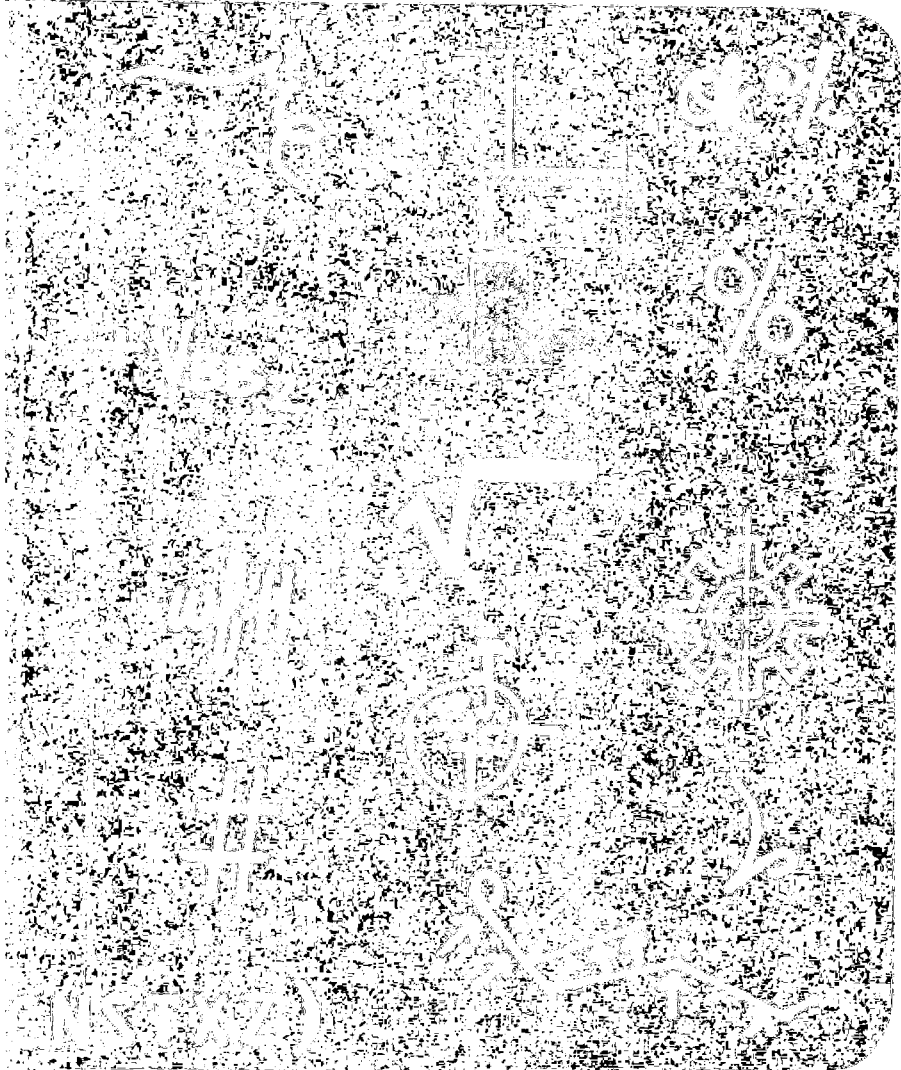


Albuquerque Technical- Vocational Institute



Bulletin, 1971-72

Bulletin 1971 - 72

ALBUQUERQUE TECHNICAL-VOCATIONAL INSTITUTE

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Attendance	842-3791
Employer Relations	842-3712
Testing	842-3780
Evening Division	842-3746

