—3
I.E.T. 243 (Business Law)	3—0—3
I.E.T. 261 (Seminar)	1—0—1
Total	13–18–19

Under quarters C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.



Civil students spend much time in the field.

Positions Now Held By STI Graduates of Civil Engineering Technology

Instrument Man, Recorder, Party Chief on Survey parties
Assistant to the City Engineer
Assistant to Professional Civil Engineer
Photogrammetric Technician
Cartographer
Topographer
Topographic Draftsman
Structural Draftsman
Concrete Laboratory Technician
Inspector or Estimator on Heavy Construction Jobs
Subdivision Designer
Licensed Professional Surveyor

CIVIL ENGINEERING TECHNOLOGY

Structural Materials and Design Option

With the advent of the new concepts in structural shapes, the structural area of the field of Civil Engineering has grown to a degree that requires greater knowledge of design and advanced techniques of construction. Because of the great demand for technicians in this field, Southern Tech has expanded its Civil Engineering Technology Course to include a Structural Option. This option will prepare the graduate more specifically for those positions that involve the design, plan preparation, construction, and the inspection of the more modern structures built today.

Since the first three quarters of the Civil Engineering Technology options are the same, a student may elect, after his first year in Civil Engineering Technology, to pursue the field in which his interests lie.

FIRST YEAR

First Quarter	C—L—T
Chem. 112 (Gen. Chem.)	5—3—6
C.E.T. 100 (Off. Prac.)	0—3—1
C.E.T. 123 (Elem. Surv. I)	1—3—2
Draw. 111 (Engr. Dr. I)	0—6—2
Eng. 111 (Comp. & Rhet.)	3—0—3
Math. 112 (Trigonometry)	5—0—5
Total	14–15–19

Second Quarter	C—L—T
C.E.T. 111 (Graphic Statics)	0—3—1
C.E.T. 113 (Engr. Mech.)	2—0—2
C.E.T. 124 (Elem. Surv. II)	2—6—4
C.E.T. 214 (Mat. Testing)	1—3—2
Math. 111 (Algebra)	5—0—5
Phys. 131 (Mechanics)	5—3—6
Total	15–15–20

Third Quarter	C—L—T
C.E.T. 114 (Str. of Mat.)	3—3—4
C.E.T. 122 (Route Surveying)	3—6—5
C.E.T. 132 (Hwy. Const.)	2—3—3
C.E.T. 232 (Heavy Const.)	2—3—3
Math. 114 (Analyt. & Calc.)	5—0—5
Total	15–15–20

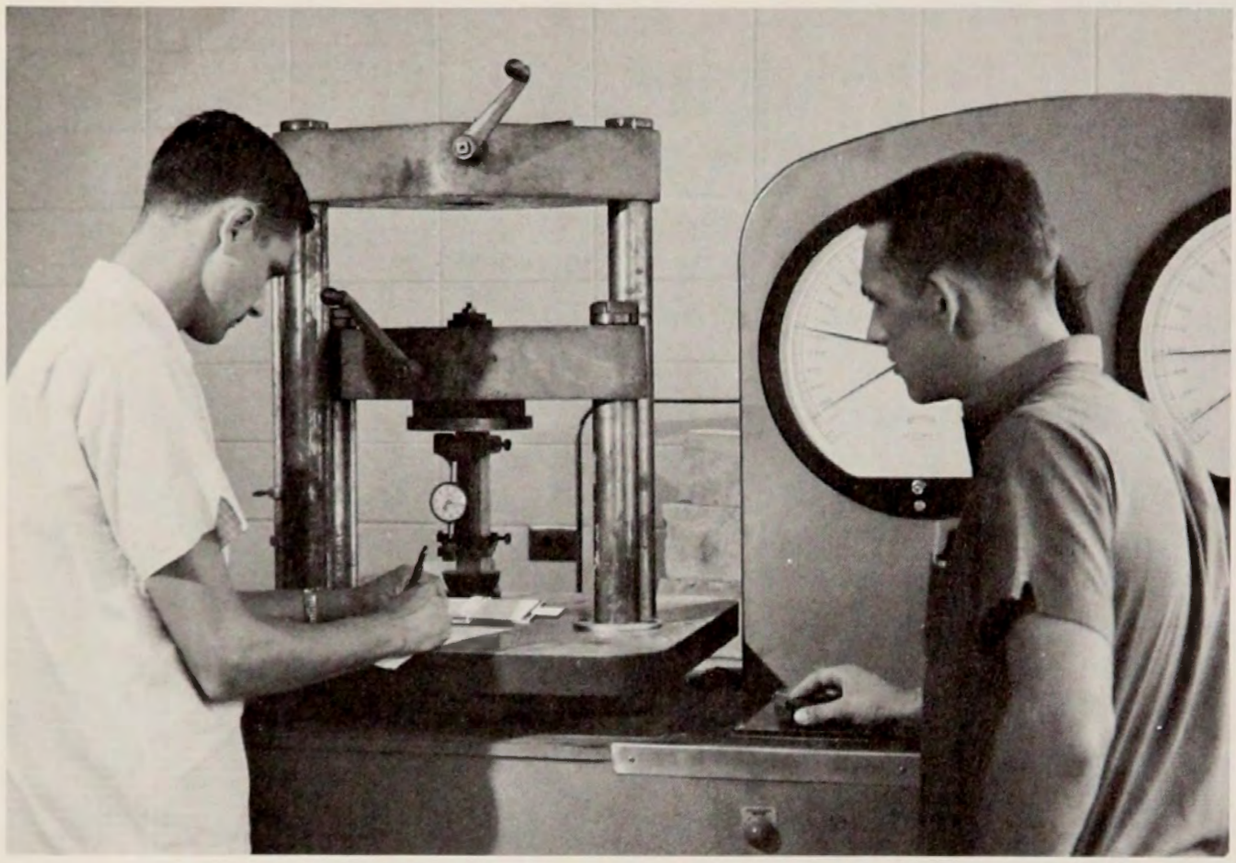
SECOND YEAR

Fourth Quarter	C—L—T
A.E.T. 142 (Bldg. Materials)	3—0—3
A.E.T. 217 (Steel & Timber St.)	3—3—4
C.E.T. 201 (Surv. Data Proc. Equip.)	0—3—1
C.E.T. 213 (Struc. Drafting)	0—6—2
C.E.T. 216 (Ind. Struc. Anal.)	3—0—3
Eng. 112 (Comp. & Rhet.)	3—0—3
Phys. 132 (Electricity)	3—3—4
Total	15–15–20

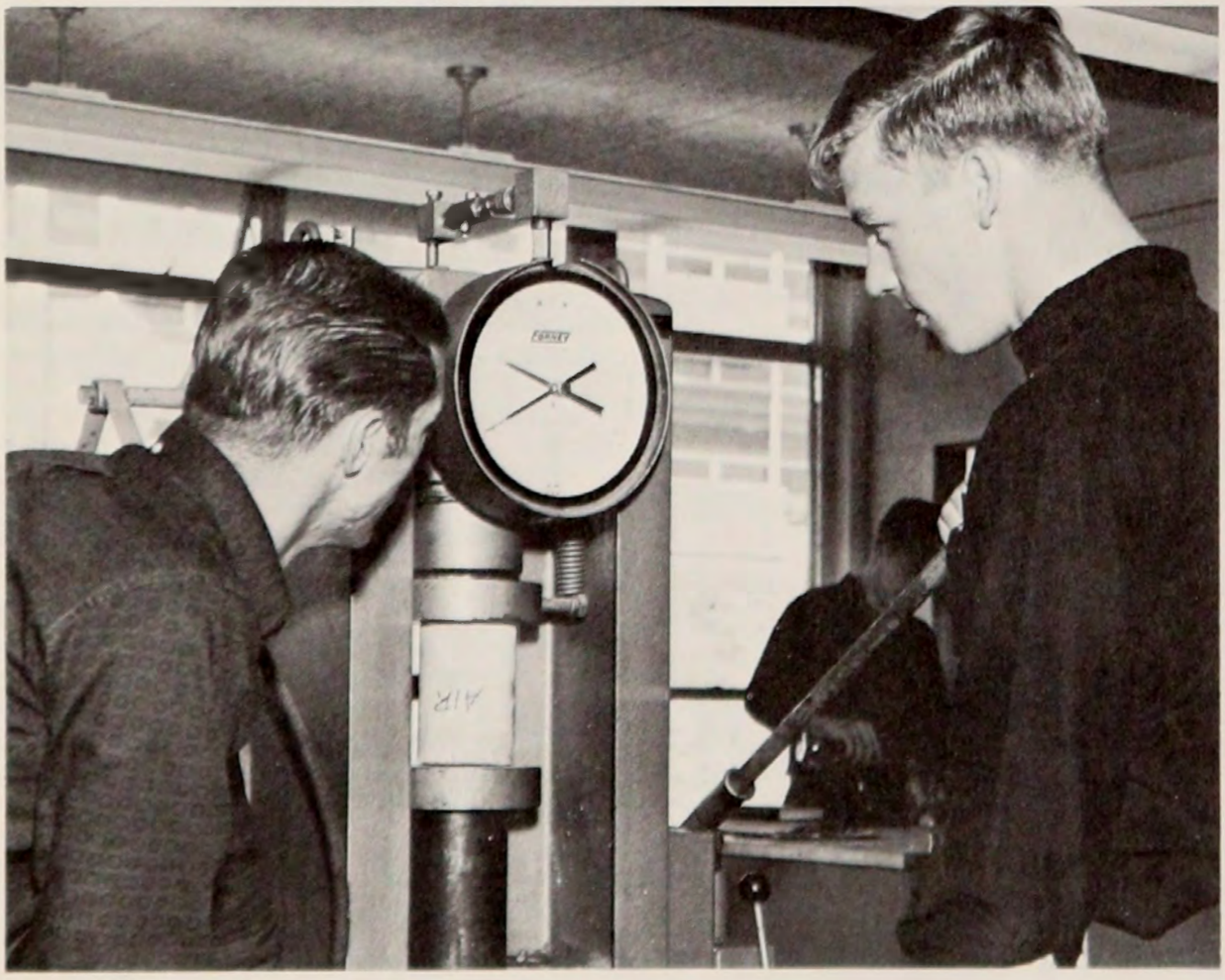
Fifth Quarter	C—L—T
A.E.T. 218 (Reinf. Conc. St.)	3—3—4
A.E.T. 244 (Estimating)	3—3—4
C.E.T. 215 (Soil Mechanics)	2—3—3
C.E.T. 243 (Hydraulics)	3—0—3
Eng. 221 (Public Spkg.)	3—0—3
Phys. 133 (Ht., Sound, Lt.)	3—3—4
Total	17–12–21

Sixth Quarter	C—L—T
C.E.T. 217 (Struc. Design)	3—3—4
C.E.T. 212 (Struc. Drafting)	0—6—2
Eng. 231 (Tech. Writing)	3—0—3
I.E.T. 111 (Human Relations)	3—0—3
I.E.T. 243 (Business Law)	3—0—3
I.E.T. 261 (Seminar)	1—0—1
Phys. 134 (Modern Phys.)	2—0—2
Total	15—9–18

Under quarters C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.



A modern testing laboratory is necessary in structural engineering technology.



ELECTRICAL ENGINEERING TECHNOLOGY

Electronics Option

The Electrical Engineering Technology curriculum was planned to provide (1) general training in the mathematics and the physical sciences; (2) general training in composition and rhetoric, personnel relations, technical writing, and public speaking; (3) specific training in electrical and electronic circuitry, transmission lines, wave filters, instrumentation and test equipment, rotating electric machinery, industrial electronic control equipment, telemetering, and pulse circuitry.

Graduates of Electrical Engineering Technology should be able to fill responsible positions in the fields of electrical power and electronics, such as electronics laboratory and research technicians, systems engineers, and many other rewarding jobs in the generation and distribution of electrical power and the many branches of electronics.

A more detailed description of each subject is given in the back of this catalogue.

FIRST YEAR

First Quarter	C—L—T
E.E.T. 134 (Intro. to E.E.T.)	5—3—6
Eng. 111 (Comp. & Rhet.)	3—0—3
I.E.T. 111 (Human Relations)	3—0—3
Math 110 (Algebra & Trig.)	5—0—5
Total	16—3—17

Second Quarter	C—L—T
E.E.T. 257 (Circuits & Mach.)	5—3—6
Eng. 112 (Comp. & Rhet.)	3—0—3
Math 114 (Calculus I)	5—0—5
Phys. 131 (Mechanics)	5—3—6
Total	18—6—20

Third Quarter	C—L—T
E.E.T. 121 (A. C. Circuits)	5—3—6
E.E.T. 135 (Basic Electronics)	5—3—6
Math 213 (Calc. II for E.E.T.)	5—0—5
Phys. 132 (Electricity)	3—3—4
Total	18—9—21

