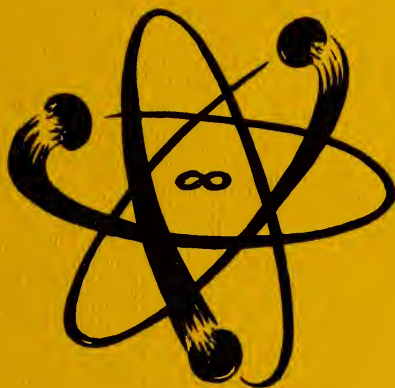


Shilling
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KANSAS INSTITUTE
OF TECHNOLOGY

GENERAL BULLETIN
1967 - 1968

1967-68
Vol.2
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SCHILLING INSTITUTE

(Kansas Institute of Technology)

Salina, Kansas

GENERAL INFORMATION BULLETIN

Fall Semester 1967 Through
Summer Session 1968

Volume 2

1967



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Comparison of Engineering College, Technical Institute and Trade School

ITEM OF COMPARISON	THE ENGINEERING COLLEGE	THE TECHNICAL INSTITUTE	THE TRADE SCHOOL
1. Entrance requirements	High school graduation or equivalent with applicable credits in Mathematics and Science	High school graduation or equivalent with applicable credits in Mathematics and Science	May be high school undergraduate
2. Treatment of fundamentals	Mathematics and Science taught with principal emphasis upon theoretical derivations and basic laws.	Mathematics and Science taught with principal emphasis upon application to industrial uses	Trade Mathematics, a form of excerpts from Arithmetic for specialized use in the trade
3. Industrial Arts and craft skills	Not offered	Not offered, except as a minor supplement in laboratory programs for the purpose of industrial application	Principal area of instruction
4. Level of studies	Post high school and graduate	Post high school	Grade or high school
5. Designation of educational levels	"Higher Education," "College," "University," "Professional"	"Higher Education," "College"	"Secondary School," "Trade School"
6. Initial Employment	Engineer, Engineering Designer	Engineering Aide, Research Associate, Engineering Technician, etc.	Mechanic, Tradesman, Operator
7. Work assignments of graduates	Synthesizing, analyzing, designing, testing and supervising	Assisting engineers in analyses, design, testing and supervision	Installation, maintenance, repair and manufacturing
8. Proportion of theoretical engineering instruction and practice	Emphasizes theoretical instruction and less practical application	Adequate coverage of theory with emphasis upon practical application	Little theory, nearly all practice
9. Transfer of credit to professional training	Considerable, often full credit is given although this varies substantially between colleges	In general some transfer credit is granted. Achievement examinations may be required	None
10. Accrediting or approval agency	Engineers' Council for Professional Development and Regional Associations	Engineers' Council for Professional Development and The National Council of Technical Schools	No information
11. Typical certification of graduates	Bachelor of Science Degree	Associate in Science Degree, Diploma, or Associate in Engineering	Certificate or Diploma

NOTE: The starting positions of Engineering College and Technical Institute graduates are often similar. Advancement thereafter within industry depends upon individual qualifications with the Technical Institute graduate favoring applied technology.— (Reprinted from National Council of Technical Schools Engineering Technology Publication No. 1065, copyright 1966.)

COLONEL DAVID CARL SCHILLING

The Kansas Legislature retained the name of Schilling for the State's Technical Institute in memory of the World War II Air Force hero. Colonel Schilling was born at Leavenworth, Kansas, and lost his life in an automobile accident in England on August 14, 1956, while serving as a member of the Strategic Air Command. During his career as a fighter pilot, Colonel Schilling was credited with shooting down twenty-three (23) German planes. For his combat achievements, he was awarded the Distinguished Service Cross, the Silver Star, the Distinguished Flying Cross, the Air Medal, the British Distinguished Flying Cross, the French Croix de Guerre, and numerous other honors.

STATE EDUCATION AUTHORITY

The Board charged with the responsibility of establishing Schilling Institute is the State Education Authority composed of three (3) members, with the State Superintendent of Public Instruction serving as Chairman of the Authority. Present members of the Authority are:

W. C. KAMPSCHROEDER—State Superintendent of Public Instruction.

PAUL E. RUSSELL—Dean, College of Engineering, Kansas State University.

LAURIN W. JONES—Businessman and Educational Leader, Dodge City.

OFFICE OF THE PRESIDENT

H. M. Neely, Jr., *President*: B. S. Mechanical Engineering; M. S., Mechanical Engineering, Kansas State University. Professional Engineer.

Mrs. Glenda S. Evans, Secretary to President.

Administrative Faculty

William C. Carter, Professor, Director of Student and Public Affairs: B. S. Industrial Engineering; B. S. Business Administration, Kansas State University.

Thomas F. Creech, Professor, Director of Academic Affairs: B. S. Mechanical Engineering; M. S. Applied Mechanics, Kansas State University.

Faculty

Kurt A. Booe, Professor and Head Civil Technology: B. S. Civil Engineering; M. S. Civil Engineering, Kansas State University. Professional Engineer.

Donald L. Buchwald, Professor and Head, Mechanical Technology; B. S. Technical Education, Oklahoma State University.

John P. Dollar, Professor and Head Electronic Technology: B. S. Electrical Engineering; M. S. Electrical Engineering, Kansas State University.

Harrell Guard, Instructor, General Technology: A. B. Social Science, Tabor College; B. A. History, Manhattan Bible College.

Ruth T. Haddock, Instructor, Mathematics: B. S. Civil Engineering, University of Louisville.

David E. Michael, Instructor, Mathematics: B. A. Mathematics, Kansas Wesleyan University.

William E. Rakestraw, Professor and Head Aeronautical Technology: B. S. Technical Education, Oklahoma State University; FAA Airframe and Power Plant Mechanic, FAA Private Pilot.

Chester L. Rankin, Professor, Electronic Technology: B. S. Technical Education, Oklahoma State University; FAA Private Pilot, First Class Radiotelephone License.

Reinhart Schwemmer, Instructor, Mathematics and Physics: A. B. Physics, Pittsburg State College, AAPT.

Arnold Stephens, Teaching Technician, Civil Technology: Engineering Technician.

William G. Stiles, Jr., Teaching Technician, Aeronautical Technology: A. S. Aeronautical Technology, Oklahoma State University; FAA Airframe and Power Plant Mechanic, FAA Private Pilot.

James E. Tullis, Professor and Head, General Technology: B. S. English, Kansas State University.

June Clancy McKee, Librarian: B. S. Library Science, Texas Women's University.

Administrative Staff

Verner Smith, Jr., Director of Operational Affairs.

Mrs. Juanita Kent, Personnel Officer.

Richard E. Moses, Superintendent, Physical Plant.

AERONAUTICAL TECHNOLOGY ADVISORY COMMITTEE

Industry

Cliff Titus, Beech Aircraft Corporation, Wichita, Kansas.

Dr. Leslie Thomason, Cessna Aircraft Corporation, Wichita, Kansas.

Education

Dr. Vincent Muirhead, Professor, Department of Aeronautical Engineering, University of Kansas, Lawrence, Kansas.

Dr. M. H. Snyder, Professor, Department of Aeronautical Engineering, Wichita State University, Wichita, Kansas.

Dr. Ralph G. Nevins, P. E., Professor, Head, Department of Mechanical Engineering, Kansas State University, Manhattan, Kansas.

Professional Society Representation

Charles V. Petrie, P. E., Boeing Aircraft Company, Wichita, Kansas.

Richard J. Crupper, P. E., Cessna Military Aircraft, Wichita, Kansas.

Members at Large

Nick Delere, Capital Air Service, Municipal Airport, Manhattan, Kansas.

Roy Daugherty (Chairman), Associated Aviation Underwriters, Inc., Kansas City, Missouri.

Dan Meisinger, Municipal Airport, Topeka, Kansas.

CIVIL TECHNOLOGY ADVISORY COMMITTEE

Industry

Murray Wilson, P. E. (Chairman), Wilson & Company, Salina, Kansas.

Martin K. Eby, P. E., Eby Construction Company, Wichita, Kansas.

E. M. Johnson, Black & Veach, Kansas City, Missouri.

Education

Dr. D. Haines, Professor, Department of Civil Engineering, University of Kansas, Lawrence, Kansas.

Dr. W. D. Bernhart, Professor, Department of Mechanics, Wichita State University, Wichita, Kansas.

Dr. Jack Blackburn, Professor, Head of Department of Civil Engineering, Kansas State University, Manhattan, Kansas.

Professional Society Representation

L. E. Dobbs, P. E., Assistant Div. Construction Engineer, State Highway Commission, Hutchinson, Kansas.

Paul E. Nixon, P. E., Nixon & Seaman, Liberal, Kansas.

A. S. C. E. T. Representation

Hugh Steadman, Evans & Bierly, Great Bend, Kansas.

Charles Hyde, State Highway Commission, 323 Broadway, Newton, Kansas.

Members at Large

Harold Frame, State Architect Representative, Kansas State University, Manhattan, Kansas.

Paul B. Adrian, 217 West Ash, Salina, Kansas.

ELECTRONIC TECHNOLOGY ADVISORY COMMITTEE

Industry

Virgil Lundberg, P. E., Lundberg Engineering Company, Salina, Kansas.

Bryce Miller, P. E. (Chairman), Southwestern Bell Telephone Company, Topeka, Kansas.

Education

Dr. Don Daugherty, Professor, Department of Electrical Engineering, University of Kansas, Lawrence, Kansas.

Dr. Colon Dunn, Professor, Department of Electrical Engineering, Wichita State University, Wichita, Kansas.

Dr. Leo Wirtz, Professor, Department of Electrical Engineering, Kansas State University, Manhattan, Kansas.

Professional Society Representation

James M. Berry, Department of Business Administration, Wichita State University, Wichita, Kansas.

James T. Arthur, P. E., 124 North Fountain, Wichita, Kansas.

Member at Large

Phil Wilcox, Cable TV—Junction City TV Company, Post Office Box 125, Junction City, Kansas.

MECHANICAL TECHNOLOGY ADVISORY COMMITTEE

Industry

Clifford R. Horn, P. E. (Chairman), Panhandle Eastern Pipeline Co., Liberal, Kansas.