T-VI BULLETIN Volume VII

July, 1971

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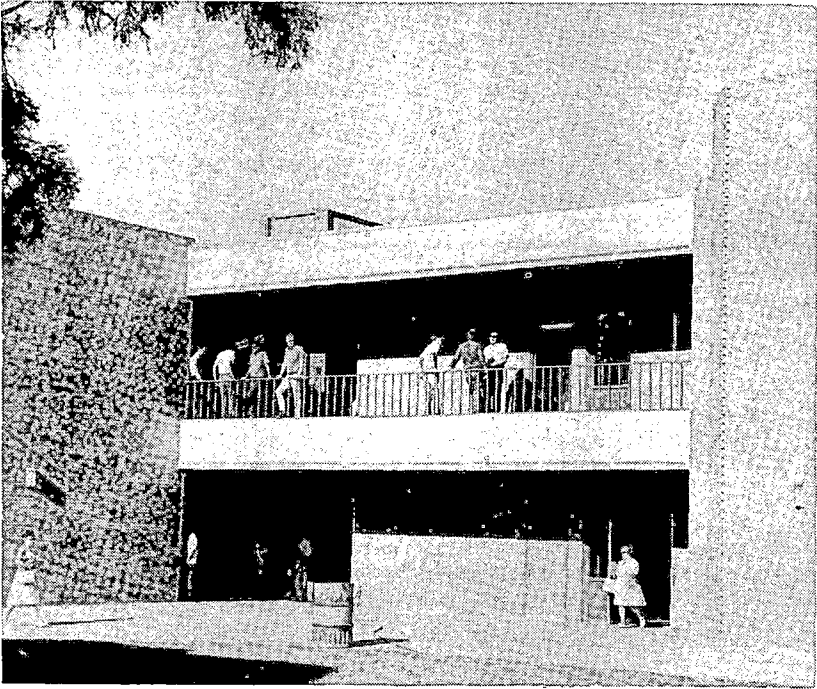
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GENERAL INFORMATION

The Albuquerque Technical-Vocational Institute is a public school which has provided technical and vocational education for adults since 1965. Instruction is offered in appropriate areas of the humanities as well as in technical and vocational skills.

The Institute district was created by a vote of the people in 1964 under enabling legislation approved by the New Mexico Legislature in 1963, and the district includes Bernalillo County plus the Corrales community of Sandoval County.

Its major source of both operational and construction funds is a 3-mill property tax. However, in recognition of the fact that many New Mexico residents from outside of the Institute district attend T-VI, the State Legislature has also appropriated funds for its operation since 1968.

Because the Institute is a public school supported by both local and state tax resources, tuition is waived on request for legal residents of New Mexico. Tuition for out-of-state students, and for any student whose education is fully underwritten by federal training funds, is \$300 per trimester.

SCHOOL YEAR

T-VI operates year-around on a trimester plan, with each of the three trimesters providing 15 weeks (75 days) of classes: During 1971-72, the Fall Trimester will begin on Sept. 20, the Spring Trimester on Jan. 24, and the Summer Trimester on May 15.

Applicants wanting to enter a full-time Day Division Program *must make application at least 30 days before the start of the trimester* they want to enter.

There is no advance registration for Evening Division programs (see *Evening Division Bulletin* for complete information).

FALL TRIMESTER, 1971

August 20	Day Division Application Deadline
September 2-3	Day Division Registration
September 13-14 (9 a.m.-9 p.m.)	Evening Division Registration
September 20	First Day of Classes
October 21-22	No Classes, Staff Development Days
November 25-26	Thanksgiving Vacation
December 23	Withdrawal Deadline
December 24-January 2	Christmas Vacation
January 7	Evening Division Classes End
January 14	Last Day of Classes; Commencement

SPRING TRIMESTER, 1972

December 23	Day Division Application Deadline
January 6-7	Day Division Registration
January 17-18 (9 a.m.-9 p.m.)	Evening Division Registration
January 24	First Day of Classes
April 21	Withdrawal Deadline
May 5	Last Day of Classes; Commencement

SUMMER TRIMESTER, 1972

April 13	Day Division Application Deadline
April 22-23	Day Division Registration
May 8 (9 a.m.-9 p.m.)	Evening Division Registration
May 15	First Day of Classes
July 1-9	Summer Vacation
August 18	Withdrawal Deadline
August 18	Evening Division Classes End
September 1	Last Day of Classes; Commencement