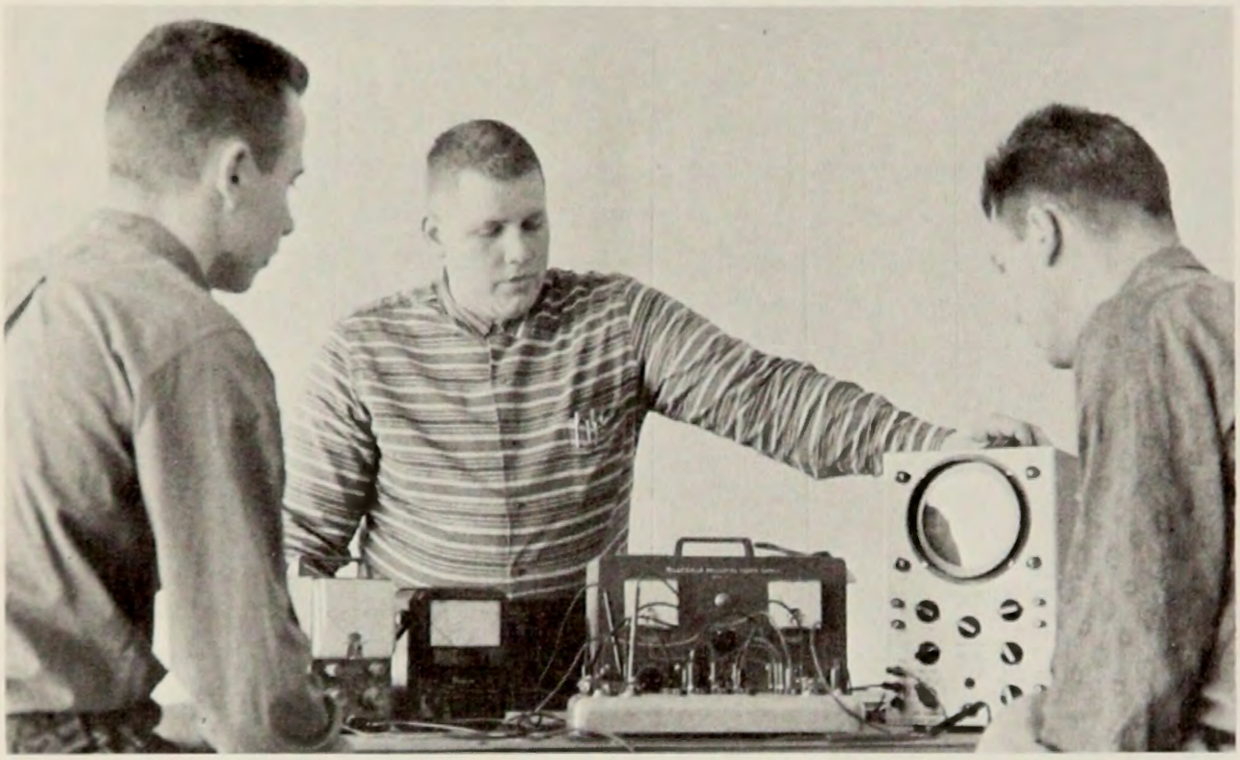
SECOND YEAR

Fourth Quarter	C—L—T
E.E.T. 122 (A. C. Circuits)	5—3—6
E.E.T. 232 (Ind. Electronics)	5—3—6
E.E.T. 244 (Comm. Circuits)	3—3—4
Phys. 133 (Ht., Sound, Lt.)	3—3—4
Total	16–12–20

Fifth Quarter	C—L—T
E.E.T. 234 (Adv. Electronics)	5—3—6
*E.E.T. 242 (Comm. Circuits)	5—3—6
*E.E.T. 268 (Comm. Tech.)	3—3—4
Eng. 231 (Tech. Writing)	3—0—3
Phys. 134 (Modern Physics)	2—0—2
Total	18—9–21

Sixth Quarter	C—L—T
E.E.T. 224 (A.C. Circuits)	2—3—3
E.E.T. 225 (Waveform Analysis)	5—3—6
*E.E.T. 243 (Comm. Circuits)	3—3—4
*E.E.T. 267 (Comm. Tech.)	3—3—4
Eng. 221 (Public Speaking)	3—0—3
I.E.T. 261 (Seminar)	1—0—1
Total	17–12–21

Under quarters C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.



Modern electronics equipment is used to demonstrate advanced theories.

Positions Now Held By STI Graduates in the Electronics Option

Graduates in the Electronics Option are employed in the following positions:

X-Ray Service Engineer
Research Assistant
Field Engineer
Electronics Laboratory Supervisor
Training Officers (Electronics)
Engineering Development Technician
Laboratory Technician
Electronics Engineering Technician
Instrument Inspector
Research Technician
Maintenance Supervisor
Field Service Engineer
Methods Engineer
Systems Engineer
Product Design Engineer
Electrical Test Equipment Engineer
Distribution Engineer
Power Sales Engineer

POWER APPLICATIONS

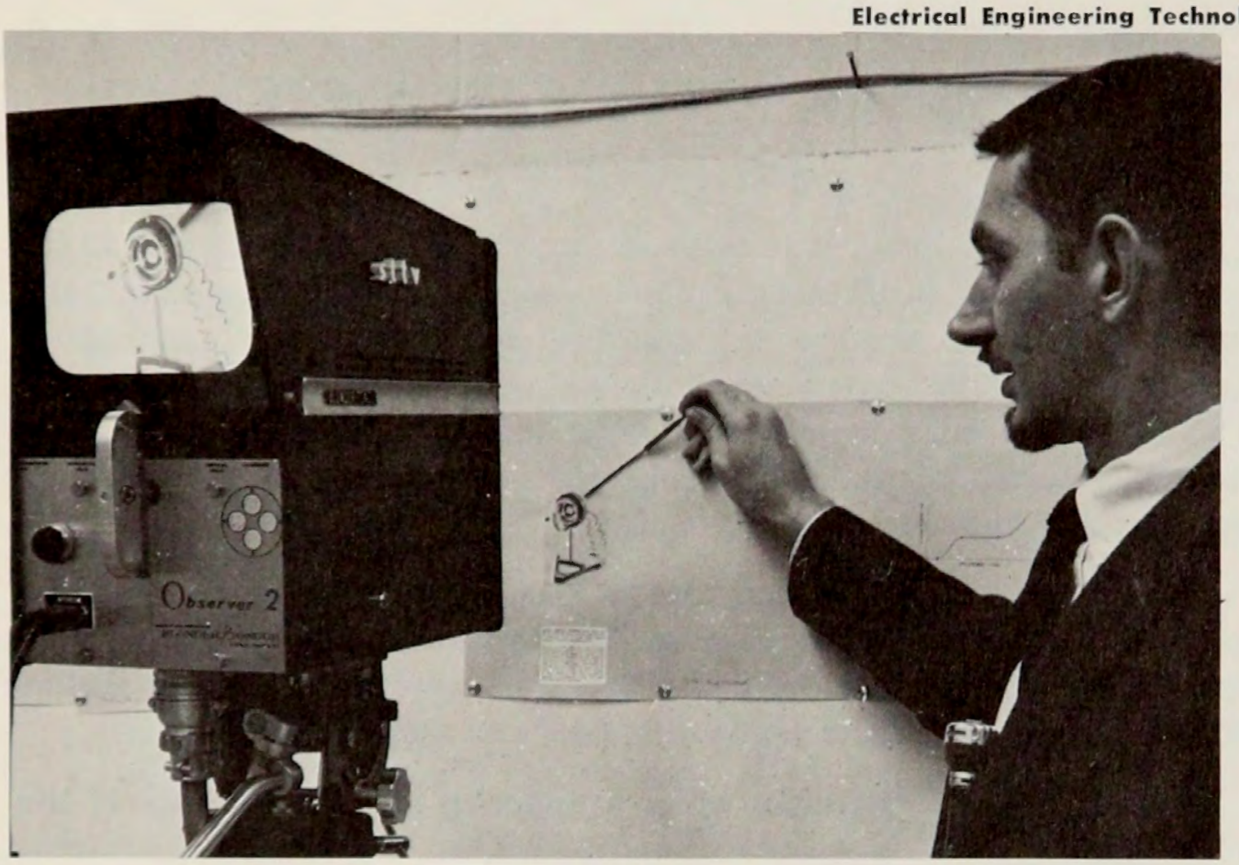
The electrical industry has been one of the fastest growing and most progressive industries in America for the past decade. Many of the techniques now in common use were only ideas just a few years ago. When Southern Tech was founded, there was a very marked difference between the fields of electrical power and electronics. Over the years this difference has steadily grown smaller. With the great use of electronic controls, remote control of equipment, telemetering, and many other modern techniques the role of electronics in the power applications of the electrical industry has grown to the point where there is very little difference in the educational requirements for men needed by the so-called power and electronics companies.

To keep pace with the demands, the curricula in this area have been constantly under study and revision. A strengthening of the mathematics and generalization of the basic circuits courses were moves in this direction. As a part of this general curriculum revision the designation of power option has been dropped. Those students more interested in the power applications than the electronics may substitute the courses listed below for the courses listed under the electronics option that are preceded by an asterisk. To insure the continuity of the course material and the proper prerequisites, the entire package of four courses must be used when a substitution is made.

	C—L—T
EET 258 (A. C. Machinery)	5—3—6
EET 278 (Power Distribution & Control)	3—3—4
EET 279 (Electronic Controls)	3—3—4
EET 280 (Power Systems Analysis)	3—3—4
Total	14–12–18

Some positions held by STI graduates primarily interested in the field of Electric Power follow:

Electrical Contractor (Company President)
Systems Engineer (Electrical)
Field Engineer
Engineering Technician
Electrical Estimator
Staff Assistant
Junior Engineer (Electrical)
Training Specialist
Supervisor or Foreman (Electrical)



Electrical principles are confirmed by numerous laboratory experiments.

ELECTRICAL ENGINEERING TECHNOLOGY

Telephone Option

The Telephon Option is planned to provide (1) general training in the technical fields of mathematics, physics, and drawing; (2) general training in composition and rhetoric, personnel relations, contracts and specifications, industrial economics, technical writing, and public speaking; (3) specific training in electrical-circuit theory, basic electronics, radio and microwave, central-office equipment, outside plant, traffic, carrier systems, and communications circuits.

Graduates in the Telephone Option should be able to fill responsible positions as maintenance technicians on inside and outside plant equipment, traffic technicians, toll-test technicians, production and installation technicians, and telephone equipment sales and service technicians.

A more detailed description of each subject is given in the back of this catalogue.

FIRST YEAR

First Quarter	C—L—T
T Draw 111 (Engr. Drawing I)	0—6—2
EET 134 (Intro. to E.E.T.)	5—3—6
Eng. 111 (Comp. & Rhet.)	3—0—3
I.E.T. 111 (Human Relations)	3—0—3
Math. 110 (Algebra & Trig.)	5—0—5
Total	16—9—19

Second Quarter	C—L—T
CET 123 (Elem. Surveying I)	1—3—2
Eng. 112 (Comp. & Rhet.)	3—0—3
I.E.T. 220 (Economics)	3—0—3
Math. 114 (Analyt. & Calc.)	5—0—5
Phys. 131 (Mechanics)	5—3—6
Total	17—6—19

Third Quarter	C—L—T
E.E.T. 121 (A.C. Circuits)	5—3—6
E.E.T. 135 (Basic Electronics)	5—3—6
Math. 213 (Calc. II for E.E.T)	5—0—5
Phys. 132 (Electricity)	3—3—4
Total	18—9—21

SECOND YEAR

Fourth Quarter	C—L—T
E.E.T. 122 (A.C. Circuits)	5—3—6
E.E.T. 232 (Ind. Electronics)	5—3—6
E.E.T. 244 (Comm. Circuits)	3—3—4
Phys. 133 (Ht., Sound, Lt.)	3—3—4
Total	16–12–20

Fifth Quarter	C—L—T
E.E.T. 291 (Dial C.O.E. Tech.)	5—3—6
E.E.T. 292 (Traffic Tech.)	3—0—3
E.E.T. 294 (Carrier Systems)	5—3—6
Eng. 231 (Tech. Writing)	3—0—3
Phys. 134 (Modern Physics)	2—0—2
Total	18—6–20

Sixth Quarter	C—L—T
E.E.T. 224 (A.C. Circuits)	2—3—3
E.E.T. 225 (Waveform Analysis)	5—3—6
E.E.T. 264 (Rad. & Microwvs.)	3—3—4
E.E.T. 298 (Outside Plant)	3—3—4
Eng. 221 (Public Speaking)	3—0—3
I.E.T. 261 (Seminar)	1—0—1
Total	17–12–21

Under quarters C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.

Positions Now Held By STI Graduates In the Telephone Option

Graduates in the Telephone Option are prepared for placement opportunities in many phases of telephone equipment manufacture, telephone company operation, and telephone equipment sales and service. Some specific positions graduates of Telephone Technology are now holding follow.

Telephone Company Manager
Exchange Manager
Traffic Technician
Junior Engineer—Outside Plant
Plant Assistant Supervisor
Equipment Installer
Telephone Engineer

Telephone techniques are practiced on operating equipment.

GAS ENGINEERING TECHNOLOGY

The course in Gas Engineering Technology is planned to provide an adequate reservoir of trained personnel for the great and fast growing gas industry. STI, with advisory assistance from industry, has worked out a curriculum to prepare a student to go into the gas industry at a technician's level, which is so sorely needed by the industry. That part of the curriculum devoted solely to gas (LP-Gas and natural gas) is backed up by specialized training in mathematics, English, and physics. In addition, specialized training in supervision and personnel problems is included.

Specific work is presented on the many uses of gas as a fuel, and the required utilization equipment. The shop work has been selected to develop the student's knowledge of all types of problems encountered in the manufacturing of equipment and operation of such equipment. Stress is also placed on the distribution of gas.

Successful graduates of this course are presented with many and varied job opportunities in engineering offices, producers and distributors of gas, manufacturers and distributors of appliances and equipment, and in the operations of retail marketers.

A more complete description of each subject is given in the back of the catalogue.