L. M. Van Doren, P. E., Van Doren-Hazard-Stallings-Schnacke, 2910 Topeka Avenue, Topeka, Kansas.

Education

Dr. Charles Baer, Professor, Department of Mechanical Engineering, University of Kansas, Lawrence, Kansas.

Dr. John Severt, Professor, Department of Mechanical Engineering, Wichita State University, Wichita, Kansas.

Dr. Ralph G. Nevins, P. E., Professor, Head of Department of Mechanical Engineering, Kansas State University, Manhattan, Kansas.

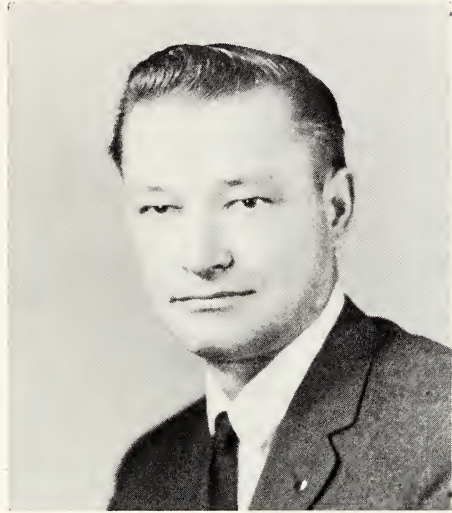
Professional Society Representation

Douglas S. McCully, P. E., Brink & Dunwoody, Iola, Kansas.

A. S. C. E. T. Representation

Walter J. King, Wilson & Company, Salina, Kansas.

Gerald Cooksey, Kansas Power & Light Company, Salina, Kansas.



PERSONAL MESSAGE FROM THE PRESIDENT

The establishment of Schilling Institute as the Technical Institute of the state of Kansas is recognized as a milestone in the higher education system of the state.

Economic and industrial growth is related to the quality of technical education programs offered to and actively supported by the state's citizens. Industrial development is dependent on the highly trained technical personnel in the state's labor force.

Kansas, with the establishment of Schilling Institute, has the capability necessary for training the technical personnel so urgently needed by the existing industries and demanded by industrial prospects. The professional programs offered by our universities and colleges as well as the many skill and vocational programs being developed in the area vocational schools, will be complimented by the two-year semi-professional technology programs offered by Schilling Institute.

We cordially extend an invitation to all citizens to visit with us about our technology programs.

If you have the interest and ability, we are here to help you in seeking a better position in life.

Sincerely,

HENRY M. NEELY, P. E.,
President.

Institute Calendar

	1967-68 School Year
Fall Semester	
Registration and orientation	September 5-6
Classes begin	September 7
Last day to register	September 16
Last day to add courses	September 29
Last day to drop courses	October 27
Thanksgiving Vacation	November 22-26
Christmas Vacation	December 20-January 2
Final examination week	January 15-19
Fall semester ends	January 19
Spring Semester	
Registration and orientation	January 22-23
Classes begin	January 24
Last day to register	February 3
Last day to add courses	February 16
Last day to drop courses	March 15
Spring Vacation	March 23-31
Final examination week	May 20-24
Spring semester ends	May 24
Summer Session	
Registration and orientation	June 3
Classes begin	June 4
Last day to register	June 8
Last day to add courses	June 14
Last day to drop courses	June 28
Final examination week	None
(Final examinations are given during last regular classes)	
Summer session ends	August 2

1966

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	26	27	28	29	30	31				24	25	26	27	28	29 30
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1969

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The Technical Institute

Schilling Institute was created by the Kansas Legislature in the General Session of 1965, when authorization was granted for the establishment of the institute on the site of the deactivated Schilling Air Force Base at Salina, Kansas.

The institute offers two-year semiprofessional programs in technical education. Each program is occupationally oriented and is designed to prepare students for immediate employment upon graduation. The Associated Degree will be granted to those persons satisfactorily completing the curricula requirements. It is the only institution of its kind in the state of Kansas. The institute works closely with industries and business enterprises who need highly-trained technicians and is continuously exploring the need for educational programs in technological fields in an effort to keep abreast of the demands of our state and nation for specialized technicians.

The field of engineering has changed radically during the past two decades because of the astounding advances in modern industrial technology. The average interval of time between a scientific discovery and its practical application in industry has been reduced from five to ten years to five to ten months, with the result that most engineering programs in institutions of higher learning are now heavily oriented toward basic science with the major emphasis on Physics, Electronics, Computers and Automation.

Since the modern engineer has had to abandon the broad area of applied engineering work, the engineering technician has evolved to handle this aspect of technology.

Although technicians do not receive as much training as engineers in the mathematics and physics required in the complexities of today's technology, they must, nevertheless, be well-grounded in the fundamentals of these subjects so that they can properly interpret the plans of engineers or scientists. The technician must also receive a broad practical education in order to develop sufficient skills and management abilities to qualify for a position in construction, installation, operation and maintenance of machinery and mechanical and electronic equipment; or as a foreman, inspector, estimator, or service supervisor; or as a laboratory technician or engineering aide in an industrial research laboratory.

Students completing a program of education at Schilling Institute will be prepared to preform an economic service for their employers with a minimum of on-the-job training. Graduate technicians will serve as the liaison between the professionals and the skilled workers. In their role as the connecting links, technicians will have knowledge of the work of both the professionals and the skilled

workers. Technicians will translate creative ideas into new machines, products, structures, or processes. They will be familiar with the hand and machine tools of skilled workers and they will understand the basic scientific principles that are the tools of the professionals in their fields.

Purposes and Philosophy of Schilling Institute

The philosophy supporting the development of Schilling Institute is based on the principle that for every student who has the capacity, incentive, and resources to pursue technological education to a bachelor's or an advanced degree, there are many who have the capacities, interests, and aptitudes to develop productive and rewarding careers in the expanding realm of applied science and in the technologies which neither require nor justify four or more years of collegiate study.

The basic objective of Schilling Institute is to provide competent educational programs at the collegiate level through which qualified students may achieve a maximum development of their individual talents as preparation and inspiration for productive and rewarding careers in private or public services.

Although major emphasis is placed upon technology, science, and mathematics, Schilling Institute offers related courses in the social science and communication fields in an effort to provide the student with the background necessary for social and economic growth. In addition to instruction in specific technical fields, each program at Schilling will include courses in written and oral communications, basic economics, and industrial relations. The institute seeks to develop the abilities of its students not only in the area of their technical specialties, but also in their ability to communicate and work with others. Every effort is made to provide a broad educational program to aid graduate technicians as they advance into positions of leadership in their chosen fields.

Schilling Institute Campus

The Schilling Institute campus is located approximately three (3) miles southwest of Salina, Kansas. It is located approximately one-quarter ($\frac{1}{4}$) mile west of the Schilling Road interchange on Interstate Highway 35W and approximately three (3) miles south of the interchange of Interstate Highways 35W and I-70.

The campus is divided into two (2) major areas. The educational complex of buildings consists of nineteen (19) buildings including two (2) aircraft hangars. The instructional program facilities provide modern and efficient space allotments for classroom and laboratory instruction.

The second complex of buildings, approximately one-quarter ($\frac{1}{4}$) mile south of the instructional area, provides the student residence and supports facilities necessary for a well-rounded campus. Included are twenty-six (26) student dormitories, dining halls, gymnasium, auditorium-theater, library, student activity center, chapel, swimming pool, tennis courts, and athletic fields. In total, there are forty-one (41) buildings in this second major area. The campus of the institute totals some one hundred eighty-two (182) acres.

The physical facilities of Schilling Institute are of modern functional design and provide complete, efficient, and pleasing surroundings for both student and faculty.



AERIAL VIEW OF EDUCATIONAL AREA

Admission

Students interested in attending Schilling Institute should contact the Director of Admissions requesting an application for admission. The student should complete the application form, indicating the curriculum in which he plans to enroll, and return it to the Admissions Office. All correspondence with respect to admissions should be addressed to the Director of Admissions.

Admission Requirements

Applicants for admission to the technology programs offered at Schilling Institute should be graduates of an accredited high school. Although specific courses of instruction in high school are not required for admission of Kansas residents, an applicant's high school background should stress courses in Communications, Mathematics and Physical Sciences.

If Possible

A student planning to attend a technical institute should include the following units in his high-school program:

- (A) *English*—Three (3) units.
- (B) *Mathematics*—Two (2) units of Algebra, one (1) unit Geometry and one-half ($\frac{1}{2}$) unit Trigonometry.
- (C) *Science*—One (1) unit physical science (physics or chemistry).

Under certain conditions, applicants who are not graduates of an accredited high school at the time of matriculation may be admitted to Schilling Institute. Such applicants may be required to take additional testing. The results of these tests will be used to aid the student in selecting courses in the SPACE Program (reference page 40). Students who have not completed entrance requirements may enroll in the SPACE Program for a period not exceeding two (2) semesters.

The technical institute student should possess the following qualities, which are fairly reliable predictors of scholastic achievement and success in this level of technical education:

- (a) An average or above-average record for four (4) years of high-school work or a similar record of equivalent training and education.
- (b) An aptitude, skill and interest in mathematics (especially algebra), science (especially physics) and English.
- (c) Some mechanical aptitude and manual dexterity.
- (d) An ability to grasp the basic concepts of applied technology.
- (e) A genuine interest in and enthusiasm for some technical field.

- (f) Determination and willingness to work hard.
- (g) Ability to work with and influence other people.

Transfer Students—Advanced Standing

Applicants may be accepted for enrollment by transfer from an approved university, college, junior college or technical institute if their records indicate the ability to successfully pursue the courses included in their chosen curriculum.

Students may be admitted to advanced standing if credits earned at other institutions are accepted by the Institute's Evaluation Committee. In some cases, special examinations may be required to evaluate credits earned at other institutions.

Students expecting to obtain waiver of credit for any course in their technology will submit copies of appropriate transcripts or documents to the Director of Admissions thirty (30) days prior to their matriculation date.

Credit by Special Examination

Credit in any subject may be granted by special examination. In general, permission to take a special examination is granted by the administrative head of the technology curriculum in which the student is enrolled. Grades received on special examinations will be placed in the student's permanent file. A student requesting permission to take a special examination for course credit may be required to pay an examination fee.