TRIMESTER SCHEDULE

SEPTEMBER, 1971

M	T	W	T	F
20	21	22	23	24
27	28	29	30	

OCTOBER, 1971

M	T	W	T	F
				1
4	5	6	7	8
11	12	13	14	15
18	19	20	(21 22)	
25	26	27	28	29
Staff Development— Oct. 21-22				

NOVEMBER, 1971

M	T	W	T	F
1	2	3	4	5
8	9	10	11	12
15	16	17	18	19
22	23	24	(25 26)	
29	30			
Thanksgiving— Nov. 25-26				

DECEMBER, 1971

M	T	W	T	F
		1	2	3
6	7	8	9	10
13	14	15	16	17
20	21	22	23	(24
27	28	29	30	31)
Christmas Vacation— Dec. 24-31				

JANUARY, 1972

M	T	W	T	F
3	4	5	6	7
10	11	12	13	14
(17 18 19 20 21)				
24	25	26	27	28
31				
Trimester Break— Jan. 17-21				

FEBRUARY, 1972

M	T	W	T	F
	1	2	3	4
7	8	9	10	11
14	15	16	17	18
21	22	23	24	25
28	29			

MARCH, 1972

M	T	W	T	F
		1	2	3
6	7	8	9	10
13	14	15	16	17
20	21	22	23	24
27	28	29	30	31

APRIL, 1972

M	T	W	T	F
3	4	5	6	7
10	11	12	13	14
17	18	19	20	21
24	25	26	27	28

MAY, 1972

M	T	W	T	F
1	2	3	4	5
(8 9 10 11 12)				
15	16	17	18	19
22	23	24	25	26
29	30	31		
Trimester Break— May 8-12				

JUNE, 1972

M	T	W	T	F
			1	2
5	6	7	8	9
12	13	14	15	16
19	20	21	22	23
26	27	28	29	30

JULY, 1972

M	T	W	T	F
(3 4 5 6 7)				
10	11	12	13	14
17	18	19	20	21
24	25	26	27	28
31				
Summer Vacation— July 3-7				

AUGUST, 1972

M	T	W	T	F
	1	2	3	4
7	8	9	10	11
14	15	16	17	18
21	22	23	24	25
28	29	30	31	

SEPTEMBER, 1972

M	T	W	T	F
				1

INSTRUCTIONAL PROGRAMS

THE DAY DIVISION program at the Institute provides full-time instruction leading to diplomas and certificates in 20 major areas. They are listed in the table of contents on Page 2.

Preparatory programs are offered for persons whose previous education does not qualify them for immediate acceptance into one of the major vocational and technical areas, or to provide refresher work for those who have not been in school for some time.

Students in the Day Division attend classes five or six hours a day. However, people not wishing to pursue a diploma may enroll as special students in specific classes as space is available.

Day Division classes meet between 7:20 a.m. and 6:15 p.m., with most classes one hour in length. Major laboratories are either two-hour or three-hour time blocks.

THE EVENING DIVISION offers more than 80 Skill Improvement Courses to part-time students in the general areas of Office Education, Trade and Industrial, Health Occupations, Distributive Education, and Technical Education. The Adult Basic Education section offers a variety of courses designed to prepare people to take the General Educational Development (GED) exams, as well as for general improvement in written and spoken communication skills, math, and citizenship for aliens. In addition to the T-VI campus, the Evening Division programs use facilities at several of the city's public high schools.

Most of the Evening Division courses meet two nights a week in two or three hour sessions. Complete information about the evening program, which is also tuition free to New Mexico residents, is available in the *Evening Division Bulletin*.

THE APPRENTICESHIP PROGRAM includes classes in many of the construction trades, electronics, and machine tool; and operates in cooperation with various labor-management Joint Apprenticeship Committees. Information about the apprenticeship programs is available by contacting the office of the Evening Division Director (842-3746).

TESTING SERVICES

The Testing Center at T-VI provides a variety of testing services free of charge to New Mexico residents.

An important community service is administration of the General Educational Development (GED) examinations for a high school equivalency certificate. Any New Mexico resident 18 years of age or older, who is not a high school graduate but whose high school class has graduated, may apply to take the GED exams at T-VI free of charge. However, it is strongly recommended that anyone planning to take the GED enroll in the Evening Division's tuition-free GED preparatory courses before challenging the five-part examination. Information about the GED examination schedule can be obtained by calling the Testing Center at 842-3780.