FIRST YEAR

First Quarter	C—L—T
Chem. 112 (Gen. Chemistry)	5—3—6
Draw. 111 (Engr. Draw. I)	0—6—2
Eng. 111 (Comp. & Rhet.)	3—0—3
I.E.T. 111 (Human Relations)	3—0—3
Math. 111 (Algebra)	5—0—5
Total	16—9—19

Second Quarter	C—L—T
A.C.E.T. 141 (Tech. Measure.)	2—3—3
Eng. 112 (Comp. & Rhet.)	3—0—3
G.E.T. 113 (Theory of Gases)	3—0—3
Math. 112 (Trigonometry)	5—0—5
Phys. 131 (Mechanics)	5—3—6
Total	18—6—20

Third Quarter	C—L—T
A.C.E.T. 112 (Controls)	5—0—5
G.E.T. 122 (Gas Util. I)	5—3—6
Math. 114 (Analyt. & Calc.)	5—0—5
Phys. 132 (Electricity)	3—3—4
Total	18—6—20

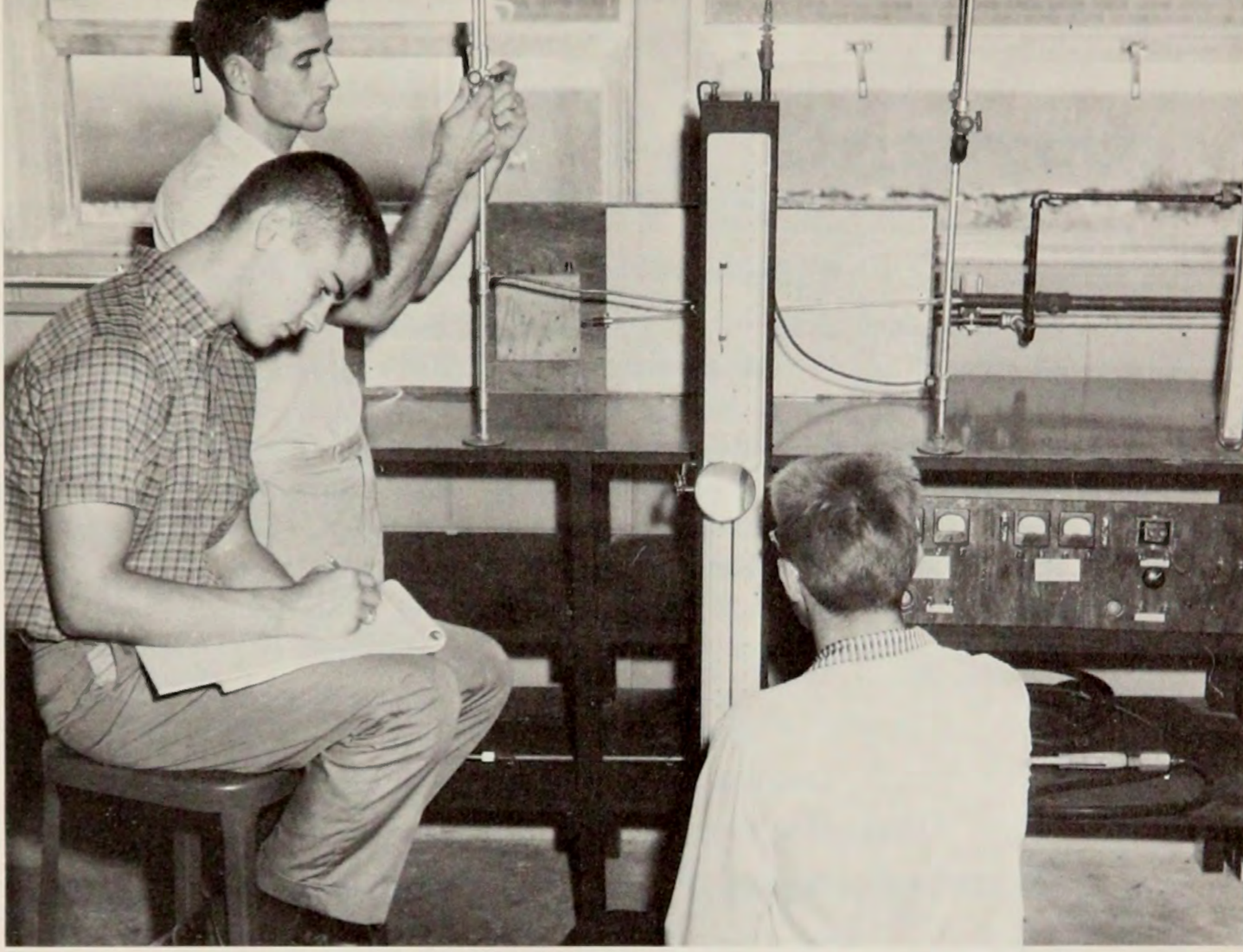
SECOND YEAR

Fourth Quarter	C—L—T
A.C.E.T. 231 (Refrig. I)	3—3—4
Eng. 231 (Tech. Writing)	3—0—3
G.E.T. 222 (Gas. Util. II)	5—3—6
M.E.T. 217 (Thermodynamics I)	3—0—3
Phys. 133 (Ht., Snd., Lt.)	3—3—4
Total	17—9—20

Fifth Quarter	C—L—T
Eng. 221 (Public Speaking)	3—0—3
G.E.T. 234 (Ntwk. Dist. Sys.)	5—3—6
G.E.T. 236 (Fluid Mech.)	5—0—5
I.E.T. 122 (Ind. Accounting)	1—3—2
M.E.T. 218 (Thermodynamics II)	2—0—2
Phys. 134 (Modern Phys.)	2—0—2
Total	18—6—20

Sixth Quarter	C—L—T
A.C.E.T. 224 (Res. A.C.)	5—3—6
G.E.T. 223 (Ind. Gas Util.)	5—3—6
G.E.T. 226 (Gas Engines)	2—3—3
I.E.T. 243 (Business Law)	3—0—3
I.E.T. 261 (Seminar)	1—0—1
Total	16—9—19

Under quarters C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.



The Gas Engineering Technology laboratories are especially well equipped.

Positions Now Held By STI Graduates of Gas Engineering Technology

1. Engineering
    a. Measurement engineer
    b. Research technician
    c. Testing engineer
    d. Corrosion control engineer
    e. Distribution engineer
    f. Sales engineer

2. Supervision and Management
    a. Natural gas load control
    b. Distribution system estimating
    c. Training supervisor
    d. LP-Gas Management
    e. Purchasing agent
    f. Installation inspection

INDUSTRIAL ENGINEERING TECHNOLOGY

(See page 50 for the Management Option.)

The student in Industrial Engineering Technology is trained primarily for supervisory and management positions in the manufacturing industries. However, the very nature of the broad curriculum, stressing principles and practices of scientific management, enables a graduate to compete successfully for a variety of positions. These range from almost every phase of factory planning and operation to technical sales, positions with casualty and fire insurance companies that require knowledge of industrial safety, many staff department positions with transportation, distributing and utility companies, and to the operation of private business.

FIRST YEAR

First Quarter	C—L—T
I.E.T. 116 (Orig. & Mgt.)	3—0—3
Chem. 112 (Gen. Chemistry)	5—3—6
Draw. 111 (Eng. Drawing I)	0—6—2
I.E.T. 111 (Human Relations)	3—0—3
Math. 111 (Algebra)	5—0—5
Total	16—9—19

Second Quarter	C—L—T
Draw. 112 (Eng. Drawing II)	0—6—2
Eng. 111 (Comp. & Rhet.)	3—0—3
I.E.T. 131 (Methods Imprvt.)	3—0—3
Math. 112 (Trigonometry)	5—0—5
Phys. 131 (Mechanics)	5—3—6
Total	16—9—19

Third Quarter	C—L—T
Eng. 112 (Comp. & Rhet.)	3—0—3
I.E.T. 155 (Ind. Safety)	3—0—3
I.E.T. 122 (Indus. Acctng.)	1—3—2
Math. 114 (Calculus)	5—0—5
M.E.T. 111 (Tools & Methods)	5—0—5
M.E.T. 121 (Gen. Mtl. Shop)	0—6—2
Total	17—9—20

SECOND YEAR

Fourth Quarter	C—L—T
Eng. 221 (Public Speaking)	3—0—3
I.E.T. 231 (Statistics)	3—0—3
I.E.T. 232 (Motion & T. Study)	2—3—3
I.E.T. 233 (Materials Handling)	2—3—3
I.E.T. 234 (Prod. Control)	3—0—3
Phys. 132 (Elecricity)	3—3—4
Total	16—9—19

Fifth Quarter	C—L—T
I.E.T. 118 (Labor Mgt. Relations)	3—0—3
Eng. 231 (Tech. Writing)	3—0—3
I.E.T. 235 (Quality Control)	2—0—2
I.E.T. 220 (Economics)	3—0—3
M.E.T. 214 (Inspect. Methods)	3—0—3
Phys. 133 (Ht., Sound, Lt.)	3—3—4
Total	17—3—18

Sixth Quarter	C—L—T
I.E.T. 225 (Cost Control)	2—0—2
I.E.T. 224 (Prin. of Eng. Econ.)	5—0—5
I.E.T. 236 (Plant Layout)	2—3—3
I.E.T. 226 (Wage & Sal. Adm.)	3—0—3
I.E.T. 261 (Seminar)	1—0—1
M.E.T. 215 (Jigs & Fixtures)	3—3—4
Phys. 134 (Modern Phys.)	2—0—2
Total	18—6—20

Under quarters C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.

Positions Now Held By STI Graduates of Industrial Engineering Technology

1. PERSONNEL function:
   - Personnel Director
   - Employment Manager
   - Recreation Directors
   - Union Negotiator
   - Safety Director
   - Public Relations Director
   - Training Director
   - Personnel Counselors and Interviewers

2. QUALITY function:
   - Chief Inspector
   - Products and Process Development Technicians
   - Raw Material Sampler
   - Process Inspector
   - Statistical Quality Control Technician
   - Product Designers

3. METHODS and COST function:
   - Time Study Men
   - Motion Study Men
   - Methods Technicians
   - Cost Control Technicians
   - Estimators (Cost of manufacturing new products.)
   - Industrial Engineer's Assistants

4. EQUIPMENT function:
   - Works or Plant Engineer
   - Master Mechanic
   - Engineering Draftsman

5. PLANNING function:
   - Schedulers
   - Dispatchers
   - Planning Superintendents
   - Production Control Technicians

6. PRODUCTION function —Start at the supervisory level and rise to:
   - Assistant Foreman
   - Foreman
   - General Foreman
   - Superintendents
   - Plant Managers
   - General Managers
   - Safety Technician

INDUSTRIAL ENGINEERING TECHNOLOGY

Management Option

Upon the direct request of industry, Southern Tech has developed a curriculum called Industrial Engineering Technology—Management Option—as a companion to the curriculum in Industrial Engineering Technology. The Management Option prepares the student more specifically for staff and administrative positions in technical fields, thereby filling an important need in industrial training.

Graduates who have earned their Associate Degree in Industrial Engineering Technology have already made outstanding records in industry. The positions for which they have qualified are shown on page 47. Similarly responsible positions in the technical phases of staff and administrative work should await those who elect this program, Industrial Engineering Technology—-Management Option. The Management Option will offer more extensive training in the personnel functions listed.

The following curriculum shows the subject titles for Industrial Engineering Technology—Management Option.

FIRST YEAR

First Quarter	C—L—T
Draw. 111 (Engr. Drawing I)	0—6—2
Eng. 111 (Comp. & Rhet.)	3—0—3
I.E.T. 116 (Org. & Mgt.)	3—0—3
I.E.T. 131 (Methods Imprvt.)	3—0—3
I.E.T. 155 (Indus. Safety)	3—0—3
Math. 111 (Tech. Algebra)	5—0—5
Total	17—6—19

Second Quarter	C—L—T
Draw. 112 (Eng. Draw. II)	0—6—2
Eng. 112 (Comp. & Rhet.)	3—0—3
I.E.T. 114 (Indus. Psych.)	3—0—3
Math. 112 (Trigonometry)	5—0—5
Phys. 131 (Mechanics)	5—3—6
Total	16—9—19

Third Quarter	C—L—T
I.E.T. 111 (Human Relations)	3—0—3
I.E.T. 118 (Labor-Mgt. Rel.)	3—0—3
I.E.T. 122 (Indus. Acctg.)	1—3—2
Math. 114 (Calculus)	5—0—5
M.E.T. 111 (Tools & Methods)	5—0—5
M.E.T. 121 (Gen. Met. Shop)	0—6—2
Total	17—9—20

SECOND YEAR

Fourth Quarter	C—L—T
Eng. 221 (Public Speaking)	3—0—3
I.E.T. 220 (Economics)	3—0—3
I.E.T. 226 (Wage & Sal. Adm.)	3—0—3
I.E.T. 232 (Motion & Time Study)	2—3—3
I.E.T. 242 (Small Bus. Mgt.)	3—0—3
Phys. 132 (Electricity)	3—3—4
Total	17—6—19

Fifth Quarter	C—L—T
I.E.T. 224 (Prin. of Eng. Econ.)	5—0—5
I.E.T. 225 (Cost Control)	2—0—2
I.E.T. 231 (Statistics)	3—0—3
I.E.T. 233 (Materials Hand.)	2—3—3
I.E.T. 261 (Seminar)	1—0—1
Phys. 133 (Ht., Sound, Lt.)	3—3—4
Total	16—6—18

Sixth Quarter	C—L—T
Eng. 231 (Tech. Writing)	3—0—3
I.E.T. 213 (Supv. Training)	3—0—3
I.E.T. 234 (Prod. Control)	3—0—3
I.E.T. 235 (Quality Control)	2—0—2
I.E.T. 236 (Plant Layout)	2—3—3
I.E.T. (Law)	3—0—3
Phys. 134 (Modern Physics)	2—0—2
Total	18—3—19

Under quarters C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.

Industrial Engineering Technology students work on a problem in Engineering Economy (above) and with cameras (right) in a laboratory.

MECHANICAL ENGINEERING TECHNOLOGY

The Mechanical Engineering Technology curriculum offers training in basic courses such as mathematics, English, physics, and laboratory training. Classroom theory is correlated with laboratory work in which the student becomes familiar with basic methods and machines used in the mechanical field.

This field embraces the manufacture and production of mechanical products and the tools, machines, and processes by which they are made. In a broad sense mechanical technology is the creation and utilization of mechanical power, and as such enters into every business, industrial, and community activity. Men with technical institute type of training possess a knowledge that is basic to, and in demand by, companies in nearly every line of business throughout the world.

A more complete description of each subject is given in the back of this catalogue.

FIRST YEAR

First Quarter	C—L—T
Chem. 112 (Gen. Chem)	5—3—6
Draw. 111 (Eng. Draw. I)	0—6—2
Math. 111 (Algebra)	5—0—5
M.E.T. 111 (Tools & Meth.)	5—0—5
M.E.T. 121 (Gen. Mtl. Lab.)	0—6—2
Total	15–15–20

Second Quarter	C—L—T
Draw. 112 (Engr. Draw. II)	0—6—2
Eng. 111 (Comp. & Rhet.)	3—0—3
I.E.T. 111 (Human Rel.)	3—0—3
Math. 112 (Trigonometry)	5—0—5
M.E.T. 122 (Mach. Lab. I)	0—6—2
Phys. 131 (Mechanics)	5—3—6
Total	16–15–21

Third Quarter	C—L—T
Eng. 112 (Comp. & Rhet)	3—0—3
Math. 114 (Analyt. & Calc.)	5—0—5
M.E.T. 112 (Met. Heat Tr.)	3—0—3
M.E.T. 123 (Mach. Lab. II)	0—6—2
M.E.T. 224 (Welding)	0—6—2
Phys. 132 (Electricity)	3—3—4
Total	14–15–19

SECOND YEAR

Fourth Quarter	C—L—T
C.E.T. 113 (Mech. of Mat. I)	2—0—2
Dr. 221 (Mach. Sketching)	0—6—2
Eng. 221 (Public Speaking)	3—0—3
I.E.T. 131 (Methods Improvt.)	3—0—3
M.E.T. 214 (Insp. Methods)	3—0—3
M.E.T. 217 (Thermo. I)	3—0—3
Phy. 133 (Ht., Sound, Lt.)	3—3—4
Total	17—9–20

Fifth Quarter	C—L—T
C.E.T. 114 (Mech. of Mat. II)	3—3—4
Dr. 222 (Mach. Drawing)	0—6—2
E.E.T. 281 (Ind. Electricity)	5—3—6
Eng. 231 (Tech. Writing)	3—0—3
I.E.T. 232 (Mot. & T. Study)	2—3—3
M.E.T. 218 (Thermo II)	2—0—2
Total	15–15–20

Sixth Quarter	C—L—T
I.E.T. 236 (Plant Layout)	2—3—3
I.E.T. 261 (Seminar)	1—0—1
M.E.T. 215 (Jigs & Fixtures)	3—3—4
M.E.T. 216 (Machine Design)	5—0—5
M.E.T. 225 (Gen. Sheet Metal)	0—6—2
Phy. 134 (Modern Physics)	2—0—2
Total	13–12–17

Under quarters C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.