Medical Examination

A complete medical examination is required of each new student. Applicants who have been tentatively accepted for admission at Schilling Institute will be mailed a medical form which should be given to their family physician at the time they appear for a medical examination.

The medical report, filed with the institute by the student's family doctor, will become a part of the student's confidential file. The purpose of the report is to evaluate the student's state of health, determine remedial defects, detect infections or contagious conditions and to provide a medical history in case a student requires medical aid while attending school.

American College Test (ACT)

All applicants for enrollment at the institute will be required to take the American College Testing Program (ACT) tests prior to enrollment. High-school students should arrange with their coun-

selor or principal to take the tests during their senior year and request that these scores be sent to the Director of Admissions at Schilling Institute. Other applicants may contact a local high school or the Admissions Office at the institute for test information on the American College Testing Program.

Special Students

A limited number of courses will be open to individuals who wish to enroll as special students. Prior to acceptance, special students must provide the information necessary to determine if they have the required background of education or experience to successfully complete the specific course, and in most cases, must obtain written permission from the instructor to enroll in the course. Special students may take a course for credit or they may audit the course if they have no intention of taking the course for credit at some later date. Auditors will not be required to take examinations, nor will they receive credit on their transcript for completion of the course. In either case, regular semester hour fees will be charged. Persons desiring to audit a course must obtain permission from the instructor of the course and pay all required audit fees.

Out-of-State Applicants

Out-of-state applicants for admission to Schilling Institute will be required to pay nonresident fees (see fee schedule) and generally must have a good academic rank in their high-school graduating class. The residence of students entering Schilling Institute is determined by an act of the legislature (Sec. 76-2701, Kansas Statutes Annotated, Volume 6) which reads as follows:

"Persons entering the state educational institutions who, if adults, have not been, or if minors, whose parents have not been residents of the state of Kansas for six (6) months prior to matriculation in the state educational institutions, are nonresidents for the purpose of payment of matriculation and incidental fees: *Provided further*, That no person shall be deemed to have gained a residence in this state for the aforesaid purpose while or during the elapse of time attending such institution as a student, nor while a student of any seminary of learning, unless, in the case of a minor, his parents shall have become actual residents in good faith of the state of Kansas during such period, or unless, in the case of the minor, he has neither lived with nor been supported by his parents or either of them for three (3) years or more prior to enrollment and during said years has been a resident in good faith of the state of Kansas."

Foreign Applicants

The credentials of applicants from foreign countries are evaluated in accordance with the general regulations governing admission. An application and detailed transcripts of records must be submitted to the institute six (6) months in advance of reopening of the

class in which the applicant seeks to gain admission. This will allow time for the exchange of necessary correspondence and documents relative to the securing of passports and visas for study in the United States. Candidates for admission must complete all arrangements for the necessary American dollars to cover tuition and living expenses and must furnish advance proof according to the amount shown on the certificate of eligibility of the U. S. Emigration Service Form I-20A.

Candidates for admission are required to consult the American Embassy in their country of residence and make arrangements to take an English language examination. The results of this examination are an important factor in determining the acceptability of an applicant. Schilling Institute must receive this information directly from the Consular's Office before a decision concerning admission will be reached.

Foreign students will be considered nonresidents for the purpose of paying student fees.

Fees and Expenses

The amount a student spends and the actual cost of obtaining an education at Schilling Institute are two (2) different items. A student can anticipate certain fixed expenses, such as enrollment fees, but beyond that, financial outlays depend to a considerable extent on the personal habits and management ability of the student. An estimate of the cost of attending Schilling Institute for two (2) regular semesters for a Kansas resident follows:

Fees	\$258.00
Books and supplies	120.00
Room and board (on campus)	730.00
	<hr/>
Total estimated cost *	\$1,108.00

* Exclusive of expenditures for clothing, laundry, travel, social activities and other miscellaneous expenses.

When considering the feasibility of attending Schilling Institute, it must be remembered that the institute's educational programs are designed to permit the qualified student to complete his education in four (4) regular semesters and one (1) intervening summer session. Eliminating miscellaneous expenses, the student can expect to finance his complete educational program at Schilling Institute for a cost of approximately \$2,500.00.

Enrollment Fees

Fees at Schilling Institute are established by the State Education Authority and are subject to change at any time. Following is a description of the current student fees at Schilling Institute:

REGULAR SEMESTER FEES

	Kansas resident	Non-Kansas resident
Incidental fees	\$120.00	\$360.00
Student activities	9.00	9.00
Total	\$129.00	\$369.00

STUDENTS ENROLLED IN SIX SEMESTER CREDIT HOURS OR LESS

	Kansas resident	Non-Kansas resident
Incidental fees (per semester credit hour)	\$8.50	\$25.50
Student activities	4.50	4.50

SUMMER SESSION FEES

	Kansas resident	Non-Kansas resident
Incidental fees (per semester credit hour)	\$8.50	\$25.50
Student activities	4.50	4.50

Students enrolling or paying fees after the regularly scheduled enrollment period and prior to the last day to register (see Institute Calendar) are assessed a late enrollment fee of \$5.00.

Incidental Fee

The Incidental Fee is used to pay, in part, costs of administration, operation and maintenance, equipment, library books, and other supplies. This fee constitutes approximately 15 to 20 percent of the total cost of instruction.

Laboratory Fees

Miscellaneous laboratory expenses are included in the incidental fee and are used to cover replacement, breakage and repair of equipment and supplies used in laboratory instruction. However, students will be required to provide their own slide rules, small hand tools, drafting instruments and similar personal equipment necessary in their chosen technology. A listing of the minimum requirements of such items will be issued by the class instructors.

Student Health

Arrangements are made with a Salina medical clinic to provide medical care for Schilling Institute students, when required, at the student's expense. A student medical-hospitalization group plan is available to students and dependents.

Student Activity Fees

The Student Activity Fees are used for student activities, including intramural sports, student organizations, religious oriented activities, and student union activities.

Payment of Fees

Each student must pay the total amount of enrollment fees on the day of enrollment. Checks drawn on out-of-town or local banks are acceptable. Also, students living in institute housing facilities must make the initial payment (by separate check) on their room and board contract at the time of enrollment.

Refunds

A student who enrolls at Schilling Institute, but who finds it necessary to withdraw from school, is entitled to a refund of enrollment fees as determined by the Office of Admissions. The refund schedule allows 80% refund after the first class day. This refund percentage diminishes at a rate of 4% for each class day. After the 20th class day, no refund will be allowed.

Operation of Motor Vehicles

Students enrolled at the institute who wish to operate motor vehicles on the campus must register their vehicle with the Business Office. Upon payment of a parking and use fee, established by the Traffic Control Board, the student will be issued an identification sticker permitting parking in all non-restricted parking areas. Violation of traffic and parking regulations will be subject to progressive fines and, if excessive, may result in dismissal from the Institute.

Housing and Food Service

Recognizing the benefits to be gained from experience in group living, Schilling Institute provides modern dormitory and dining facilities for students enrolled in a resident instruction program. All first year, single students are required to live in institute dormitories, unless special permission is received from the Director of Student Affairs for a student to live in approved off-campus housing.

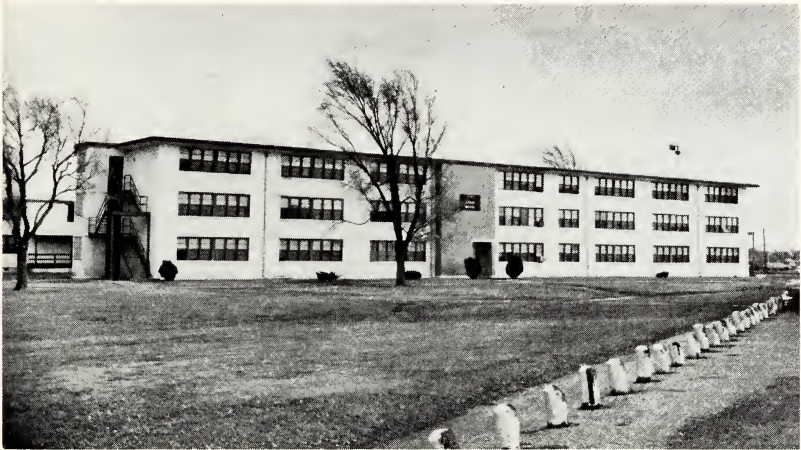
Dormitory rooms are reserved by paying a deposit of Twenty-Five Dollars (\$25.00) which is not refundable after August 15. Reservations, including the deposit, should be made as early as possible. As soon as an applicant's reservation has been confirmed by the Institute's Housing Department, contracts for room and board will be sent to applicants for their signature. Housing regulations, refund policies, and campus rules of conduct will be printed on and attached to the contract and each student must agree to abide by these rules and regulations.

Dormitory facilities are designed to accommodate two (2) students per room. All rooms are equipped with single beds, adequate storage, and comfortable furniture. Dormitory fees include weekly linen service. Blankets and other incidental room furnishings are supplied by occupants.

Food Service

The institute provides a pleasant cafeteria conveniently located near the dormitory complex for the convenience and enjoyment of students, staff and visitors. The preparation of food is under the supervision of qualified dietitians to insure balanced and wholesome meals.

The meal contract for students residing in institute dormitories include twenty-one (21) meals per week. Institute housed students will not be entitled to a refund if they miss meals.



STUDENT DORMITORY



STUDENT CAFETERIA

Student Welfare and Services

The primary goal of Schilling Institute is to prepare its students for rewarding and satisfying careers in their chosen areas of specialization. To attain this goal, the institute not only provides educational opportunities in the classroom and laboratories, but also provides the means whereby students can develop their individual talents and meet their many nonacademic needs.

Health Service

Facilities for emergency first aid and minor medical services are provided on the institute campus. Injuries or illnesses which require the attention of a physician are referred to a Salina medical clinic which has agreed to perform any medical service required by a student at Schilling Institute. The cost of this service, of course, will be assumed by the student.