The Testing Center also gives a variety of aptitude and achievement tests to people who apply for admission to a full-time major. The test results are used by admissions counselors to help the applicant determine which of the majors at T-VI appear to best match the applicant's aptitudes and abilities.

ENTRANCE REQUIREMENTS

To enter the Institute, a student must generally be 18 years of age or older. If under the age of 18, he must be either a high school graduate or a student who has been officially withdrawn from high school for at least one year. It is NOT necessary to be a high school graduate to enter T-VI.

The applicant must take some aptitude and achievement tests which are designed to help him find the area of studies for which his chances of success are the greatest. To enter a particular program, the applicant must demonstrate aptitudes at or above the minimum requirements established for that major.

Finally, the applicant must appear for scheduled post-test interviews with the Institute's admissions counselors, who will work with the student to decide which instructional programs are best suited for him on the basis of his interests and abilities.

ADMISSION PROCEDURES

A person wanting to enter the Institute must complete four steps before he is formally admitted and a place in classes reserved for him. Because some of the major areas are filled to capacity far in advance of the start of a trimester, *it is important for the applicant to complete all four of the steps as early as possible.* The four steps in the admission process are:

1. APPLICATION — Official application forms are available at the T-VI Admissions Office, or at the counseling offices of any of Albuquerque's public high schools. Because of the time required for testing and admissions counseling, *completed application forms must be submitted no later than 30 days before the start of the trimester.* During 1971-72, these deadlines are August 20 for the Fall Trimester, December 23 for the Spring Trimester, and April 13 for the Summer Trimester.

2. APTITUDE TESTING — When a completed application has been submitted, the applicant will be notified to come to the T-VI Testing Center for the required aptitude tests for his choice of major. It is important to meet this test appointment, because missing it will delay the applicant in completing the application process and the major he wants may be filled.

3. TEST INTERPRETATION AND COUNSELING — When the applicant takes the aptitude tests, he is notified when to come back for test interpretation and admissions counseling. The counselor and applicant, using the aptitude test scores, decide whether the applicant's choice of career fields is one for which he has the necessary aptitudes and abilities, or whether he should consider some other major fields. When they have agreed upon the best program, the counselor will approve the applicant for admission to that program.

4. PAYMENT OF REGISTRATION FEE — As soon as the counselor has approved the applicant for admission, the applicant can complete the process by paying the \$5 registration fee. In some majors, he must also pay a personal equipment fee before he is admitted.

When the applicant has been officially admitted, he will be given instructions about when to come on registration day to complete registration forms and pick up his class schedule for the trimester. After registration, he is ready to report to his classes on the first day of the trimester (see "School Year" schedule on Page 4 for dates).

CHARGES AND FEES

TUITION: For non-residents of New Mexico, and for students whose education is fully underwritten by federal training funds, tuition is \$300 per trimester.

For residents of New Mexico, including dependents of members of the armed forces stationed on active duty in New Mexico, there is no tuition charge if the student signs a tuition waiver request form.

Anyone who has paid a tuition fee and withdraws during the first seven weeks of a trimester will be refunded the unused part of the tuition fee. *No refund will be made after the seventh week.*

REGISTRATION FEE: There is a \$5 registration fee each trimester, which must be paid before the applicant is admitted. *Payment of the registration fee reserves the applicant a place in classes through the second day of the trimester only.* Unless the applicant has requested, in writing, an extension of his class reservation beyond the second day of the trimester, his place in classes can be filled by another applicant on the third day of the trimester.

The registration fee is a charge for processing the applicant's admission papers, and is not refunded once it has been paid. A refund of the registration fee will be made only in the event that the Institute cancels an instructional program to which applicants had been admitted.

PERSONAL EQUIPMENT FEE: Several majors at T-VI require the student to buy personal equipment, such as uniforms in the health occupations, and tool kits in the skilled trades. They will be issued the equipment, purchased at very advantageous educational institution prices by T-VI, on the first day of classes and the equipment is thereafter the personal possession of the student.