Positions Now Held By STI Graduates of Mechanical Engineering Technology

Ordinance Inspector
Automotive Inspector
Draftsman
Maintenance Engineer
Assistant Service Superintendent
Engineer's Assistant
Junior Engineer
Sales Engineer
Foreman and Assistant Foreman in various fields
Warehouse Manager
Service Engineer
Tool Designer
Time Study Engineer
Production Supervisor
Turbine Installation Supervisor

Mechanical Engineering Technology requires theory and practice.

TEXTILE ENGINEERING TECHNOLOGY

The course in Textile Engineering Technology fills the great need of Georgia's and the South's largest industry, textile manufacturing. The student is trained in the four areas common to all Southern Tech engineering technicians. The first three— communication, basic sciences, and supervisory abilities—make of him a well-rounded individual who will be able to work out problems of a theoretical or practical nature and to report on them in a convincing and understandable manner. He will also be able to supervise people effectively.

In the fourth area, Textiles, the student will be given a broad program of courses in textile manufacturing which will give him as complete knowledge and understanding as possible of the raw material, the machinery, fabric analysis, designing, manufacturing, and finishing of all types of textile fabrics. The modern pilot plant and equipment of the A. French Textile School of Georgia Tech will be used for demonstration and all laboratory work. A graduate of this department will be a valuable addition to any manufacturing plant.

A more complete description of each subject is given in the back of this catalogue.

FIRST YEAR

First Quarter	C—L—T
Chem. 112 (Gen. Chemistry)	5—3—6
I.E.T. 111 (Human Relations)	3—0—3
Math. 111 (Algebra)	5—0—5
T.E.T. 111 (Raw Materials)	3—0—3
T.E.T. 121 (Open, Pick, Card)	3—3—4
Total	19—6—21

Second Quarter	C—L—T
Eng. 111 (Comp. & Rhet.)	3—0—3
I.E.T. 155 (Ind. Safety)	3—0—3
Math. 112 (Trigonometry)	5—0—5
Phys. 131 (Mechanics)	5—3—6
T.E.T. 122 (Draw., Comb., Rov.)	3—3—4
Total	19—6—21

Third Quarter	C—L—T
Eng. 112 (Comp. & Rhet.)	3—0—3
I.E.T. 122 (Indus. Acctng.)	1—3—2
I.E.T. 231 (Statistics)	3—0—3
Phys. 132 (Electricity)	3—3—4
T.E.T. 123 (Yarn Mfg.)	3—3—4
T.E.T. 162 (Tex. Chem. & Dye)	3—0—3
Total	16—9—19

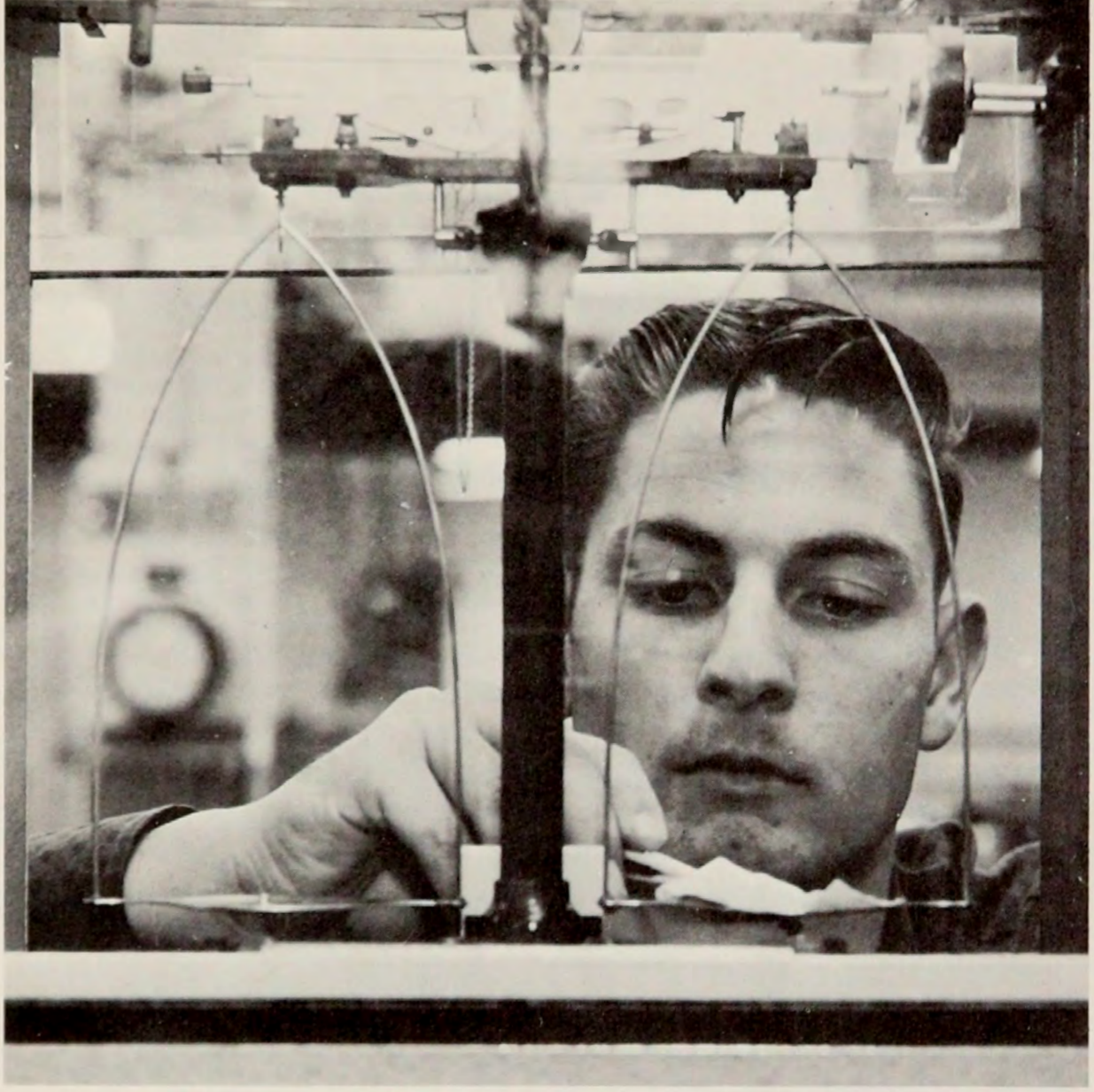
SECOND YEAR

Fourth Quarter	C—L—T
E.E.T. 281 (Ind. Electricity)	5—3—6
I.E.T. 131 (Methods Imprvt.)	3—0—3
Phys. 133 (Ht., Sound, Lt.)	3—3—4
T.E.T. 231 (Weaving)	3—3—4
T.E.T. 245 (Fabric Design)	3—0—3
Total	17—9—20

Fifth Quarter	C—L—T
A.C.E.T. 241 (Air C. & Ref.)	5—3—6
I.E.T. 232 (Mot. & T. Study)	3—3—4
I.E.T. 261 (Seminar)	1—0—1
Phys. 134 (Modern Phys.)	2—0—2
T.E.T. 232 (Warp Prep.)	3—0—3
T.E.T. 251 (Tex., Cal. & Costing)	3—0—3
Total	17—6—19

Sixth Quarter	C—L—T
Eng. 221 (Public Speaking)	3—0—3
Eng. 231 (Tech. Writing)	3—0—3
I.E.T. 234 (Production Cont.)	3—0—3
I.E.T. 213 (Supv. Training)	3—0—3
I.E.T. 235 (Quality Control)	2—0—2
T.E.T. 242 (Fabric Analysis)	2—3—3
T.E.T. 244 (Physical Testing)	1—3—2
Total	17—6—19

Under quarters C equals Class Hours, L equals Laboratory Hours, and T equals Total Credit.



Basic sciences are important to textile engineering technologists.

Positions Textile Graduates Are Prepared For

The course in Textile Engineering Technology is broad enough to prepare a graduate to fit himself into any phase of the textile industry when he has attained the necessary practical experience. Some of the titles of jobs open to him are:

Assistant Foreman
Foreman or Overseer
Fabric Designer
Production Control or
Standard Department Technician
Personnel Manager
Machinery Manufacturer Salesman
Erector or Service Man
Testing Technician in Physical Laboratories
Dryer or Cloth Finisher

THE CO-OPERATIVE PLAN

To provide financial aid for the student and to give him practical experience in industry, the Southern Technical Institute offers a school-sponsored Co-operative Plan in all of its eleven curricula. The Co-op Plan operates on a program of alternating school and work quarters over a period of thirty-three months. Thus the student completes six quarters of schooling and five quarters of industry.

To qualify for a Co-op Plan, the student must (1) be physically sound, (2) be seventeen years old, (3) meet all STI scholastic entrance requirements, and (4) complete at least one quarter of study at Southern Tech with no failures and a "C" average or better. (Some STI Co-op Plans require more than one quarter of scholastic study before the student can go to his assigned job.) Having met these four requirements, he is then eligible to enter his first quarter of work in industry. To remain on the Co-op Plan, the student must maintain a "C" average. Should he be dropped from the program or withdraw from it voluntarily, he is not eligible for reinstatement as a Co-op student. Also, as would be expected, he must perform his work to the satisfaction of his employer if he is to remain on the Co-op Plan.

Tuition, fees, and other expenses are the same for Co-operative students per quarter of attendance as for regular students. Every effort will be made to find satisfactory employment for the student in or near his home town so that he can profit from the savings effected through living at home.

At present a large number of Civil Engineering Technology students are enjoying the benefits of the Co-op Plan worked out in the summer of 1957 between the Southern Technical Institute and the State Highway Department of Georgia. Civil Engineering Technology students who have met all physical and scholastic requirements are placed on jobs with the Highway Department.

Southern Tech is continually expanding the program.

Additional information about Southern Tech's Co-op Plan may be obtained by writing *Coordinator of Co-operative Courses, Southern Technical Institute, Marietta, Georgia.*

SUBJECT DESCRIPTIONS

Air Conditioning Engineering Technology

AC E.T. 112—Electrical Controls 5—0—5
Prerequisite—Math. 112 or concurrently
Electrical fundamentals, circuits, wiring methods, motors, and control circuits of electrical equipment.
Text: Lister, *Electric Circuits and Machines.*

AC E.T. 141—Technical Measurements 2—3—3
Prerequisite—Math. 111 or concurrently
The theory and application of measurements as used in Air Conditioning. In particular, measurement of temperature, pressure, flow rates, electrical quantities, and heating value of gases.
Text: Moore, *Theory and Application of Mechanical Engineering Measurements.*

AC E.T. 212—Control Systems 5—3—6
Prerequisite—AC E.T. 112, 224, 225
The application of electric and pneumatic control systems to heating and air conditioning systems for controlling the temperature and humidity of the air.
Text: Haines, *Automatic Control of Heating and Air Conditioning.*

AC E.T. 224—Residential Air Conditioning 5—3—6
Prerequisite—AC E.T. 231 or concurrently
Heating and air conditioning as applied to residential type buildings. Calculation of heat losses and heat gains, air distribution systems, duct design, selection of equipment, and residential controls.
Text: Burkhardt, *Residential and Commercial Air Conditioning.*

AC E.T. 225—Air Conditioning I 5—3—6
Prerequisite—AC E.T. 231 or concurrently
The basic principles of commercial and industrial air conditioning. The calculation of heating and cooling loads, steam and hot water heating systems, psychrometric calculations, fans and ducts, pumps and piping, heating and cooling coils, and types of equipment.
Text: Carrier, *Modern Air Conditioning, Heating and Ventilating.*

AC E.T. 226—Air Conditioning II 5—3—6
Prerequisite—AC E.T. 225
A continuation of AC E.T. 225.

AC E.T. 227—Air Conditioning Design 0—6—2
Prerequisite—AC E.T. 226 or concurrently
Starting with a blueprint of a commercial type building, the student calculates heating and cooling loads, selects equipment from manufacturers' catalogs, designs duct and piping systems, and makes a drawing of the system.

AC E.T. 231—Refrigeration I 3—3—4
The fundamentals and application of refrigeration. The refrigeration cycle, refrigerants, compressors, evaporators, condensers, and control equipment of commercial systems.
Text: Dossett, *Principles of Refrigeration.*

AC E.T. 232—Refrigeration II 3—3—4
A continuation of AC E.T. 131. In addition a study is made of load calculations, the thermodynamic analysis of the refrigeration cycle, and auxiliary equipment.
Text: Dossett, *Principles of Refrigeration.*

AC E.T. 241—Air Conditioning and Refrigeration for Textile Students 5—3—6
A study of the basic principles of air conditioning and refrigeration. The subject matter includes calculation of loads, heating, cooling, humidification, dehumidification, air distribution, and standard control systems.
Text: Trane, *Air Conditioning Manual.*

Architectural Engineering Technology

A.E.T. 126—Descriptive Geometry 2—6—4
Prerequisite—Drawing 111 Vaughn
The subject presents to the student the basic principles of the intersection of lines and planes with particular emphasis upon the application of these principles to architectural objects. Use of the principles of Descriptive Geometry will be shown by drawing perspective views and by casting shadows on architectural elevations and perspectives.
Text: Martin, *Design Graphics.*

A.E.T. 127—Graphics 3—9—6
Prerequisites—Drawing 111 and A.E.T. 126 Orvold
An introductory study in architectural drawing and in the principles of visual design. This subject equips the student with a basic knowledge of drawing sections, plans, rendering, and detailing.
Text: Ramsey & Sleeper, *Architectural Graphic Standards.*

A.E.T. 141—Architectural Working Drawings 3—0—3
Newman
An introductory study of the reading of architectural plans. This subject also teaches

architectural terms which aid in speaking the language of all phases of construction.
Text: Dalzell, *Blueprint Reading for the Building Trades.* Vols. 1, 2.