A special student health and accident program is available to all students enrolling at Schilling. This program is optional but deserves serious consideration from students who are not covered under some form of medical insurance or for those who wish to supplement their existing coverage. Representatives of the insurance agency will be available to explain and enroll students in the program in conjunction with the institute's regular enrollment schedule.

Placement Service

Schilling Institute maintains close contact with numerous industries and business firms who are interested in graduates of Technical Institutes as prospective employees. Students taking advantage of the institute's Placement Center are given the opportunity to discuss their employment goals with representatives of these firms during the final year of their educational programs. These discussions may take place on the campus, or if feasible, the student is provided the opportunity to visit the site of the firm itself in order to obtain a clearer picture of the working conditions and operations of the business establishment.

The Placement Center does not limit its service to graduates of the institute. A complete and current file of part-time job opportunities is maintained for the use of students who are interested in supplementing their income while they are enrolled in their educational program. Whenever possible, part-time employment will be related to the student's chosen curriculum. This will give the student the opportunity to supplement his income as well as permit him to apply some of the knowledge he has gained in regular classroom and laboratory studies.

Recreation and Intramurals

Recognizing the benefits to be derived from activities other than those connected with formal instruction, Schilling Institute has facilities for a well-rounded program of recreation and entertainment for its students.

Students will be urged to form teams for intramural competition in such sports as flag football, basketball, softball, volleyball, tennis, handball, squash, and badminton. In some instances, a small fee may be assessed for participating teams or individuals to defray the cost of trophies and other awards of achievement.

Various social events will be scheduled throughout the year for the social development and enjoyment of students at the institute. In most cases, the planning and organization of social activities will be the responsibility of representatives from the student body.



SCHILLING SWIMMING POOL

Student Activities

A wide range of student activities is provided for the enjoyment and development of the student. These activities are widely diversified and all students, regardless of their personal interests, should find a group or club which will appeal to their special interests.

Students are urged to take an active role in the development of a Student Governing Association. The Governing Association will

participate in the development of basic codes of conduct, dress, disciplinary measures, and other facets of the administrative organization and control of the institute by submitting recommendations for consideration to the Institute Administration.

The student chapter of the American Society of Certified Engineering Technicians (A. S. C. E. T.) was formed February 9, 1967. This is the first student chapter established for student technicians in the United States. Students are encouraged to join A. S. C. E. T. as it will provide an opportunity to become part of what will be their future professional organization.

Counseling

Schilling Institute administrative and faculty personnel are available at all times to counsel students in their educational programs and to help the student who seeks vocational guidance. Students will find that institute personnel are eager to contribute their training and knowledge to aid students in solving their specific problems.

Each student at Schilling Institute will be assigned a faculty advisor and students are urged to take their academic problems and questions to their advisors for counsel and assistance. A student's personal or nonacademic problems may be discussed with personnel of the Dean of Students Office at any time or, in some instances, the student may prefer to discuss these problems with his faculty advisor. In either case, every effort will be made to help students through personal counseling and guidance while they are enrolled in an educational program at Schilling Institute.



ADMINISTRATION BUILDING

General Information and Regulations

The academic year at Schilling Institute is divided into two (2) semesters and a summer session. The student carrying the prescribed credit hour load and making normal progress can graduate, in most technologies, after the completion of four (4) semesters and the intervening summer session. Classes are in session Monday through Friday each week except as noted in the institute calendar. In addition, certain courses may be scheduled on Saturday or during the noon hour. Each day is divided into ten (10) fifty (50) minute periods with a ten (10) minute break between periods.

DAY SCHEDULE

Period 1	8:00 a. m. to 8:50 a. m.
Period 2	9:00 a. m. to 9:50 a. m.
Period 3	10:00 a. m. to 10:50 a. m.
Period 4	11:00 a. m. to 11:50 a. m.

NOON HOUR

Period 5	1:00 p. m. to 1:50 p. m.
Period 6	2:00 p. m. to 2:50 p. m.
Period 7	3:00 p. m. to 3:50 p. m.
Period 8	4:00 p. m. to 4:50 p. m.

EVENING SCHEDULE

Period 9	7:00 p. m. to 7:50 p. m.
Period 10	8:00 p. m. to 8:50 p. m.

Grading System

The institute uses the following grade and grade point system:

A—Superior	4 Points
B—Above Average	3 Points
C—Average	2 Points
D—Below Average	1 Point
F—Failure	None

A grade of "I" (Incomplete) may be given a student who has not completed the work in a course. The student receiving the "I" grade may complete the course by special arrangement with the instructor within certain time limitations. If the student fails to make the necessary arrangements or fails to make up work within the allotted time period, the grade for the course automatically becomes a failure (F).

During the first eight (8) weeks of a regular semester or the first four (4) weeks of a summer session, a student may withdraw from a course without grade penalty. After the start of the ninth (9)

week during the regular semester or the fifth (5) week in the summer session, withdrawal from a course will automatically cause a Failure (F) to be entered on a student's record unless withdrawal from the course is made as an emergency measure.

The grade point average for each student is computed by dividing the total number of grade points earned at Schilling Institute by the total number of semester credit hours in which a grade has been recorded.

Semester Credit Hours

A "Semester Credit Hour" is based on one (1) hour of recitation per week for a semester of seventeen (17) weeks. In general, a recitation course for which three (3) semester hours of credit is earned will meet for one (1) hour three (3) times a week. The time a student must spend outside the classroom in preparation will vary with the student, however, a student should normally allow at least two (2) hours of preparation for each one (1) hour of recitation. Laboratory courses, on the average, require the student to spend three (3) hours in the laboratory for each semester credit hour earned. Generally, a laboratory course will require little outside preparation.

Course Load

Students carrying twelve (12) or more semester credit hours are classified as full-time students. Normal loads for full-time students are considered to be fifteen (15) semester credit hours. Students who desire to register for more than eighteen (18) semester credit hours must obtain the permission of the Director of Academic Affairs in advance of the registration period. Students attending Schilling Institute for the first semester will not be permitted to carry an overload. A student with a relatively poor scholastic record or a student who has part-time employment may find it to his advantage to carry a lighter semester hour load.

President's Honor Roll

The President's Honor Roll includes those students carrying at least fourteen (14) credit hours who make a grade point average of 3.0, with no grade below "C." The Honor Roll is published at the close of each regular semester. A graduating student who has earned a grade point average of 3.0 at Schilling Institute will be granted his Associate Degree "With Honors."

Academic Probation and Dismissal

A student is required to attend classes regularly and earn a minimum grade point average of 1.8 in all degree-credit courses each semester or summer session. Failure to earn the minimum 1.8 grade point average in any semester will result in the student being placed on Academic Probation. A student who is on probation and fails to attain a 1.8 grade point average in all degree-credit courses in the next semester or summer session in which enrolled will be dismissed for academic reasons. A student who earns a grade point average of less than 1.0 in all degree-credit courses in any semester other than his first enrolled semester, will be dismissed for academic reasons. A student on Academic Probation may be dropped from Schilling Institute by the Academic Standards Committee for failure to attend classes regularly or for failure to make satisfactory academic progress. Persons dismissed for academic reasons will not be allowed to enroll again except with special permission of, and under conditions set by, the Academic Standards Committee.

Students enrolled in six or less degree-credit hours will be exempted from the above grade point requirements.

Granting of Degree

All candidates for a degree must be passed upon by the Academic Standards Committee. No person will be admitted to candidacy with an overall grade point average of less than 1.8 in degree-credit courses.

Repetition of Courses

Only courses in which "D" or "F" have been earned may be repeated for the purpose of raising the grade. All grades received in a given course will be shown on the student's record. The grade received the last time the course is taken will be used for the purpose of computing the grade point average.

Waiver of Credit

Any student who is accepted for admission and who has completed courses of college level is required to submit complete transcripts as a part of the Application for Admission. If records indicate an acceptable level of achievement in courses corresponding to those in the Schilling Institute curriculum, waiver of credits may be granted. A student who has acquired extensive knowledge of

a subject through military, industrial or other experience without a college level course, may be given validation credit for corresponding courses in the Institute curriculum. The student may be required to take an examination to determine if he qualifies for advanced credit at Schilling Institute. Limitations of the number of credit hours that can be waived for a given curriculum will be determined by the Credit Review Committee.

Examinations

Final examinations are considered a part of each course and are scheduled during the closing week of each semester and at the end of the summer session. All students are required to take the examinations. Only in emergency cases will a student be allowed to take the final examination at other than the scheduled time.

Class Attendance

Regular and punctual class attendance is important to a high standard of work. The student is expected to recognize the importance of regular class attendance. Each instructor makes his own regulations regarding tardiness and attendance in his classes. It is the responsibility of the student to know, and to comply with, each instructor's regulations. It is also the responsibility of the student to make up the work that was missed due to absence.

Library Services

The Schilling Institute Technical Reference Library is for the convenience of the Institute student body. Reference materials relating to each specific technology are indexed and readily available for use by the student either in the library, or library material can be checked out to use in the student's living quarters. Students may also take advantage of reference materials available through the City of Salina Public Library.

Community Activities

Salina and the surrounding community offers cultural opportunities of a wide variety, including the Community Theater, Civic Music Series, Marymount Concert Series, Municipal Concert Band, Kansas Wesleyan Concert Series, and the Salina Civic Music Association Concert Series. Lindsborg's annual "Messiah" is nationally known.

Salina parks provide wooded and landscaped quiet areas, picnic grounds and recreational facilities so essential to a complete community. Indian Rock Park offers a wide view of Salina from the top of the hill. Two fine 18-hole grass green golf courses, one 9-hole sand green golf course, 5 swimming pools, over 20 baseball fields, 4 football fields, 3 theaters and two drive-in theaters are available.

Spectator sports programs ranging from college level to youngster baseball leagues, including football, basketball, baseball, tennis and track events are available throughout the year.

There are over 60 churches in Salina representing nearly all denominations of the Christian faith. Jewish faiths are also represented.

Conduct

Students entering the Institute are considered to be mature individuals who are responsible for their own behavior. High standards of personal, ethical, and moral conduct are expected of all students, on campus and elsewhere. The capacity for sound planning and a desire to establish good study and work habits are characteristic of a successful student.