Personal equipment fees must be paid in full before the student is officially admitted. The fee is payable once only, when the student is entering the major for the first time. Refunds of the personal equipment fee will be made if the applicant withdraws before the equipment has been issued to him; *once it has been issued, no refund can be made.*

Personal equipment fees in effect during 1971-72 are as follows: Air Conditioning-Heating-Refrigeration Trades — \$55; Auto Collision Repair — \$60; Auto Mechanics (Chassis & Drive Trains) — \$60; Auto Mechanics (Electrical & Tune-Up) — \$60; Cabinetmaking — \$55; Hospital Aide — \$20; Inhalation Therapy — \$65; Machine Trades — \$55; Practical Nursing — \$65; and Welding — \$25.

BOOKS AND SUPPLIES: Textbooks are provided on free loan to all full-time students. They must be paid for only if the student loses or damages them.

Students are responsible for buying their own routine school supplies, such as paper, notebooks, and pencils. These will usually average about \$10 a trimester.

DIPLOMAS AND CERTIFICATES

DIPLOMAS are awarded to students who satisfactorily complete all of the requirements in a major program of two or more trimesters as described in this *Bulletin*. Diploma programs require that the laboratory courses be taken in the proper sequence, and that a specific list of supporting courses be completed. The major program descriptions list the suggested courses for each trimester, but are not restrictive as to the order in which some of the supporting courses are taken.

The first trimester of some technology and vocational majors is offered as an introductory level program. Applicants who score highly in the entrance examinations, and who have a sufficient background in these majors, may obtain waivers for the first trimester and enter the diploma program at the Trimester II level.

CERTIFICATES are awarded to students who satisfactorily complete all the *laboratory* requirements in a diploma program, but who do not complete all of the required supporting courses.

Certificates are also offered for majors of less than two trimesters.

CREDIT WAIVERS: A student can be given credit, on a credit waiver, for any course in his major program requirements if he can demonstrate that he already has the knowledge or skills demanded by that class. A waiver of credit requires the approval of both the class instructor and the Director of Student Services. A class for which a credit waiver has been approved counts toward meeting diploma requirements. The student may have to take a final examination before a waiver is granted.

STANDARDS OF PROGRESS

Progress reports are given to the student at the mid-point and end of each trimester. Only the final trimester grades become part of the student's permanent records at T-VI.

The progress reports use the A-B-C-D-F grading system. In a few courses, the grading system is "S" (Satisfactory) and "U" (Unsatisfactory). A grade of "F" or "U" indicates the student is not performing the work of the courses at a satisfactory level.

A student who receives an "F" or "U" as the trimester final grade in any class or laboratory will not receive credit for that course toward diploma or certificate requirements. In addition, he will not be allowed to enroll in any course for which the failed course is listed as a prerequisite unless and until he has repeated the failed course and obtained a passing grade.

ACADEMIC PROBATION: A student who fails a required course in his diploma or certificate program is automatically placed on academic probation for the following trimester. If, at the end of the probationary trimester, the student is again failing any of the required courses on the diploma or certificate program, *he or she will not be allowed to continue in the same major field.*

ATTENDANCE POLICIES

Each person admitted to T-VI pledges to attend all class sessions of every course as a condition of his or her admission.

Attendance is taken each class period every day, and absences and tardiness are reported to the Attendance Office *where they become part of the student's permanent transcript record.*

A student whose attendance record shows an undesirable pattern of absences in one or more of his classes will be issued a warning, and asked to meet with a counselor to try to solve the problem which is causing him or her to be absent.

ATTENDANCE PROBATION: A student who continues to be absent after the warning will be placed on attendance probation. A student on probation is subject to suspension from the class or classes in which the absences are occurring if there are any more absences. A student who is absent after having been placed on attendance probation will be suspended from the class or classes for the balance of the trimester.

Anyone suspended for violation of attendance probation must go back through the regular admissions process if he or she desires to try to re-enter the Institute in future trimesters.