A.E.T. 142—Building Materials **3—0—3**
Newman

A subject designed to familiarize the student with the physical properties of the materials generally used in the erection of structures, with brief descriptions of their manufacture.
Text: Parker, Gay and MacGuire, *Materials and Methods of Architectural Construction.*

A.E.T. 217—Steel and Timber Structures **3—3—4**
Prerequisites—C.E.T. 114, C.E.T. 216 Vaughn

A study of the design of the major structural elements used in framing commercial buildings with steel or timber. Design procedures for beams, girders, and columns are presented, and methods of fastening the members with rivets or timber connectors are shown. Laboratory work consists of computations that follow and expand the principles explained in the classroom.
Texts: AISC, *Steel Construction Manual.* Gaylord & Gaylord, *Design of Steel Structures.*

A.E.T. 218—Reinforced Concrete Structures **3—3—4**
Prerequisites—C.E.T. 114, C.E.T. 216 Vaughn

A study of reinforced concrete structures with the determination of direct stresses and bending stresses in beams, slabs, girders, columns, and footings. Consideration is given to the principles of continuity and to loading arrangements necessary for maximum bending moments. Laboratory work consists of computations that parallel the work in the classroom.
Text: Urquhart, O'Rourke, Winter, *Design of Concrete Structures.* Supplementary material: ACI, *Code, Reinforced Concrete Design Handbook.*

A.E.T. 219—Ultimate Load Structures **3—0—3**
Prerequisites—A.E.T. 217, A.E.T. 218 Vaughn

Introduction to plastic design of steel frames and connections and to the ultimate strength method of reinforced concrete design.
Text: To be selected.

A.E.T. 222—Building Design **3—9—6**
Prerequisites—A.E.T. 127, A.E.T. 142 Orvold

Residential design. This subject requires presentation drawings, complete workings, specifications, and the building of a scale model.
Text: Ramsey & Sleeper, *Graphic Standards.*

A.E.T. 223—Building Design **3—9—6**
Prerequisites—A.E.T. 222, A.E.T. 217, or concurrently Vaughn

The design of a structural steel building with sketches, architectural drawings and details.
Text: Ramsey & Sleeper, *Graphic Standards.*

A.E.T. 224—Building Design **3—9—6**
Prerequisite—A.E.T. 222, A.E.T. 218, or concurrently Orvold

The design of a structural concrete building and the preparation of architectural drawings and details. A small scale model or rendered perspective is also required.
Text: Ramsey & Sleeper, *Graphic Standards.*

A.E.T. 231—Architectural History **3—0—3**
Orvold

A study of the progress of architecture. The material covered in this subject includes a review of architectural forms from Egyptian to modern Engineered Architecture.
Text: Hamlin, *A History of Architecture.*

A.E.T. 243—Building Equipment **3—0—3**
Prerequisite—Phys. 133, or concurrently Vaughn

To present to the student the basic principles of design and use of air conditioning, plumbing, electrical systems and various mechanical equipment used in a building.
Text: Gay and Fawcett. *Mechanical and Electrical Equipment of Buildings.*

A.E.T. 244—Estimating **3—3—4**
Prerequisite—A.E.T. 142 and C.E.T. 125 Orvold

A course designed to develop a method of estimating in preparing material and labor quantity surveys from actual working drawings and specifications.
Text: Wass, *Building Construction Estimating.*

Chemistry

Chemistry 112—General Chemistry **5—3—6**
Crawford

A survey of general chemistry with the emphasis on inorganic. Laboratory exercises parallel and supplement the work in the classroom.
Texts: Ewing and Meyer, *Chemistry, A Survey of Principles;* Ritter, *An Introductory Laboratory Course in Chemistry.*

Civil Engineering Technology

C.E.T. 100—Office Practices **0—3—1**
Holladay

Familiarization and use of the slide rule, electric calculating machine, Polar Planimeter, drafting machine, Pantograph, mechanical lettering guides.
Text: Slide Rule Manual, Monroe, *Machine Methods for Calculations, Civil Engineering.*

C.E.T. 101—History of Engineering **1—0—1**
Roley

A comprehensive review of engineering methods and processes from ancient times down to today, along with a review of the effect engineering advancement has had upon Society.

Offered as an elective.
Text: Finch, *The Story of Engineering.*

C.E.T. 111—Graphic Statics **0—3—1**
Prerequisite—Phys. 131 or concurrently
Staff

Graphical methods of calculating reactions, stresses, resultants and their application in various structural problems.
Text: Parker, Gay and MacGuire, *Materials and Methods of Architectural Construction.*

C.E.T. 113—Engineering Mechanics **2—0—2**
Prerequisite—Phys. 131 or concurrently
Myatt

Statics; principles and applications of free body diagrams for force systems, shear and moment diagrams, deflections of beams by numerical integration, determination of section properties.
Text: Levinson, *Mechanics of Materials.*

C.E.T. 114—Strength of Materials **3—3—4**
Prerequisite—C.E.T. 113
Myatt

A discussion of strength of materials concepts. Subject matter includes stress and strain analysis, both elastic and plastic, with emphasis on elastic analysis of axially loaded members, connectors, beams, and columns.
Text: Levinson, *Mechanics of Materials.*

C.E.T. 122—Route Surveying **3—6—5**
Prerequisite—C.E.T. 124
Roley

A discussion of reconnaissance, preliminary and construction surveys for route locations, including simple, compound, reverse and multi-centered circular curves, highway and railway spiral easement curves; super-elevations, sight distances and parabolic vertical curves. The laboratory time is used for the computation and field layout of curves and earthwork problems.
Text: Hickerson, *Route Surveys & Design.*

C.E.T. 123—Elementary Surveying I **1—3—2**
Troemel

Care and use of engineer's level, transit and tape, leveling, traversing.
Text: Breed, Hosmer, Bone, *Elementary Surveying.*

C.E.T. 124—Elementary Surveying II **2—6—4**
Prerequisite—C.E.T. 123
Troemel

Continuation of C.E.T. 123: Closure and area computations, stadia, contours, building layouts, profile levels, U. S. System of Land Surveys, earthwork, lines and grades, city surveys, the interpretation and plotting of field notes of topographic surveys.
Text: Same as for C.E.T. 123.

C.E.T. 125—Architectural Surveying **0—3—1**
Prerequisite—C.E.T. 123
Fowler

A continuation of C.E.T. 123 with emphasis on surveys required by architects. Profile levels, stadia, contours, earthwork and grading, building layouts.
Text: Breed, Hosmer, Bone, *Elementary Surveying.*

C.E.T. 132—Highway Construction **2—3—3**
Prerequisite—C.E.T. 122 or concurrently
Roley

A study of highway location, geometric considerations, drainage and sizing of drainage structures, grading and earth movement, soil stabilization, road surfacings, and maintenance. The laboratory is for supervised computations and the preparation of a complete set of highway plans.
Text: Ritter and Paquette, *Highway Engineering.*

C.E.T. 201—Survey of Data Processing Equipment **0—3—1**
Staff

Study of uses and programming of electronic data processing machines.
Text: Tech, *A Problem Language Primer.*

C.E.T. 202—Ethics of Engineering **1—0—1**
Roley

A review of the theoretical and practical aspects of ethical problems in engineering, along with their suggested solutions. Specific examples, situations and limitations of ethics, and ethical relationships are discussed in detail.

Offered as an elective.
Text: To be selected.

C.E.T. 212—Structural Drafting **0—6—2**
Prerequisites—Drawing 111 and C.E.T. 114
Myatt

A study of the required structural steel plans for buildings and the preparation of the shop details from those plans. Given the structural design for a building, the student prepares both the structural plans necessary for construction and the shop

details necessary for fabrication of several steel members in the structure.
Text: AISC, *Steel Construction Manual.* AISC, *Structural Shop Drafting,* Vol. I.

C.E.T. 213—Structural Drafting **0—6—2**
Prerequisite—Drawing 111 Myatt

A study of various types of concrete floor systems and preparation of working drawings for the concrete members of a structure. As a term project, the student is given the design for a multi-story concrete framed building from which he prepares the structural plans and the shop details for a part of the reinforcing steel.
Text: ACI, Manual of Standard Practice for Detailing Reinforced Concrete Structures. Kethum, *Handbook of Structural Details for Buildings.*

C.E.T. 214—Materials Testing **1—3—2**
Myatt

A study of aggregates, cement, concrete. Testing aggregates, mix designs, adjustments, slump, calculations of concrete characteristics, actual mixing, curing and testing. Asphalt properties and the application to asphalt mix designs, testing and analyzing asphalt mixes.
Texts: Larson, *Portland Cement and Asphalt Concretes.*

C.E.T. 215—Soil Mechanics **2—3—3**
Myatt

Theory of soil mechanics as applied to permeability, consolidation, shear strength, unconfined and triaxial compression. In-place density, Atterberg limits, compaction tests, specific gravity, grain size, classification of soils.
Text: Karoll, *Soils and Soils Engineering.*

C.E.T. 216—Indeterminate Structural Analysis **3—0—3**
Prerequisite—C.E.T. 113 Myatt

An introduction to methods of analysis of indeterminate structures. Methods of consistent deformations, unit load, influence line diagrams for continuous beams and rigid frames. Moment distribution and its application to frames of constant and variable section.
Text: Wang and Eckel, *Elementary Theory of Structure.*

C.E.T. 217—Structural Design **3—3—4**
Prerequisite—A.E.T. 217,
A.E.T. 218, C.E.T. 216 Myatt

The design of a complete structure, integrating the design and drafting procedures studied in other courses, leading to working plans for the structure. Ultimate strength theory in steel, concrete, prestressed concrete, composite steel and concrete design procedures are introduced.
Texts: Urquhart, O'Rourke, Winter, *Design of Concrete Structures.* Gaylord & Gaylord, *Design of Steel Structures,* Ketchum, *Handbook of Standard Structural Details for Buildings.*

C.E.T. 218—Geology of Engineering **1—3—2**
Roley

A discussion of the elementary concepts of geology, petrology, sedimentation, and the behavior and strength of natural materials in sites.

Offered as an elective.
Text: To be selected.

C.E.T. 223—Land Surveys **3—6—5**
Prerequisite—C.E.T. 122 Holladay

Theory and practice of land surveying; subdivision; filing and recording deeds; U. S. system of land subdivision; U. S. Coast and Geodetic plane coordinate systems; county and state laws; city surveying procedures; use of instruments and computations on astronomical observations for azimuth determination; Georgia Land Lot System of land subdivision.
Text: Breed, Hosmer, Bone, *Elementary Surveying.*

C.E.T. 224—Topographic and Contour Surveying **2—6—4**
Prerequisite—C.E.T. 124 Holladay

Theory, description and use of advanced surveying instruments and methods; practice of state and local coordinate systems for cadastral surveys and construction work; field work for the design and construction of engineering projects; use of the Plane Table on topographic surveys; altimetry, optical-type instruments; triangulation; baseline measurements; hydrographic surveying; transformation from plane to spherical coordinates, precise levelling, subtense bar.
Text: Breed, Hosmer, Bone, *Higher Surveying.*

C.E.T. 225—Advanced Surveying **2—3—3**
Prerequisite—C.E.T. 224 Holladay

Theory and use of electronic distance measuring equipment, trilateration, Geodesy, plane and spherical coordinates, map projections, least square adjustments.
Text: Breed, Hosmer, Bone, *Higher Surveying.*

C.E.T. 232—Heavy Construction **2—3—3**
Roley

Heavy construction operations; fundamentals, equipment, earth excavation and movement, drilling and blasting, production of stone aggregate, concrete mixing and placing, pile driving, cofferdams, foundations.
Text: Peurifoy, *Construction Planning, Equipment, and Methods.*

C.E.T. 233—Construction Estimating 1—3—2
Prerequisite—A.E.T. 244, C.E.T. 232 Roley

Construction estimation of heavy construction projects; study of the basis and accuracy of such estimation.
Text: Peurifoy, *Estimating Construction Costs.*

C.E.T. 243—Hydraulics 3—0—3
Prerequisite—C.E.T. 114 Fowler

An introduction to the principles of fluid flow and the development of practical hydraulics. The subject matter includes fluid statics, flow of an incompressible ideal fluid, flow of real fluid in pipes, multiple pipe line problems, liquid flow in open channels, and fluid measurement.
Text: Vennard, *Elementary Fuid Mechanics.*

C.E.T. 244—Water & Sewage Systems 1—3—2
Prerequisite—C.E.T. 243 or concurrently Gordon

A study of the sources, collections, treatment and distribution of water; sewage collection and treatment. The laboratory is for supervised computations, laboratory tests, and visits to water and sewage treatment plants.
Text: Hardenbergh, *Water Supply and Waste Disposal.*

C.E.T. 251—Photogrammetry 0—6—2
Prerequisite—C.E.T. 224 Holladay

The preparation of maps and charts from aerial photographs. Specifications and planning for aerial surveys.
Text: Breed, Hosmer, Bone, *Higher Surveying.*

Drawing, Engineering

Draw. 111—Engineering Drawing I 0—6—2
Muller, Bosher

Introduction to drawing, use of instruments, lettering, geometric construction, orthographic projection, auxiliary views, dimensioning, and drawing conventions.
Texts: French and Vierck, *Fundamentals of Engineering Drawing,* 1st Ed. However, all Mechanical Engineering Technology students must have French and Vierck's, *A Manual of Engineering Drawing for Students and Draftsmen,* 9th Ed., as their text.

Draw. 112—Engineering Drawing II 0—6—2
Prerequisite—Draw. 111 Bosher

Continuation of topics introduced in Engineering Drawing 111, plus threads and fasteners, sectioning, conventional representation, working drawings, and ink tracings.
Text: Same as for Draw. 111.

Draw. 221—Machine Sketching 0—6—2
Prerequisite—Draw. 111 Muller

A step by step procedure in freehand sketching of machine parts with pencil. Sketches are made in orthographic, isometric, and oblique projection, as well as in true perspective. Dimensioning and shading of sketches are included.
Text: Same as for Draw. 111.

Draw. 222—Machine Drawing 0—6—2
Prerequisite—Draw. 112 Bosher

Study of gears, cams, and complete assembly drawings of a small machine, together with manufacturing specifications.
Text: French and Vierck, *A Manual of Engineering Drawing for Students and Draftsmen,* 9th Ed.