Students are expected to use the Institute facilities with consideration, and to conduct themselves with decorum. Students who refuse to conform to accepted standards of conduct will be dismissed from the institute.

Schilling Institute Curricula

Schilling Institute is currently authorized to grant the Associate Degree in the following five (5) technologies:

Aeronautical Technology.

Civil Technology.

Computer Technology.

Electronic Technology.

Mechanical Technology (Detail and Design).

Emphasis is centered upon instruction in the student's chosen area of specialization; however, enrollment in a basic core of general education, mathematics and physical science courses are required of each student attending Schilling Institute.

The detailed curricula outline for each technology and the brief course descriptions presented on the following pages are designed to provide general information on the programs of study offered at Schilling Institute.

Aeronautical Technology

W. E. RAKESTRAW, Head of Department

A career as a technician in the expanding field of Aeronautical Technology offers a challenge to the individual with the necessary educational background. The conquest of space, the military and commercial uses of rockets and guided missiles, the conversion of commercial airlines to the use of jet power plants, and the tremendous growth in all areas of aeronautics offers unlimited career opportunities to qualified individuals who are willing and capable of completing the required program of training.

Modern aircraft represents a variety of technologies which involve the latest developments in heat engines, hydraulics, pneumatics, electronics, electricity, air conditioning, instrumentation, metals design, and processing. The design, development, operation, and maintenance of all types of aircraft require the services of an Aeronautical Technician in one or more of a wide variety of specialized activities. The person trained to carry out a function in aeronautics must have an appreciation of physical principles, be thoroughly familiar with the practical application of the laws of science, and be capable of performing a variety of mechanical operations.

The Aeronautical Technology program at Schilling Institute is designed to develop a fundamental knowledge of air frame and power plant systems, a knowledge of navigation aids, a study of the functions of various communication transceivers, and a study of procedures and regulations pertaining to aircraft flight and maintenance. The student enrolling in this curriculum will be made aware of the responsibilities and exacting standards of technical knowledge and skill that is required in the field of aeronautics. The courses and methods of instruction are designed not only to develop the student in terms of required skills and knowledge but also to develop within the student a sense of pride and responsibility in becoming a part of the aeronautical profession.

Aeronautical technicians will find employment in one of the following fields:

1. Aircraft Manufacture
 - a. Air frame and power plant maintenance and inspector
 - b. Quality control
 - c. Design and Production
 - d. Plant supervision
2. Major Airlines
 - a. Air frame and power plant maintenance inspector
 - b. Plant supervision
 - c. Air frame modification
3. Fixed Base Operations
 - a. Air frame and power plant maintenance and inspector
 - b. Airport management
 - c. General aircraft modification.

FIRST SEMESTER

	<i>Cr. Hrs.</i>
RC 105—Technical Communications I (written communications)	3
SM 101—Technical Mathematics I (College Algebra and Trigonometry) . .	5
AE 101—Aircraft Welding	2
DD 102—Graphical Communications I	3
DD 104—Industrial Safety	1
AE 103—Aircraft Science	3
Total Hours	17

SECOND SEMESTER

	<i>Cr. Hrs.</i>
RC 205—Technical Communications II (Technical Writing)	3
SM 201—Technical Mathematics II (Analytic Geometry and Calculus) . .	4
SM 202—Technical Physics	4
AE 203—Aircraft Electricity and Electronics	3
AE 201—Power Plant Systems	3
Total Hours	17

SUMMER SESSION

	<i>Cr. Hrs.</i>
RC 106—Technical Communications III (Oral Communications)	2
AE 303—Navigation Aids and Communications Systems	3
CL 303—Mechanics I	3
Total Hours	8

THIRD SEMESTER

	<i>Cr. Hrs.</i>
AE 406—Aerodynamic Principles	3
SM 102—Applied Chemistry	3
AE 302—Aircraft Materials	4
AE 301—Aircraft Power Plant Ignition	2
AE 305—Aeronautical Technology Lab.	5
Total Hours	17

FOURTH SEMESTER

	<i>Cr. Hrs.</i>
RC 101—Industrial Economics	3
RC 102—Industrial Relations	3
AE 309—Aeronautical Technology Lab.	5
AE 307—Aircraft Propellers and Control Systems	2
AE 105—Aircraft Standards, Weights and Balance Procedures	2
AE 107—Aircraft Coverings (Fabric and Dope)	2
Total Hours	17

Civil Technology

KURT A. BOOE, Head of Department

The general field of Civil Technology is extremely broad in scope. The field is involved with the construction of highways, railroads, bridges, irrigation and reclamation projects, water power developments, city planning, and other projects ranging from small scale construction jobs to projects involving tremendous capital expenditures. The technician trained in Civil Technology may find himself employed as a surveyor, a laboratory technician, an inspector, a purchasing agent, a cost estimator, a photogrammetrist, a construction foreman, or in one of countless positions related to the entire field of Civil Engineering.

A Civil Technician, although highly specialized, must acquire a considerable store of technical knowledge on a variety of subjects. The Civil Technology program offered by Schilling Institute is designed to provide the student with the ability to apply the knowledge gained.

The program will include the study of construction materials and equipment, surveying principles and application, construction methods common to modern structural design, fabrication, industrial relations and economics.

The field of Civil Technology will offer an increasing number of career opportunities to skilled and trained technicians as the economy of our nation continues to expand. Successful completion of the program in Civil Technology will provide the graduate technician a much greater opportunity to employ his leadership capability as a member of the technological team of our society.

Civil Technician Program is designed to provide the student with a general background in the Consulting, Construction and Highway industries and the ability to apply the knowledge gained.

The general objective of the Civil Technology Program is to prepare the student for work in the area of Contract Construction or in the field of Highway Technology.

The graduate Civil Engineering Technician will find employment in a variety of areas. The following applications are typical:

1. Construction Industry
 - a. Cost estimator
 - b. Project layout technician
 - c. Instrument technician
 - d. Construction supervisor
 - e. Specification writer
2. Consulting Engineering
 - a. Instrument technician
 - b. Cost estimator
 - c. Crew chief (survey party)
 - d. Project supervisor
 - e. Specification writer
3. Highway Design Construction and Maintenance
 - a. Materials inspector and analyst
 - b. Photogrammatist
 - c. Instrument technician
 - d. Cost estimator
 - e. Specifications writer and supervisor.

The Civil Technology Curriculum is offered with two (2) options. The student may elect either option after the completion of two (2) semesters and the summer session. The options offered are designed to prepare the student for employment in either highway or building construction.

FIRST SEMESTER

	<i>Cr. Hrs.</i>
RC 105—Technical Communications I (Written Communications)	3
SM 101—Technical Mathematics I (College Algebra and Trigonometry) . . .	5
SM 102—Applied Chemistry	3
CL 001—Introduction to Technology	1
DD 102—Graphical Communications I	3
DD 104—Industrial Safety	1
Total Hours	16

SECOND SEMESTER

	<i>Cr. Hrs.</i>
RC 205—Technical Communications II (Technical Writing)	3
SM 201—Technical Mathematics II (Analytic Geometry and Calculus) . . .	4
SM 202—Technical Physics I	4
CL 301—Plane Surveying	3
DD 202—Graphical Communications II	3
Total Hours	17

SUMMER SESSION

	<i>Cr. Hrs.</i>
CL 303—Mechanics I	3
SM 205—Technical Physics II	4
Total Hours	7

(HIGHWAY OPTION)

THIRD SEMESTER

	<i>Cr. Hrs.</i>
CL 400—Route Surveying	3
RC 106—Technical Communications III (Oral Communications)	2
CL 402—Soils and Foundations	3
CL 406—Construction Methods and Procedures	3
RC 106—Industrial Relations	3
CP 201—Fortran Programming	3
Total Hours	17

FOURTH SEMESTER

	<i>Cr. Hrs.</i>
CL 401—Structural Materials	4
CL 501—Highway Design and Construction	5
RC 101—Industrial Economics	3
CL 302—Photogrammetry	2
CL 409—Specifications and Office Practices	2
Total Hours	16

(Building option is shown on next page.)

(BUILDING OPTION)

THIRD SEMESTER

	<i>Cr. Hrs.</i>
CL 306—Structural Plans	3
RC 106—Technical Communications III (Oral Communications)	2
CP 201—Fortran Programming	3
CL 402—Soils and Foundations	3
CL 406—Construction Methods and Procedures	3
RC 102—Industrial Relations	3
Total Hours	17

FOURTH SEMESTER

	<i>Cr. Hrs.</i>
CL 401—Structural Materials	4
CL 502—Building Construction	5
CL 403—Reinforced Concrete	2
RC 101—Industrial Economics	3
CL 409—Specifications and Office Practices	2
Total Hours	16

Computer Technology

Paralleling the rapid advances in technology in our society has been the development and recognition of the need for trained personnel to work with computer systems. As private industry, government agencies, and the military expand their use of computers, educational institutions must provide programs designed to meet the demands for specially trained personnel with skills and aptitude for careers in all phases of the computer industry.

The Computer Technology program at Schilling Institute has been developed to provide students with the background necessary to qualify them for entrance into the computer field as programmers and system analysts. As a result, each student graduating in Computer Technology from Schilling Institute will be capable of determining the equipment and procedures required to process a problem with computers and creating the new programs for both scientific and business needs as well as operating the computer itself.

To achieve these objectives, students in Computer Technology receive instructions in three areas:

First: They are given a sound background in mathematics, science and business. This provides them with both the skills of these areas and the vocabulary to communicate with the people who will require their services.

Second: They receive extensive experience in writing programs in a variety of languages and processing these programs.

Third: They study in depth the computer systems and peripheral equipment which are available and the merits and limitations of these various systems.