Draw. 231—Electrical Drawing 0—6—2
Prerequisites—Draw. 111, E.E.T. 122

A study of A.S.A. and A.I.E.E. standard electrical drawing symbols and preparation of electrical drawings including schematics, single-line diagrams, wiring diagrams, layouts, and others.
Text: Bishop, *Electrical Drafting and Design,* 3rd Ed.

Electrical Engineering Technology

E.E.T. 121—Alternating-Current Circuits 5—3—6
Prerequisite—Math. 113 Burton

Fundamentals of alternating-current theory and practice as applied to single-phase circuits. Properties of resistance, inductance, and capacitance. Resistance networks. Thevenin's theorem as applied to resistance networks. Generation of alternating emf's and elementary wave shape analysis. Reactance, impedance, and phase relations in series and parallel circuits. Resonant circuits. Complex notation, vector analysis, and use of the slide rule.
Text: Skilling, *Electrical Engineering Circuits.*

E.E.T. 122—Alternating-Current Circuits 5—3—6
Prerequisites—E.E.T. 121, Math 213 Carter

Advanced alternating-current theory and practice as applied to single-phase circuits. Further analysis of series and parallel circuits using complex notation and vector analysis. Admittance, conductance, and susceptance. Anti-resonant circuits. Coupled-circuit theory, impedance transformation, transformer theory, mutual inductance, and reflected impedance. Thevenin's theorem as applied to complex circuits.

Construction, classification, regulation, loss determination, and efficiency of single-phase transformers. Per-unit method of calculation.
Texts: Skilling, *Electrical Engineering Circuits*. Siskind, *Electrical Machines, Direct and Alternating Current*.

E.E.T. 134—Introduction to E.E.T. 5—3—6
Prerequisites—Math 110 or concurrently
An introduction to the principles of electricity, concepts of emf, charge, current, resistivity, conversion of units, use of the slide rule, fundamental series and parallel resistive networks, Ohm's law, and Kirchhoff's laws.
Text: To be selected.

E.E.T. 135—Basic Electronics 5—3—6
Prerequisites—Math. 113, E.E.T. 121 or concurrently Keown
Basic study of the control of free electrons in elementary electronic circuits. Electron emission, classification and characteristics of high-vacuum tubes, tube-characteristic curves. Amplification, amplification factor, transconductane, plate resistance, load lines, stage gain and basic small-signal amplifiers. Types of bias.
Texts: Krackhardt, *Principles of Electronics. RCA Receiving Tube Manual.*

E.E.T. 224—Alternating-Current Circuits 2—3—3
Prerequisites—E.E.T. 122, Math. 213 Carter
Study of polyphase circuits, balanced and unbalanced, including circuit analysis, distribution systems, transformers and transformer connections, rectifier circuits, and instrumentation.
Text: Skilling, *Electrical Engineering Circuits*.

E.E.T. 225—Waveform Analysis 5—3—6
Prerequisite—E.E.T. 122, Math. 213 Carter
Analysis of non-sinusoidal waveforms, both periodic and transient, resulting in a-c circuits containing non-linear elements. Methods of analysis include graphical techniques, Fourier series, transient response and the complex-frequency plane, and Laplace transformations. Emphasis is placed on applications of these techniques to circuits employing iron-core transformers, diodes, transistors, tunnel diodes, vacuum tubes, and similar non-linear circuit elements.
Texts: Kerchner and Corcoran, *Alternating-Current Circuits* and Skilling, *Electrical Engineering Circuits*.

E.E.T. 232—Industrial Electronics 5—3—6
Prerequisites—E.E.T. 121, E.E.T. 135 Summers
Non-electronic control devices, relays, constant - voltage transformers, peaking transformers, magnetic amplifiers, varistors. Voltage doubling and multiplying circuits with applications to electrostatic painting, air cleaning and other industrial uses. Large-current tubes such as phanotrons, thyratrons, and ignitions. Phototube principles and color characteristics. AC and DC operation of electronic relaying systems such as time delay and photoelectric. Electronic control of resistance welding. Induction and dielectric heating. Electronic motor controls.
Text: Chute, *Electronics in Industry*.

E.E.T. 234—Advanced Electronics 5—3—6
Prerequisite—E.E.T. 232 Summers
Study of limiters, clampers, multivibrators, blocking oscillators, sawtooth generators, shock-excited oscillators, pulse counters, and electronic switching. Transient response of RC and RL integrators and differentiators. Impedance matching with a cathode follower. Transistor principles and circuits.
Text: Navaships, *Radar Electronics Fundamentals*.

E.E.T. 242—Communications Circuits 5—3—6
Prerequisite—E.E.T. 122 Baker
High-frequency transmission line concepts and practical applications. Impedance-matching concepts and methods, transmission-line circle diagram, propagation, standing waves, basic antenna theory, antennas for low-frequency and high-frequency applications, and high-frequency measuring techniques.
Text: Welch, *Wave Propagation and Antennas*.

E.E.T. 243—Communications Circuits 3—3—4
Prerequisites—E.E.T. 234, E.E.T. 242 Baker
Microwave techniques, theory and practice in pulse circuits, ultra-high-frequency amplifiers, transit-time effects, wave guides and cavity resonators, dynatrons, transitrons, klystrons, and magnetrons. Principles of radar, types of scan, radar transmitting and receiving systems, synchronization, and specific study of ASC-1 and APS-3 radar systems.
Text: Navaships, *Radar Systems Fundamentals*.

E.E.T. 244—Communications Circuits 3—3—4
Prerequisites—E.E.T. 122 or concurrently, E.E.T. 135 Keown
Study of the operating principles of telephone equipment and circuits, basic relay circuits for digital control, matched transmission lines for audio frequencies, distributed and lumped constants, pads and attenuators, constant-k and m-derived fil-

ters for low-pass, high-pass, and band elimination. "Pi," "T," and "L" sections. Text: Ware and Reed, *Communications Circuits.*

E.E.T. 257—Circuits and Machines 3—3—4
Prerequisite—E.E.T. 134 Staff
Survey of electrical rotating machines, direct and alternating current. Construction, characteristics, operation and control, and industrial applications of d-c, single phase a-c, and polyphase a-c motors and generators.
Text: Siskind, *Electrical Machines, Direct and Alternating Current.*

E.E.T. 258—Alternating—Current Machinery 5—3—6
Prerequisites—E.E.T. 122, E.E.T. 257 Staff
Characteristics, operation, and control and industrial applications of polyphase induction motors, single phase motors, synchronous generators, synchronous motors, and synchronous converters.
Text: Siskind, *Electrical Machines, Direct and Alternating Current.*

E.E.T. 264—Radio and Microwaves 3—3—4
Prerequisite—E.E.T. 244 Spaeth
A survey course to introduce the principles of radio communications, and the use of microwave techniques in communications systems. This course includes the use of amplitude and frequency modulation in radio communications transmitters. A brief treatment of the material currently covered in existing courses, E.E.T. 243; 267.

E.E.T. 266—Televison Technology 3—3—4
Prerequisite—E.E.T. 234 Goodwin
Principles of frequency modulation, methods of modulation and demodulation, FM transmitter and receiver circuits. Federal Communications Commission standards for television transmission. Camera and picture tubes, composite video signal, television receiver circuits, power supplies, video amplifiers, deflection circuits, alignment procedures, transmitter circuits, and color television.
Text: Grob, *Basic Television, Principles and Servicing.*

E.E.T. 267—Communications Technology 3—3—4
Prerequisites—E.E.T. 232, E.E.T. 122 Goodwin
Advanced study of communications circuits. Oscillator circuits, principles of modulation, amplitude modulation, frequency modulation, phase modulation. Demodulation for amplitude and frequency modulated signals, automatic volume control, and automatic frequency control.
Text: Class notes.

E.E.T. 268—Communications Technology 3—3—4
Prerequisites—E.E.T. 244, E.E.T. 122 Goodwin
Study of amplification as applied to audio-frequency circuits. Analysis of amplifier circuits and coupling methods. Audio-frequency voltage and power amplifier circuits and feedback circuits.
Text: Class notes.

E.E.T. 278—Electric Power Distributions and Control 3—3—4
Prerequisite—E.E.T. 256 or concurrently Staff
Generation, transmission, and distribution of electric power. Load-center distribution, substation operation, system and line protection, circuit analysis of distribution lines, remote operation of distribution centers, telemetering, and electric-utility practice.
Text: To be selected.

E.E.T. 279—Electronic Controls 3—3—4
Prerequisite—E.E.T. 232 Staff
An advanced study of control circuits for electrical equipment, synchros, selsyns, magnetic amplifiers, and electronic control of electrical equipment.
Text: To be selected.

E.E.T. 280—Power Systems Analysis 3—3—4
Prerequisite—E.E.T. 122 Staff
Types of wiring and wiring methods used in buildings. Selection of wire sizes, circuit protection, and control systems. Design and layout of electrical wiring systems for lighting, motors, and control circuits in accordance with standard practice.
Text: To be selected.

E.E.T. 281—Industrial Electricity 5—3—6
Prerequisites—Math. 112, Phys. 132 Staff
Survey course for non-electrical students. Electrical fundamentals, circuit analysis, electric machinery, control circuits, wiring methods, and industrial applications of electrical equipment.
Text: Lister, *Electric Circuits and Machines.*

E.E.T. 291—Dial C.O.E. Technology 5—3—6
Prerequisite—E.E.T. 244 Spaeth
Fundamentals of dial telephony; types of dial equipment; peculiarities, applications, and limitations of types; calculation of switch quantities; ringing equipment, charging equipment; storage batteries, simplex and composite equipment; signalling; equipment floor-plan layouts.

E.E.T. 292—Traffic Technology 3—0—3
Prerequisite—E.E.T. 291 or concurrently Spaeth
Basic data required to calculate the re-

quirements of dial systems; obtaining and analyzing data; ATB, LTB, PC and OF meters; peg counts; cord counts, switch counts; trunk group types, uses, sizes; numbering and switching plans.

E.E.T. 294—Carrier Systems **5—3—6**
Prerequisite—E.E.T. 291 Spaeth

Types of carrier equipment; carrier allocations; types of modulation; filters; carrier circuitry; frequency—frogging techniques; carrier repeaters; signaling; carrier engineering; and multiplexing.

E.E.T. 298—Outside Plant **3—3—4**
Spaeth

Basic data for outside-plant engineering (The Basic System Plant); pole lines; buried and underground plant; routing; staking; sagging; loading; joint use construction; cable-plant and open-wire-plant engineering; effective transmission; and looploss.
Text: To be selected.

English

Eng. 10—Remedial English **3—0—0**
McClure, Staff

Review of correct grammar and punctuation. Study of effective syntax in communication through use of programmed material. Lectures, recitation, written exercises stressing effective communication.
Text: Blumenthal, *English 3200.*

Eng. 111—Composition and Rhetoric **3—0—3**
Hays, Staff

Grammar study and drill, punctuation, correct usage, sentence structure, elimination of errors in sentence structure, and writing for comprehension.
Texts: Leggett, Mead and Charvat, *Handbook for Writers;* Random House, *American College Dictionary.*

Eng. 112—Composition and Rhetoric **3—0—3**
Prerequisite—Eng. 111 Sojourner, Staff

Vocabulary building, dictionary study, practice in developing sentence style, precise writing, paragraph technique, and business correspondence.
Texts: Leggett, Mead and Charvat, *Handbook for Writers;* Shurter, *Effective Letters in Business;* Random House, *American College Dictionary.*

Eng. 221—Public Speaking **3—0—3**
Prequisite—Eng. 111 Carroll, Staff

Study and practice in the fundamentals of public speaking. The subject includes training in selecting a topic, obtaining and organizing material, and presenting speeches effectively. Each student makes several speeches before an audience.
Text: Dietrich and Brooks, *Practical Speaking for the Technical Man.*

Eng. 231—Technical Writing **3—0—3**
Prerequisite—Eng. 112 Blair, Staff

Study of the fundamentals of technical writing style and mechanics with practice in preparing reports of the various types most likely to be used on the job by engineering technicians.
Text: Gaum, Graves and Hoffman, *Report Writing.* Selected reports from industrial organizations.

Gas Engineering Technology

G.E.T. 113—Theory of Gases **3—0—3**

This course presents the foundation for later study of the utilization of gas and the equipment used in its handling. It covers heating values of various fuel gases, and the chemistry of combustion. Also covered are the physical characteristics of hydrocarbon gases, heating values, limits of flammability, boiling points and vapor pressures, dew point and bubble point pressures, vaporization of liquefied gases, and gas-air mixtures.
Text: Clifford: *Theory of Gases.*

G.E.T. 122—Gas Utilization I **5—3—6**
Prerequisite—G.E.T. 113

The course covers the low-pressure flow of fuel gases, gas controls, venting of gas-fired domestic and commercial equipment, flow of gas through orifices and meters, and the metering of gases. The laboratory program is designed to acquaint the student with gas-fired equipment and also with instruments used in measuring gas flow.
Text: Clifford: *Practical Guide to LP-Gas Utilization*

G.E.T. 222—Gas Utilization II **5—3—6**
Prerequisite—G.E.T. 122

The design of atmospheric gas burners is covered in this course, and an introduction is given to jet-pump burners. The analysis of combustion products with conventional equipment is considered, and efficiency computations are made from the data obtained. Gas chromatography is introduced. Rate making is also considered. The laboratory program consists of designing a gas burner, building a pipe burner, flue gas analysis of various pieces of equipment with conventional methods and with the chromatograph.
Text: Same as for G.E.T. 122.

G.E.T. 223—Industrial Gas Utilization **5—3—6**
Prerequisites—G.E.T. 113 and G.E.T. 122

A study of combustion equipment, controls, and processes relating to the industrial utilization of fuel gases. The laboratory program is devoted to work with in-

dustrial equipment and controls. Field trips to industrial plants are also included.
Text: Shnidman: *Gaseous Fuels*

G.E.T. 226—Gas Fueled Engines 2—3—3
Prerequisites—G.E.T. 113 and Physics 131
The application of natural and liquefied petroleum gas to internal combustion engines. Fuel systems are studied. The laboratory work will be devoted to engine familiarization and conversion to gas. Efficiencies will also be included.
Text: Heldt: *High Speed Combustion Engines.*

G.E.T. 234—Network Distribution Systems 5—3—6
Prerequisites—G.E.T. 113, 122; Physics 131; Math. 112
This is a study of gas distribution networks with special emphasis on flow. Also considered will be pipe stresses due to temperature, pressure, and static loading; design codes; and load estimating.
Texts: Thomas: *Gas Network Design.* ASA B-31.1.8

G.E.T. 236—Fluid Mechanics 5—0—5
Prerequisites—G.E.T. 113, Math. 113, and Physics 131
A study of the statics and dynamics of fluids with a stress on liquids. Flow-through pipes and the turbomachinery used in moving liquids are covered.
Text: Lecture Notes

Industrial Engineering Technology

I.E.T. 111—Human Relations 3—0—3
Staff
Training in development of personality, ability to analyze problems involving human relations, and the development of good foundations for personnel relations. Actual cases of human relations problems in industry are studied with a view toward developing the technique of working with superiors, associates, and subordinates.
Text: Hepner, *Perceptive Management and Supervision.*

I.E.T. 114—Basic Industrial Psychology 3—0—3
Staff
The uses of psychology and what it can accomplish in industry, causation in behavior, leadership, testing, training, and fatigue.
Text: Maier, *Industrial Psychology.*

I.E.T. 116—Organization & Management 3—0—3
Staff
The organization and functions of the major departments in an enterprise, the levels of responsibility in management, and the basic economic factors involved in a profit making enterprise.
Text: Bethel, *Industrial Org. and Management.*

I.E.T. 118—Labor-Management Relations 3—0—3
Parlett
History of organized labor movement; collective bargaining and the government; strike strategy and tactics; union contract and grievance procedure; case studies regarding wages, hours, and working conditions; seniority and employment protection; effects of technological change.
Text: Bear and Wickersham, *The Practice of Collective Bargaining.*

I.E.T. 122—Industrial Accounting 1—3—2
Parlett
A course designed to give the student a sound foundation in general accounting principles, familiarization with cost accounting theory and practices, and a working knowledge of the use of accounting data and its relationship to industrial management.
Text: Specthrie, *Industrial Accounting-Brief Course and Workbook.*

I.E.T. 131—Methods Improvement 3—0—3
Keen
An introduction to the field of Motion and Time Study. The use of process charts, multiple activity charts, and operations charts. Applied imagination and the techniques of brainstorming, plus the principles of motion economy, are also studied. Problems involving the charts, applied imagination, and the principles of motion economy.
Text: Barnes, *Motion and Time Study.*

I.E.T. 155—Industrial Safety 3—0—3
Parlett
A basic study of industrial accident prevention considering the nature and extent of the accident problem. The role management must play in industrial safety, the information it must have to insure an efficient, well-managed safety program with particular emphasis on fire prevention, industrial hygiene, accident costs, compensation, insurance, and safety organization.
Text: Simons and Grimaldi, *Safety Management.*

I.E.T. 213—Supervisory Training 3—0—3
Staff
Line of responsibility and authority, technique of job instruction, personal leadership, technique of conducting a conference, how to produce for a profit. The subject treats problems of the supervisor

as cost man, as safety man, as production man, as quality man, as personnel man, as the manager of his department.
Text: Heyel, *Foreman's Handbook.*

I.E.T. 220—Principles of Economics 3—0—3
Eller

This is an introductory course in economics. It includes an examination of the two major areas of economics: national income and employment theory and the theory of markets, distribution, and the behavior of the firm.
Text: Ulmer, *Economics.*

I.E.T. 224—Principles of Engineering Economy 5—0—5
Prerequisite—I.E.T. 220 Lawson

Output and life of equipment, operation costs, depreciation rates, economic selection of equipment, determination of economic lot sizes, and cost studies on representative problems.
Text: Grant, *Principles of Engineering Economy.*

I.E.T. 225—Cost Control 2—0—2
Prerequisite—I.E.T. 122 Anderson

Control of material and labor costs, determination of labor requirements, cost studies for use in estimating product prices.
Text: Hill and Gordon, *Accounting—A Management Approach.*

I.E.T. 226—Wage and Salary Administration 3—0—3
Prerequisites—I.E.T. 131, I.E.T. 232
Eller

A study of the basic requirements of a sound wage and salary program. This study includes the techniques of job analysis and job evaluation, commonly used methods of employee rating, and the various wage incentive systems currently being used.
Text: Belcher, *Wage and Salary Administration.*

I.E.T. 231—Statistics 3—0—3
Prerequisite—Math. 111 Keen

Decisions based on observations, and the laws of probability, the binomial and normal distributions, measures of central tendency and dispersion, inferences, linear regression and correlation.
Text: Sprowls, *Elementary Statistics.*

I.E.T. 232—Motion and Time Study 2—3—3
Prequisite—I.E.T. 131 Keen

Principles of motion economy, tools for motion study, time study methods and practice; standard data and work sampling. Use of basic motion-time study as a substitute for time studies. A comprehensive final report is required.
Text: Barnes, *Motion and Time Study.*

I.E.T. 233—Materials Handling 2—3—3
Eller

Selection and use of modern equipment and methods for handling material in the industrial processes.
Text: Immer, *Materials Handling.*

I.E.T. 234—Production Control 3—0—3
Prerequisite—I.E.T. 131 Eller

The preparation for production, planning based on sales forecasts, operation sheets, routing, scheduling, dispatching, follow-up, inventory control, receiving, stores and shipping, control forms and reports.
Text: Voris, *Production Control.*

I.E.T. 235—Quality Control 2—0—2
Prerequisite—I.E.T. 231 Keen

Principles of inspection and quality control, with special emphasis on setting up, maintaining, and interpreting statistical control charts.
Text: Rice, *Control Charts.*

I.E.T. 236—Plant Layout 2—3—3
Prerequisite—M.E.T. 111, M.E.T. 121, I.E.T. 131 Eller

Principles of plant layout, process and flow charts, tools and aids for effective plant layouts, case studies; the supervisor's responsibility for building and equipment maintenance.
Texts: Apple, *Plant Layout and Materials Handling.* Apple, *Lab Manual for Plant Layout.*

I.E.T. 242—Small Business Management 3—0—3
Prerequisite—I.E.T. 122 Parlett

Training in the operation of a small business concern, including a practical knowledge of accepted accounting procedures, order billing, credits and collections, costs, payroll procedures, taxes, and information about standard business and office machines.
Text: Kelly and Lawyer, *How to Organize and Operate a Small Business.*

I.E.T. 243—Business Law 3—0—3
Anderson

The general laws of contracts, agency, sales agreements, and engineering specifications as incorporated into contracts; the business, legal, and ethical phases of engineering.
Texts: Charles, *College Law.* Charles, *Study Reports for College Law.*

I.E.T. 261—Seminar 1—0—1
Anderson

A study of the techniques for obtaining employment, improving one's position after he gets the job, and a general discussion of professional ethics.
Text: Lecture Notes, Visiting Specialists.

Mathematics

Math. 6—Geometry **5—0—0**

Applied plane geometry, including some parts of solid geometry needed in engineering. Many practical problems are worked in detail.
Text: Welchons, Krickenberger, and Pearson, *Plane Geometry.*

Math. 10—Remedial Algebra **5—0—0**

A review of the fundamentals of algebra.
Text: White, *Intermediate Algebra for College Students.*

Math. 110—Integrated Algebra and Trigonometry **5—0—5**

Staff

Prerequisite—Two units of high school algebra and one unit of plane geometry.

(This course recommended only for those students whose scores on the CEEB Intermediate Mathematics Achievement Test indicate ability to succeed in accelerated mathematics.)

The concept of function; exponential, logarithmic, and trigonometric functions; equations and systems of equations; complex numbers and properties of vectors; determinants and matrices; inequalities and series.
Text: Hart, *College Algebra and Trigonometry.*

Math. 111—Algebra **5—0—5**

Staff

Prerequisite—Two units of high school algebra or Math. 10

Systems of equations; exponents and radicals; quadratic functions; graphs of functions; ratio, proportion and variation; complex numbers; higher degree equations; inequalities; logarithms; progressions and determinants.
Text: Hart, *College Algebra and Trigonometry.*

Math. 112—Trigonometry **5—0—5**

Prerequisite—Same as for Math. 111

Maddox

Trigonometric functions, plane right triangles, reduction formulas, fundamental relations, indentities, addition formulas, double angles, half angles, inverse functions, solution of oblique triangles, logarithms, and complex numbers.
Text: Hart, *College Algebra and Trigonometry.*

Math. 114—Analytic Geometry and Calculus **5—0—5**

Prerequisite—Math. 111 and Math. 112

Denning

An introduction to the analytical study of the straight line and conic sections. A survey of the differential and integral calculus with stress on applications in the fields of mechanics and applied engineering.
Text: Granville, Smith & Longley, *Elements of Calculus.*

Math. 213—Calculus II **5—0—5**

Staff

Prerequisite—Math. 114
Differentiation and integration of the transient functions; operations with series; differential equations.
Text: Granville, Smith & Longley, *Elements of Calculus.*

Mechanical Engineering Technology

M.E.T. 111—Tools and Methods **5—0—5**

Arntson

An introduction to the field of metal work and industrial manufacturing for mechanical and industrial students. Possibilities and limitations of various machine tools are developed so that the student will have a basic perspective of modern efficient industrial procedure. The characteristics of different materials are covered as well as their adaptability to the various processes. Each process is covered from a technical viewpoint. Correct terms are introduced so that the student will be able to use the language of the engineer or the technician.
Text: Begeman: *Manufacturing Processes.*

M.E.T. 112—Metallurgy and Heat Treating **3—0—3**

Freeman

Prerequisites—M.E.T. 111 and M.E.T. 121

Fundamentals of metallurgy, grain size, effect of carbon content, and hardness testing devices. Different alloys will be tested to determine the effect of heat treating.
Text: Frier, *Elementary Metallurgy.*

M.E.T. 121—General Metal Lab. **0—6—2**

Cuba

An introduction to metal work, giving the students both actual practice and related information in lathe work, shaper work, bench metal, acetylene welding and cutting, and forging. The proper use and care of hand tools are stressed along with maintenance of shop equipment. Lectures are given on the most frequently used hand tools, measuring devices, and specifications of ordering materials and supplies.
Text: Burghart, *Machine Shop I.*

M.E.T. 122—Machine Lab. I **0—6—2**

Sorrells, Freeman

Prerequisite—Dr. 111

Fundamental machine operations of drilling, reaming, turning between centers,

chuck work, thread cutting, shaper work, layout, and finishing. Special attention will be given to cutting speeds, tool and drill grinding, and machine upkeep.
Text: Burghart, *Machine Shop I & II.*

M.E.T. 123—Machine Lab. II **0—6—2**
Prerequisite—M.E.T. 122 Freeman
A continuation of Machine Shop I with the following additions: use of gages, taper turning, gear cutting, square thread cutting, and types of fits. The topics studied are applied practically in the shop as the required projects are made.
Text: Burghart, *Machine Shop I & II.*

M.E.T. 214—Inspection Methods **3—0—3**
Freeman, Arntson
Prerequisite—M.E.T. 121
A study of the use and care of precision instruments, and methods of inspection. Types and methods of inspection are compared and discussed from samples chosen from industry as a comparison.
Text: Michelon, *Industrial Inspection Methods.*

M.E.T. 215—Jigs and Fixtures **3—3—4**
Cuba, Freeman
Prerequisite—M.E.T. 111.
Factors involved in large quantity production machine processes. Types of jigs and fixtures, different methods of gaging work, ease of operation, and methods of assembly are studied. Machine parts are selected and preliminary methods of production together with cost estimates and production costs are calculated for each part chosen.
Text: Jones, *Jig and Fixture Design.*

M.E.T. 216—Machine Design **5—0—5**
Bosher
Prerequisite—C.E.T. 114
A study of the selection of materials and of machine elements, such as fasteners, springs, and translation screws. The course also includes methods for designing and selecting power-transmission units and their components.
Text: Phelan, Richard M., *Fundamentals of Mechanical Design.*

M.E.T. 217—Thermodynamics I **3—0—3**
Staff
Prerequisite—Math. 114
A study of the fundamental laws of thermodynamics and the properties of systems. Project gas laws are also considered.
Text: To be selected.

M.E.T. 218—Thermodynamics II **2—0—2**
Staff
Prerequisite—M.E.T. 217
A continuation of M.E.T. 217 or applications of thermodynamics to engineering systems including gas cycles, compressors, refrigeration, are considered. Heat transfer in conjunction with these engineering systems is also covered.
Text: To be selected.

M.E.T. 224—Welding **0—6—2**
Cuba
Prerequisite—M.E.T. 121
Fundamentals of both arc and acetylene welding. A study is made of the most economical methods in regard to welding time, machinability, and ductility. Methods of manufacturing rods, types of rods, color code of rods, safe practices in welding, and welding symbols are covered in lectures.
Text: Morris, *Welding Processes and Procedures.*

M.E.T. 225—General Sheet Metal **0—6—2**
Arntson, Freeman
Prerequisite—Draw. 111
Shop problems, including layouts and methods of fabrication of sheet metal.
Text: Bruce, *Sheet Metal Shop Practice.*

Physics

Physical Science 100—A Survey of Physical Science **5—0—5***
Defore, Staff
A survey of the physical sciences. *(Not available for credit toward the associate in engineering degree. May be used to satisfy admission requirements in science.)
Text: Gamow, *Matter, Earth, and Sky.*

Physics 131—Mechanics **5—3—6**
Prerequisite—Math 112 or concurrently
Defore, Lambert, Staff
An introduction to Newtonian mechanics. The subject matter includes measurement, structure and properties of matter, elasticity, kinematics and dynamics of translation, statics, friction, work, energy, momentum, circular motion, kinematics and dynamics of simple vibratory motion, kinematics and dynamics of rotation, hydrostatics, and fluids in motion. Laboratory exercises supplement the work in the classroom.
Texts: Smith and Cooper, *Elements of Physics,* 7th Ed.; Defore, *Physics Laboratory Exercises,* 4th Ed.