Employment Opportunities

The graduate Computer Technician will find career opportunities in all fields of science and business. Typical opportunities of employment are:

1. Research Assistant
2. Programmer
3. Systems Analyst
4. Computer System Supervisor.

FIRST SEMESTER

	<i>Cr. Hrs.</i>
RC 105—Technical Communications I (Written Communications)	3
SM 105—Technical Mathematics I (College Algebra and Trigonometry) ..	5
RC 103—Elementary Logic	3
SM 102—Applied Chemistry	3
CP 101—Introduction to Machine Processing	2
Total Hours	16

SECOND SEMESTER

	<i>Cr. Hrs.</i>
SM 205—Technical Mathematics II (Analytic Geometry and Calculus) ..	4
RC 205—Technical Communications II (Technical Writing)	3
SM 202—Technical Physics I	4
ET 202—Basic Electrical Circuits I	3
CP 202—Programming Languages I	3
Total Hours	17

SUMMER SESSION

	<i>Cr. Hrs.</i>
SM 301—Technical Mathematics III (Differential Equations)	2
RC 106—Technical Communications III (Oral Communications)	2
CP 301—History and Theory of Machine Computation	2
CP 302—Programming Languages II	2
Total Hours	8

THIRD SEMESTER

	<i>Cr. Hrs.</i>
RC 101—Industrial Economics	3
CP 401—Numerical Methods	3
CP 402—Programming Languages III	4
CP 404—Programming Projects I	3
CP 406—Analog Computation	3
Total Hours	16

FOURTH SEMESTER

	<i>Cr. Hrs.</i>
RC 102—Industrial Relations	3
CP 501—Topics from Applied Mathematics	3
CP 403—Programming Languages IV	4
CP 405—Programming Projects II	3
CP 502—Computer Systems Seminar	3
Total Hours	16

Electronic Technology

J. P. DOLLAR, Head of Department

Electronics is a rapidly-growing science which offers unlimited opportunities for the individual choosing this field as a career. As technology advances, the uses of electronics are expanding into every major industry and are becoming a common part of the lives of every citizen of our nation. Advances in electronics have resulted in the creation of entirely new industries and have accelerated nearly every segment of our economy.

Electronic applications to the fields of medicine, geology, public safety, aeronautics, law enforcement, missile guidance, etc., have merely scratched the surface of the ultimate potential of the use of electronics in these and other fields. Because of its many facets, the field of electronics needs technicians to perform a variety of jobs.

The Electronic Technician will find career opportunities in a variety of fields of engineering and science.

Typical opportunities of employment are:

1. Computer system technicians
2. Missile electronics technicians
3. Communications technician (LASER and MASER application and development)
4. Research assistant

FIRST SEMESTER

	<i>Cr. Hrs.</i>
RC 105—Technical Communications I (Written Communications)	3
SM 101—Technical Mathematics I (College Algebra and Trigonometry) . .	5
SM 102—Applied Chemistry	3
ET 101—Electronics Lab. Equipment and Procedures	2
ET 001—Introduction to Technology	1
Total Hours	14

SECOND SEMESTER

	<i>Cr. Hrs.</i>
RC 205—Technical Communications II (Technical Writing)	3
SM 201—Technical Mathematics II (Analytic Geometry and Calculus) . .	4
DD 102—Graphical Communications I	3
SM 202—Technical Physics I	4
ET 202—Basic Electrical Circuits I	3
Total Hours	17

SUMMER SESSION

	<i>Cr. Hrs.</i>
RC 106—Technical Communications III (Oral Communications)	2
SM 301—Technical Mathematics III (Differential Equations)	2
ET 301—Basic Electrical Circuits II	4
Total Hours	8

THIRD SEMESTER

	<i>Cr. Hrs.</i>
ET 401—Applied Electronics I	5
DD 101—Contracts and Specifications	2
ET 402—Dynamic Measurements	4
RC 102—Industrial Relations	3
ET 302—Introduction to Electromagnetic Waves	2
Total Hours	16

FOURTH SEMESTER

	<i>Cr. Hrs.</i>
ET 501—Applied Electronics II	5
ET 503—Solid State Applications	3
ET 502—Micro-Wave Transmissions	3
RC 101—Industrial Economics	3
Elective (Technology related)	3
Total Hours	17

Mechanical Technology

(Detail and Design Technology)

D. L. BUCHWALD, Head of Department

Mechanical Technology in a broad sense is the creation and utilization of mechanical power, and as such enters into every business, industrial, and community activity. This field embraces the design, manufacture, and production of mechanical products and the tools, machines, and processes by which they are made; as well as sales and maintenance of such products, tools and machines.

The Mechanical Technology curriculum is organized to provide thorough technical training, including a background of mathematics and science.

While the graduate may start in one of a variety of positions, career opportunities are to be found in such occupational areas as:

1. Machine and Tool Designer
2. Special Project Designer and Detailer
3. Production Supervisor
4. Sales Technician
5. Service Technician
6. Engineer's Assistant
7. Production Planner
8. Application Technician
9. Research Technician
10. Development and Production Technician
11. Technical Illustrator
12. Technical Writer

FIRST SEMESTER

	<i>Cr. Hrs.</i>
RC 105—Technical Communications I (Written Communications)	3
SM 101—Technical Mathematics I (College Algebra and Trigonometry) . .	5
SM 102—Applied Chemistry	3
DD-102—Graphical Communications I	3
DD 001—Introduction to Technology	1
DD 103—Welding	1
DD 104—Industrial Safety	1
Total Hours	17

SECOND SEMESTER

	<i>Cr. Hrs.</i>
RC 205—Technical Communications II (Technical Writing)	3
SM 201—Technical Mathematics II (Analytic Geometry and Calculus) . . .	4
DD 203—Fabrication Methods	2
DD 202—Graphical Communications II	3
SM 202—Technical Physics I	4
Total Hours	16

SUMMER SESSION

	<i>Cr. Hrs.</i>
RC 106—Technical Communications III (Oral Communications)	2
SM 301—Technical Mathematics III (Differential Equations)	2
SM 205—Technical Physics II	4
	8
Total Hours	8

THIRD SEMESTER

	<i>Cr. Hrs.</i>
CL 303—Mechanics I	3
DD 406—Applied Fluid Mechanics	2
DD 307—Applied Energy Conversion	3
DD 304—Application of Physical Materials	3
DD 101—Contracts and Specifications	2
RC 101—Industrial Economics	3
DD 302—Graphical Communications III	2
	18
Total Hours	18

FOURTH SEMESTER

	<i>Cr. Hrs.</i>
CL 401—Mechanics II	3
TD 407—Environmental Systems Analysis	2
DD 408—Applied Kinematics and Kinetics	2
TD 507—Vibrating Systems	2
DD 403—Technical Plans	2
RC 102—Industrial Relations	3
TD 508—Electro. Mech. Power Transmissions	2
	16
Total Hours	16

'Space'

(Science program available for common entrance.) Students who have majored in vocational arts, music, business or other non-technical subjects in high school may enter in SPACE for up to one year to provide for a more technical background for competitive entry into the technology major. Although SPACE is designed to provide for more uniform entrance capability into the technology majors, it may be useful to the student in other ways. Students at Schilling Institute may use SPACE for any of the following reasons:

1. To explore the various technologies before choosing a major.
2. To obtain an introduction to the field of technology.
3. To determine early in the academic career if the field of technology is the field of major interest.
4. To fulfill all entrance requirements of the technology major.
5. To provide an orderly review of technical topics that have been studied at some earlier date.
6. To evaluate the adaptability of "military service courses" or "industrial short courses" to the technology program.

There is no prerequisite for any SPACE course except that a person be eligible to enroll as a student at Schilling Institute. The student does not need to select a major while enrolled in SPACE, however, a student may not enroll in SPACE for more than two semesters.

SPACE courses will not normally be offered each semester, however, any course in SPACE will be taught upon sufficient demand and will be taken for non-degree college credit. The following courses constitute SPACE:

SP-001. Mathematics. 5 (non-degree) credit hours of recitation. A course required of all entering students whose record does not indicate a minimum of three credits in high-school algebra, geometry and trigonometry, or whose performance in advanced mathematics classes is unsatisfactory.

SP-002. Physical Science. 3 hours recitation plus 1 hour lab. This course is designed for those students having no background in Physics or Chemistry. Emphasis is placed on physical fundamentals without specific emphasis for application.

SP-003. Slide Rule. 1 hour recitation. This course includes basic elements of logarithms, use of scientific notation and theory and practice in the use of the slide rule.

SP-010. Perceptual Development. 2 hours recitation plus 1 hour lab. This course is included to improve the reading rate and the comprehensive level of the student. "Speed Reading" is supplemented by a testing program to aid the student in developing his reading comprehension level concurrently with an increase in reading rate.

SP-015. Writing Analysis. 3 hour recitation. This course is designed to give the student an insight into the field of technical writing. A strong review of mechanics and composition is included with emphasis placed on organization and practice.

SP-020. Professional Exploration. 1 hour lab. This course is available to provide a study of the world of work of the technician. The student enrolled in this course will be given the opportunity to visit industrial plants, evaluate actual job practices of technicians, study the nature and trend of each technical department at the Institute and study the professional role of the technician in society.

SP-030. Fundamentals of Drafting. 2 hours of lab. This course includes: use of instruments, lettering practice, problems of orthographic projection and point location in SPACE. Time will be devoted to practice in sketching and three dimensional drawing to include some use of perspective.

Description of Courses

General Technology

J. E. TULLIS, Head of Department

SM-101. Technical Mathematics I (College Algebra and Trigonometry). Five credit hours of recitation. The fundamentals of algebra and trigonometry as taught at the college level are modified to emphasize application and de-emphasize theoretical development. This course is specifically designed for technology students.

SM-201. Technical Mathematics II (Analytic Geometry and Calculus). Four credit hours of recitation—(prerequisite SM-101). A study of functions and their properties including two and three dimensional functions. Definition and applications will include the following: Series, limits, and differential, and the derivative, the definite and indefinite integral, and the processes of applying the various concepts to technical problems. This course is specifically designed for technology students.

SM-301. Technical Mathematics III (Differential Equations). Two credit hours of recitation—(prerequisite SM-201). A review of some of the more common differential equations found in technical problems. Solution and application of the linear homogeneous differential equation is emphasized. This course is specifically designed for technology students.

SM-102. Applied Chemistry. Three credit hours of recitation. A study of the arrangement of matter, the atomic structure, the periodic table and the energy balances relating the inter-action of elements. Some physical chemistry concepts are included, an example being ionic effect in corrosion of materials.