Physics 132—Electricity **3—3—4**
Defore, Hurst, Staff
Prerequisite—Physics 131
An introduction to electricity and a study of its simpler applications. The subject matter includes electrolysis, electric force, electric fields, electric potential, capacitance, electric current, resistance, DC

circuits, electromagnetism, magnetic materials, electrodynamics, simple AC circuits, and simple electric machines. The laboratory exercises supplement the work in the classroom.
Texts: Same as for Physics 131

Physics 133—Heat, Sound, Light 3—3—4
Defore, Stone, Staff
Prerequisite—Physics 131

An introduction to the principles of heat, sound and light, and a study of their simpler applications. The subject matter includes thermometry, thermal expansion, calorimetry, phase change, heat transfer, thermal behavior of gases, elementary thermodynamics, wave motion, sound, photometry, geometric optics, wave optics, and applied optics. Laboratory exercises supplement the work in the classroom.
Texts: Same as for Physics 131

Physics 134—Modern Physics 2—0—2
Defore, Staff
Prerequisites—Physics 131 and 132

A brief survey of atomic and nuclear physics. The subject matter includes elementary properties of fundamental particles, atomic structure, elementary nuclear structure, natural and artificial radioactivity, half-life, absorption, basic instrumentation, and an introduction to health physics. Demonstrations are employed to supplement the lectures.
Text: Same as for Physics 131

Textile Engineering Technology

T.E.T. 111—Raw Materials 3—0—3
A survey and interest course designed to familarize new students with the textile industry and processes. Course briefly covers (1) history; (2) study of major types of fibers including major chemical and physical properties of (a) vegetable fibers, (b) animal fibers, (c) mineral fibers, (d) man-made fibers; (3) a brief survey of manufacturing processes stressing basic machinery used and nomenclature.

T.E.T. 121—Opening, Picking and Carding Processes 3—3—4
A course designed to give the student a thorough background in opening, cleaning, picking, and carding. This course covers processing of natural and synthetic fibers on the cotton system.
Text: *I.T.C., Vol.* 1 *and Manufacturers' Handbooks.*

T.E.T. 122—Drawing, Combing, and Roving Processes 3—3—4
Prerequisite—T.E.T. 121
A course designed to give the student a thorough background in drawing, combing, and roving. The course covers processing of natural and synthetic fibers on the cotton system.
Text: *I.T.C., Vol.* 1 *and* 2 *and Manufacturers' Handbooks.*

T.E.T. 123—Spinning, Winding, Twisting, and Warping Processes 3—3—4
Prerequisites—T.E.T. 121 and 122
A course designed to give the student a thorough background in spinning, winding, quilling, twisting, and warping. This course covers processing of natural and synthetic fibers on the cotton system.
Texts: *I.T.C., Vol.* 3 *and* 4.

T.E.T. 162—Textile Chemistry and Dyeing 3—0—3
This course deals with the general methods for bleaching, dyeing, and finishing materials made from natural and synthetic fibers.

T.E.T. 231—Weaving—Cam, Dobby, and Box Loom Mechanisms 3—3—4
Course covers theory of weaving, principal motions, auxiliary motions, mechanical and electrical warp stop motions, let-off and take-up mechanisms, principles of shedding with cams and dobbies. Laboratory covers weaving practice and reports made from studies of the looms.

T.E.T. 232—Warping, Slashing, and Dry Finishing (Cloth Room) Processes 3—0—3
Course covers theory of warp preparation, construction of warpers and slashers, theory of size preparation, size components, size formulas. "Cloth Room Processes" covers construction of various machines, their purposes, the order in which they are arranged. Types best suited to mills on various kinds of fabrics.
Text: *I.T.C., Vol.* 7.

T.E.T. 242—Fabric Analysis 2—3—3
A course designed to give the student a background of information on the analysis of fabrics for weave, yarns, drafts, harness arrangement and reed plan. Sufficient data are collected on each of several plain and fancy fabrics to enable the student to duplicate the fabrics.
Text: *I.T.C., Vol.* 8.

T.E.T. 244—Physical Testing—Fibers, Yarns, and Fabrics 1—3—2
A course designed to teach students the fundamental testing procedures ordinarily performed in the mill laboratory. Includes Micronaire, Fibro-Graph, and Shirley Analyzer tests on fibers; uniformity, twist, strength, and count determination on yarns; breaking strength, tearing strength, luster strength, abrasion resistance, and weight determination on cloth.

T.E.T. 245—Fabric Design **3—0—3**

A study of the fundamental weaves, their common derivatives, and the drafting of these weaves. Covers plain, twill, and satin weaves and the construction of drawing in and chain drafts for each weave studied.

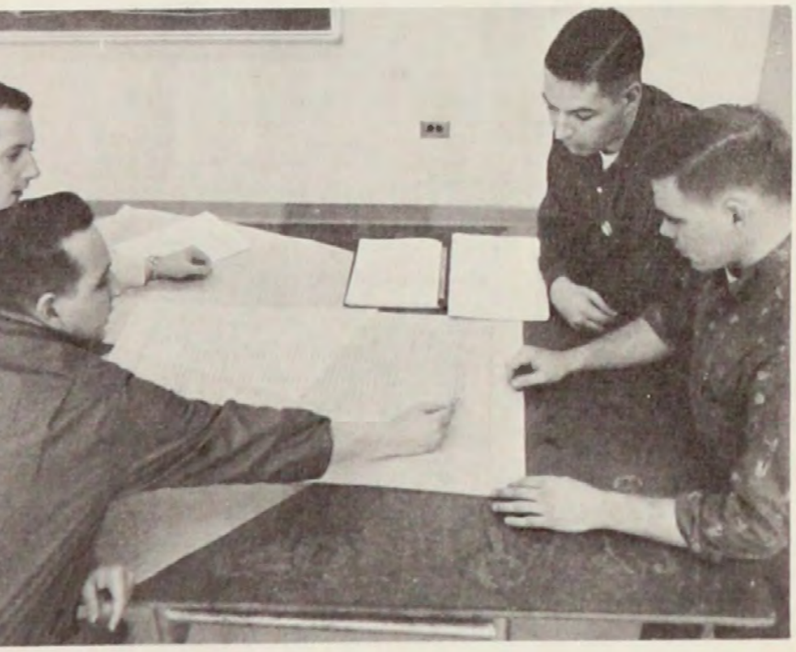
The study of design will be tied in with a survey course covering several standard textile fabrics manufactured and marketed at the present time. The details covered will include the name and its derivation; a physical description of the fabric; the uses for the fabric both in the gray and the finished state; and the design and construction of the fabric.

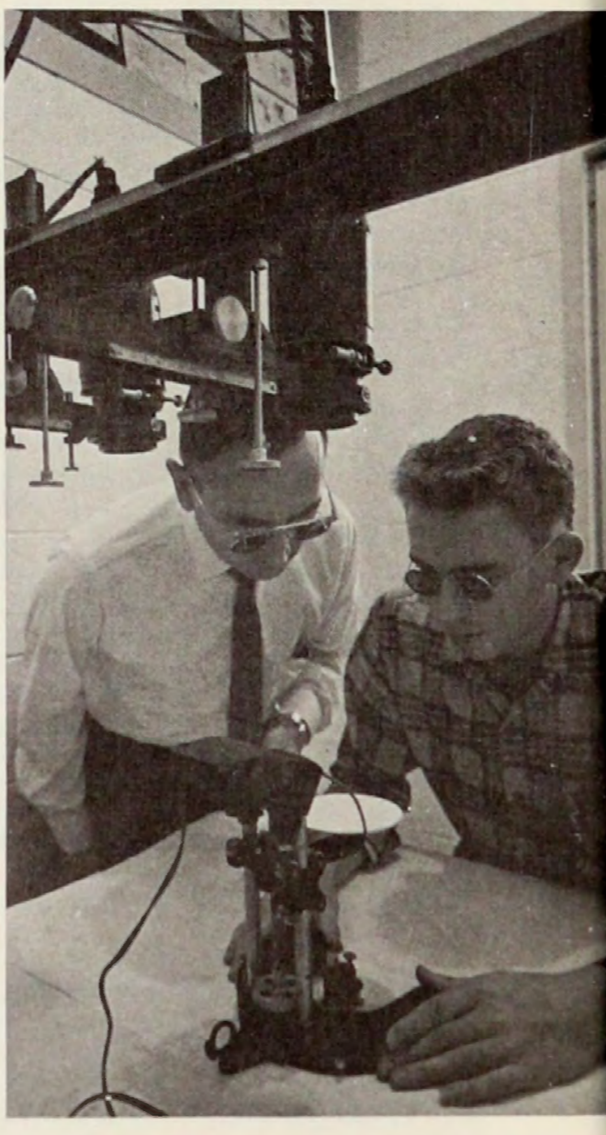
Text: *I.T.C., Vol.* 8.

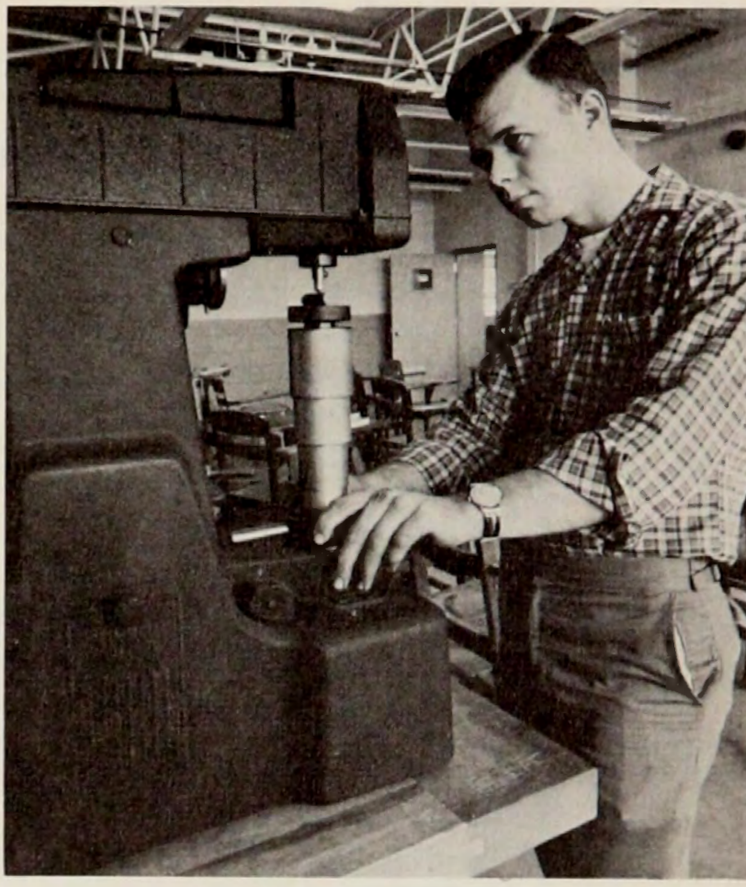
T.E.T. 251—Textile Calculations and Costing **3—0—3**

A course designed to give the student a concentrated study of textile calculations, including machine, operating, mill organization, and production and process-control calculations. The course is also designed to give the student the basic principles and theory of textile costing.

THIS IS SOUTHERN TECH







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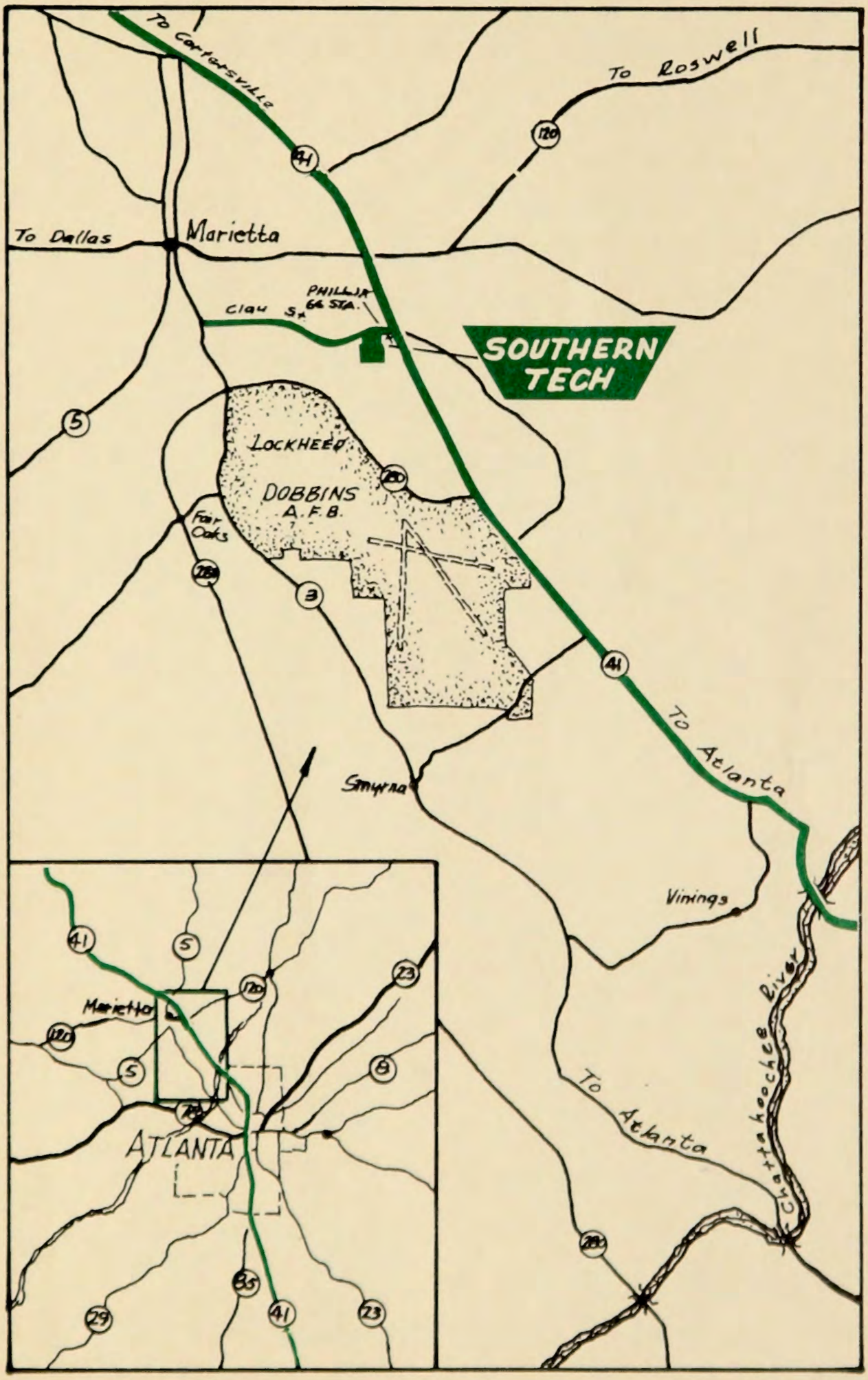
How to get to Southern Tech at Marietta, Georgia.