SM-202. Technical Physics I. Three credit hours of recitation and one credit hour of laboratory—(prerequisite SM-201 or concurrent). A quantitative investigation into the fundamentals of mechanics, heat and sound. The class work and the supporting laboratory are specifically designed to provide the student with an understanding of and a proficiency in measurement and calculation with these principles as they are applied to the solution of technical problems.

SM-205. Technical Physics II. Three credit hours of recitation and one credit hour of laboratory—(prerequisite SM-201 or concurrent). A quantitative investigation into the fundamentals of electricity, light and atomic physics. The class work and the supporting laboratory are specifically designed to provide the student with an understanding of, and a proficiency in measurement and calculation with these principles as they are applied to the solution of technical problems.

RC-101. Industrial Economics. Three credit hours of recitation. A review of economic trends, depreciation factors, labor costs, operational costs, depreciation vs. maintenance, optimization analysis, estimating, financing, economic trends and other factors of vital need to technical operations.

RC-102. Industrial Relations. Three credit hours of recitation. Analysis of the relationship of technical growth and industrial development to the action and coordination of various organizations including professional societies, technical societies, industrial organizations, fraternal and social societies, cooperatives, labor relations groups and political orders. The cooperation and lack of cooperation of such activities and the national trends in technical and industrial relations is the basis of study most vital to the technician.

RC-103. Elementary Logic. Three credit hours of recitation. A study of the scientific laws of deduction and related analysis of philosophical reasoning. The basic rules of reason are explored as fundamental concept and are then applied to mathematical proofs and computer language programs.

RC-105. Technical Communications I (Written communications). Three credit hours of recitation. A review of the mechanics of technical writing. A study of types of technical writing, documents, reports, forms and other instruments of communication pertinent to the occupation of the technician. Use of the word, sentence and paragraph with emphasis on technical format. Vocabulary building as necessary and other related topics will be included.

RC-107. Seminar. One hour recitation credit. A series of courses broadly covering history, literature, philosophy, and social sciences as they relate to technology or the technician. Various offered by the senior faculty of the Institute, on a variety of subjects, each seminar is specifically designed to emphasize the scope and nature of advanced study carried on in that particular field and, thereby help the technician locate himself in learning and in the world.

RC-106. Technical Communications III (Oral communications). Two credit hours of recitation. A review of oral forms of communicating. Presenting technical papers, giving oral instruction, oral reports and related topics necessary to develop proficiency in the oral presentation of technical material.

RC-205. Technical Communications II (Technical writing). Two credit hours of recitation and one credit hour of laboratory—(prerequisite RC-105). An extension of RC-105 to include advanced study of methods of collection, organization and identification of data, selection of vital data to include in technical reports and the exercise of preparing clear, concise reports.

CL-001. Introduction to Technology. One credit hour of laboratory. Seminars, field trips and library assignments designed to project the student into the world of the technician and to give the student first hand knowledge of the current need for technicians in industry.

Aeronautical Technology

W. E. RAKESTRAW, Head of Department

AE-101. Aircraft Welding Laboratory. One credit hour of laboratory and one credit hour of recitation. Theory and skill in aircraft welding processes. Exercises in both electrical and gas welding processes as applied to ferrous and non-ferrous materials. Inert gas, atomic hydrogen, and resistance welding processes are to be studied.

AE-103. Aircraft Science. Two credit hours of laboratory and one credit hour of recitation. A survey of aircraft nomenclature, theory of flight, aerodynamic considerations of rigging and assembly, inspection, and adjustment of flight control systems.

AE-105. Aircraft Standards, Weight and Balance Procedures. One credit hour of recitation and one credit hour of laboratory. A survey of the organization of the Federal Aviation Agency and the Civil Aeronautics Board. Emphasis will be placed on the regulations, standards and specifications of each of these organizations. A detailed study of weight and balance procedures will be conducted in the classroom and in the laboratory.

AE-107. Aircraft Coverings (Fabric and Dope). One credit hour of recitation and one credit hour of laboratory. A course designed to acquaint the student with the various fabric coverings used on today's aircraft and the methods used in application of finishes to aircraft surfaces.

AE-201. Power Plant Systems. Two credit hours of recitation and one credit hour of laboratory—(prerequisite SM-101). A study of internal combustion engines of the type used in small and intermediate class aircraft. Includes studies of the principles of operation of radial, inline, and opposed reciprocating engines as well as a study of gas turbine engines.

AE-301. Aircraft Power Plant Ignition Systems. One credit hour of recitation and one credit hour of laboratory—(prerequisite AE-203). A study of battery, high and low tension ignition systems for today's aircraft. Emphasis will be placed on trouble shooting, repair and timing of aircraft ignition systems.

AE-302. Aircraft Materials. Two credit hours of recitation and two credit hours of laboratory—(prerequisites: SM-102, AE-103). A study of materials commonly used in aircraft including woods, metals and alloys with details of the properties of each. Recitation and laboratory skills in woodwork and sheet metal working are stressed.

AE-303. Navigation Aids and Communications System. One credit hour of recitation and two credit hours of laboratory—(prerequisite: ET-203). A survey study of the aids to navigation and communications used in light and intermediate class aircraft. Field service and trouble shooting of the various types of equipment will be stressed.

AE-203. Aircraft Electricity and Electronics. Two credit hours of recitation and one credit hour of laboratory—(prerequisite or concurrent—SM-101, SM-201, AE-103). A study of electrical flow and circuit types with emphasis placed on aircraft starting, generating, and regulating systems. A detailed study of alternating and direct current measurement parameters, coupled with a study of basic electronics, is also included.

***AE-305. Aeronautical Technology Laboratory.** Five credit hours of laboratory—(prerequisites: AE-101, AE-201, AE-301, AE-302). Laboratory classes designed to acquaint the future mechanic with work routine, aircraft systems, and inspection methods.

***AE-309. Aeronautical Technology Laboratory.** Five credit hours of laboratory—(prerequisites: AE-101, AE-201, AE-301, AE-302). Laboratory classes designed to acquaint the future mechanic with work routine, power plant systems and inspection methods.

AE-406. Aerodynamic Principles. Two credit hours of recitation and one credit hour of laboratory—(prerequisites: CL-303, AE-302). Recitation forces on surfaces of a given geometry moving in a fluid medium. Consideration is given to classical mechanical reactions, thermodynamic effects, and the variability of forces by changing the attitude of these control surfaces.

AE-307. Aircraft Propellers and Control Systems. Two credit hours of laboratory. A study of the use, maintenance, and inspection of propellers and their related control systems.

Civil Technology

K. A. BOOE, Head of Department

CL-301. Plane Surveying. One credit hour of recitation and two credit hours of laboratory—(prerequisites: SM-101 and DD-102). This course in plane surveying contains theory and practice in methods currently used to obtain land survey information. A working knowledge of a variety of surveying instruments will be developed, stressing accuracy and sources of error.

CL-302. Photogrammetry Methods. One credit hour of recitation and two credit hours of laboratory—(prerequisites: CL-301). Elementary introduction to the principles, equipment techniques, and applications of photogrammetry as used in topographic mapping and in highway design and construction.

CL-303. Mechanics I. Three credit hours of recitation—(prerequisites: SM-201 and SM-103). This course introduces the basic concepts of mechanics, placing emphasis on the action of force systems on rigid bodies and the response of those bodies to the applied forces.

CL-306. Structural Plans. One credit hour of recitation and two credit hours of laboratory—(prerequisites: CL-303 and DD-302). This course is designed to provide the student with training and experience in drafting-room procedures and practice.

CL-400. Route Surveying. One credit hour of recitation and two credit hours of laboratory—(prerequisites: CL-301). This course in highway route design is concerned with the effects of traffic and vehicular characteristics on road design, length of highway, curvature and elevation of roadbeds as they affect costs and location, geometric design, field and office practice in route, curve layout and earth work computations.

CL-401. Structural Materials. Three credit hours of recitation and one credit hour of laboratory—(prerequisites: CL-303). Recitation and laboratory exercises in the study of the application of various types of structural materials including wood, concrete, steel and nonferrous alloys. Internal stresses and deflections of basic load carrying members will be studied.

CL-402. Soils and Foundations. Two credit hours of recitation and one credit hour of laboratory—(prerequisites: SM-102 and CL-301). This course covers the criteria used in the selection, design, and construction of the elements of a structure that transfers its total load to the underlying formation. Physical characteristics of compacted and uncompacted soils, soil bearing qualities for foundation, insight into the design for footings, walls, piers and columns and pilings used for foundation structures.

CL-403. Reinforced Concrete Construction. Two credit hours of recitation—(CL-401 or concurrent). This course includes study of properties of concrete, elementary stress calculations, and the specifications for columns, beams and slabs. Construction considerations including forming, shoring, reinforcing and relationship between construction costs and design.

CL-406. Construction Methods and Procedures. Three credit hours of recitation—(prerequisites: CL-301). An introductory study of methods to determine quantities of materials, equipment, labor required for construction projects. It includes characteristics and capabilities of work equipment; methods of obtaining unit costs of in-place construction and field reporting practices and responsibilities of field inspection.

CL-409. Specifications and Office Practices. Two credit hours of recitation—(prerequisites: CL-306). A course of specifications, contracts, estimating and office practices pertinent to the field of the technician. The need for and meaning of specifications and technical writing will be emphasized. General office practices and estimate preparation will be studied to familiarize the student with the construction process as a whole.

CL-501. Highway Design and Construction. Three credit hours of recitation and two credit hours of laboratory—(prerequisites: CL-400, CL-406). This course is concerned with the elements of a transportation roadway and their functions: Roadway foundations, pavement types and structural design and construction procedures.

CL-502. Building Construction. Three credit hours of recitation and two credit hours of laboratory—(prerequisites: CL-306, CL-406). This course is designed to acquaint the student with the terminology and materials used in building construction, types of construction used for the various parts of buildings, and items to be considered in planning a building.

CL-001. Introduction to Technology. One credit hour of laboratory. Seminars, field trips, and library assignments designed to project the student into the world of the technician and to give the student first hand knowledge of the current need for technicians in industry.

Computer Technology

CP-101. Introduction to Machine Processing. One credit hour of recitation and one credit hour of laboratory. An introduction to data processing equipment including the use of the key punch, the sorter, wiring control panels for the reproducer, collator, and accounting machine. Hands-on experience with the above machines as well as some contact with the laboratory's computer system.

CP-201. FORTRAN Programming. Two credit hours recitation and one credit hour laboratory—(prerequisite: SM-101, Offered to non-Computer Technology majors). A study of the scientifically oriented language, FORTRAN. Use of the key punch to prepare programs for the computer. Writing and processing of a variety of problems. Study of the recognition of problems which are suitable for computerized solutions.

CP-202. Programming Languages I. Two credit hours recitation and one credit hour laboratory—(prerequisite: SM-101). Study and extensive use of the programming language, FORTRAN. Flow diagramming. Emphasis of the variations of FORTRAN for different computer systems. Use of Disk Utility Program.

CP-301. History and Theory of Machine Computation. Two credit hours of recitation—(prerequisite: ET-202). The development of machine computation from its early stages to the present. The electrical and logic circuits of computers. Boolean Algebra.

CP-302. Programming Languages II. One credit hour recitation and one credit hour laboratory—(prerequisites: CP-202). Business oriented language for the computer system available in the laboratory. (Presently and IBM 1130 System.)

CP-401. Numerical Methods. Three credit hours recitation—(prerequisites: SM-301, CP-201). Numerical solution of algebraic equations, numerical integration techniques, numerical solutions of partial differential equations, finite differences.

CP-402. Programming Languages III. Two credit hours recitation and two credit hours laboratory—(prerequisites: SM-301, CP-202). Study of frequently used scientifically oriented programming languages other than FORTRAN. Writing and processing programs in these languages.

CP-403. Programming Languages IV. Two credit hours recitation and two credit hours laboratory—(prerequisites: RC-101, CP-302). Study of frequently used business oriented programming languages other than that encountered in CP-302. Writing and processing programs in these languages.

CP-404. Programming Projects I. One credit hour recitation and two credit hours laboratory—(prerequisite or concurrent: CP-401 and CP-402). General discussion of system analysis in scientific situations. Independent study and programming individually assigned scientifically oriented problems, followed by presentation of seminars on solutions to the class.

CP-405. Programming Projects II. One credit hour recitation and two credit hours laboratory—(prerequisite or concurrent: CP-403). General discussion of system analysis in business situations. Independent study and programming of individually assigned business oriented problems, followed by presentation of seminars on solutions to the class.

CP-406. Analog Computation. Two credit hours recitation and one credit hour laboratory—(prerequisite: SM-301, ET-202). The analog computing concept and operating procedures. Analog computer solution of differential equations and physical systems.

CP-501. Topics from Applied Mathematics. Three credit hours recitation—(prerequisites: CP-401). Study of selected topics from applied mathematics, including statistics, Fourier series, Bessel functions, elliptical integrals and others.

CP-502. Computer Systems Seminar. Three credit hours recitation—(prerequisites: CP-404). Detailed study of computer systems currently on the market and their individual merits and drawbacks. Discussion of advanced computer-use techniques: time-sharing systems, digital analog hybrids, simulation, linear programming, CMP, and PERT.

Electronic Technology

J. P. DOLLAR, Head of Department

ET-101. Lab Equipment and Procedures. Two credit hours of laboratory. The use of basic laboratory tools and equipment, proper procedures for making simple repairs on electronic equipment, and a study of safe practices for making electrical measurements.

ET-202. Basic Electrical Circuits I. Two credit hours of recitation and one credit hour of laboratory—(prerequisites: SM-101, SM-202, or concurrent). A concept of electrical flow and types of circuits. A detailed study of direct and alternating current circuits.

ET-301. Basic Electrical Circuits II. (Prerequisite ET-202, prerequisite or concurrent SM-301). Two credit hours of recitation and two credit hours of laboratory. A study of simple electrical and electronic circuit and exercises in tracing circuit components to determine their function in the complex of the total system.

ET-401. Applied Electronics I. Three credit hours of recitation and two credit hours of laboratory—(prerequisite ET-301). The fundamental study of, and laboratory exercises in electronic circuits found in source equipment, gain equipment, display and record equipment, and a variety of transducers. Simple, functional circuits are studied extensively in this course.

ET-402. Dynamic Measurements. Two credit hours of recitation and two credit hours of laboratory—(prerequisite ET-401 or concurrent). Study and exercises in selecting proper equipment and making scientific measurements in electrical and electronic system, as well as acoustical systems. Linear and logarithmic systems are used. A detailed study of error analysis is included. Analogies of systems is explored as a basis of electronic measurements.

ET-501. Applied Electronics II. Three credit hours of recitation and two credit hours of laboratory—(prerequisite ET-401). An extension of ET-401 to include knowledge and experience of complex circuits consisting of multiple function component systems. The concept of multiple degrees of freedom is developed.

ET-302. Introduction to Electromagnetic Waves. Two credit hours of recitation—(prerequisite ET-301). Fundamental concepts in the area of the short wave length, the significance of carrier frequencies, modulation and other phenomena.

ET-502. Microwave Transmission. Two credit hours of recitation and one credit hour of laboratory—(prerequisite ET-401). A review of difficulties and applications of the short electromagnetic wave used for carrier frequencies. A study of the equipment necessary for the generation, transmission and reception of the short electromagnetic wave.

ET-503. Solid State Applications. Two credit hours of recitation and one credit hour of laboratory—(prerequisite ET-501 or concurrent). The behavior of semiconductors specifically the transistor, the diode, and the piezoelectric crystals. The application of the solid state components and their behavior under certain environmental conditions will be studied extensively.

ET-001. Introduction to Technology. One credit hour of laboratory. Seminars, field trips, and library assignments designed to project the student into the world of the technician and to give the student first hand knowledge of the current need for technicians in industry.

Mechanical Technology (Detail & Design)

D. L. BUCHWALD, Head of Department

DD-101. Contracts and Specifications. Three hours recitation. A survey course of specifications pertinent to the field of the technician. The need for and meaning of specifications and technical writing and the legal significance of such. The association between specifications and contracts.

DD-102. Graphical Communications I. One hour recitation and two hours laboratory. An introductory course in drafting, use of equipment, drawing techniques, discipline in orthographic perception, as well as a strong section on descriptive geometry applied on practical situations.

DD-103. Welding. One hour laboratory. Studies and exercises in welding techniques with emphasis on ferrous material. Both electric and gas welding principles are to be employed. A study of inspection procedures includes knowledge of A. W. S. Codes.

DD-104. Industrial Safety. One hour laboratory. A survey of safety rules and practices, equipment used to insure the safety of workmen and a review of inspection procedures for determining hazardous conditions.

DD-202. Graphical Communications II. One hour recitation and three hours laboratory—(prerequisite DD-102). This second phase will deal with special drafting details as they apply to specific types of drafting problems to include topics as production operations, problems of assembly and disassembly of manufactured components. In addition, job responsibilities and drafting department procedures are studied.

DD-203. Fabrication Methods. Two hours recitation and one hour laboratory—(prerequisite DD-103). A study of machine shop operations and set-ups, which includes quality control and measuring techniques.

DD-302. Basic Tool Design. One credit hour recitation and two credit hours laboratory. Basic principles applied in the manufacture of jigs, fixtures and dies.

DD-304. Application of Physical Materials. ² One credit hour recitation and ~~two~~ credit hours laboratory—(prerequisites SM-101, SM-202). A survey of many physical materials and their properties, the adaptability of these materials to certain job applications, and methods of analyzing the economy of materials application.

DD-307. Applied Energy Conversion. Four credit hours recitation—(prerequisites SM-202, SM-201). A study of work and energy and their inter-relationship, energy sources and sinks, and a study of processes for storing or converting energy.

DD-402. Machine Design. One credit hour recitation and two credit hours laboratory. A course in the design principles of machine elements such as beams, bearings, clutches, brakes, shafts, bushings, screws, rivets, gears, belts and flywheels. Attention is given to various types of loading conditions, stresses, deformations, fits and finishes.

DD-403. Technical Plans. Three credit hours of laboratory—(prerequisite DD-302, terminal semester only). A design course employing the imagination of the student coupled with the technical background courses to provide a workable set of plans for a useful device to satisfy the requirements of an assigned objective. A variety of exercises to fulfill specific objectives.

DD-406. Applied Fluid Mechanics. Two credit hours of recitation—(prerequisite SM-301). Definitions of motion, rates of changes of motion of a particle, relative motion concepts using both fixed and variable frames of reference, and a classical mechanic's concept of force motion relationship of a particle in space. A study of Newton's law of motion.

DD-407. Environmental System Analysis. Three credit hours recitation—(prerequisite DD-307). A study of environmental factors to include temperature, humidity, lighting and acoustics, and other related factors. Temperature zones, and transferability are topics of primary interest in this course.

DD-502. Design Problems. Three credit hours recitation. Opportunities in advanced drafting room practices are offered in this course. The student analyzes the problem, gathers data, sketches ideas on paper, does all necessary mathematical calculations, makes working drawings, and finally checks his work.

DD-408. Applied Kinematics and Kinetics. Two hours recitation—(prerequisite, SM-301). An advanced study of motion and relative motion as applied to linkages, geartrains, belt and pulley systems, and other dynamic systems.

TD-507. Vibrating Systems. Three credit hours recitation—(prerequisite DD-406). A study of the principles of vibrating systems, including an analysis of the simple harmonic system and the vibrating beam. The forced damped system analysis is a major objective of the course.

TD-508. Electro-Mechanical Power Transmission. Three credit hours recitation. Course offers information for mechanical engineering technicians who find themselves having to know about such components as electromagnets, solenoids and relays, special purpose electric motors, synchros, various types of switches and timers, electromechanical clutches, brakes and speed reducers, timing devices, and mechanical applications of photo and load cells.

DD-001. Introduction to Technology. One credit hour of laboratory. Seminars, field trips, and library assignments designed to project the student into the world of the technician and to give the student first hand knowledge of the current need for technicians in industry.

PRINTED BY
ROBERT R. (BOB) SANDERS, STATE PRINTER
TOPEKA, KANSAS



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[Faint, illegible text covering the majority of the page, likely bleed-through from the reverse side.]

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