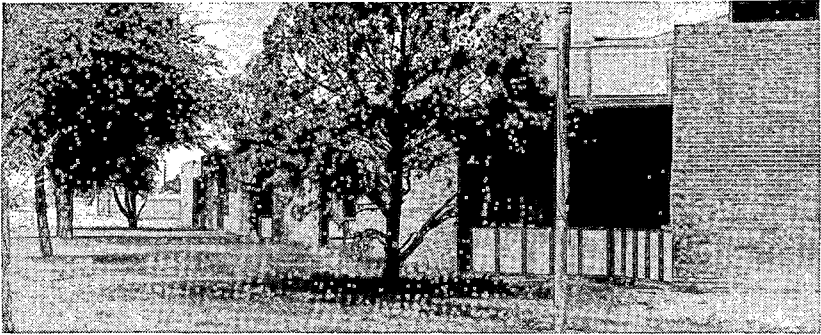
ADMINISTRATIVE REVIEW COMMITTEE: A student suspended for violation of attendance probation, or for misconduct, has the right to appeal the suspension to an Administrative Review Committee made up of students plus one faculty member. The committee is appointed by the Vice President of the Institute.

After hearing the appeal by the suspended student, the Administration Review Committee recommends one of three courses of action to the Vice President: (1) that the suspension for the balance of the trimester be carried out, (2) that the student be readmitted to classes on probation, or (3) that the student be readmitted to classes without any probationary stipulation.

STUDENT RECORDS

Permanent records are maintained for each student who attends the Institute. The permanent transcript shows the amount of instruction each student has received, whether course credits are by full completion or waiver, and whether the program of studies was partial or complete. It also records all final grades earned, and the number of absences which the student had each trimester he or she attended T-VI.

Confidential copies of transcripts are routinely provided, on request, to bona fide employers and to accredited educational institutions. *Any student who does not want his or her transcript sent to prospective employers or to other educational institutions must indicate this in writing on the face of the transcript.* This can be done by visiting the Student Records Center in person.



STUDENT SERVICES

COUNSELING: The Student Services Division provides assistance to applicants and students through its offices of Admissions, Testing, Counseling, Attendance, Student Records, Student Financial Aids, and Employer Relations. Counselors are available to help students in any problem areas related to their studies at T-VI. While each major area has prescribed courses of study, the aim of the Institute is to serve the needs of each individual student in the best way possible, and individual changes can be made in the major program where the student's needs would be better met with such a change.

JOB PLACEMENT: Finding a job after graduation or upon leaving the Institute is the responsibility of the student. However, the Institute's Employer Relations Counselor is available to help refer students to employers who are looking for people in the areas for which T-VI has training programs.

STUDENT ACTIVITY CENTER: A lounge is available for students, and it has snacks, and hot and cold beverages. It does not have facilities for complete meals, so that students who want more than a light snack for their noon meal need to bring their own lunches or go off campus for lunch.

ROOM AND BOARD: There are no facilities on campus for room and board.

TRANSPORTATION: Full-time T-VI students are entitled to the student discount rate on Albuquerque city buses on school days during school hours, upon presentation of the official T-VI student identification card. *Students with severe financial needs can apply for free city bus tokens at the Student Financial Aids Office.*

Many T-VI students drive their own cars to and from school, and adequate parking facilities are available on campus.

SELECTIVE SERVICE DEFERMENTS: Men who are subject to the military draft may have a Student Certificate (Form SS-109) sent to their Selective Service Board, in order to obtain student deferment. Men enrolling in the Institute should contact the Admissions Office and request that a Form SS-109 be sent. The Student Certificate will be sent to the student's draft board as *soon as he is actually attending classes at the Institute.*

FINANCIAL ASSISTANCE

The Institute has no provisions for financial aid to students from its general operational funds. However, many students attending T-VI are eligible to receive financial aid from other agencies while they are furthering their education.

Information about the various kinds of financial aid available can be obtained by contacting T-VI's Student Financial Aids Manager. Some of the forms of financial help available are:

NEW MEXICO STUDENT LOAN PROGRAM: New Mexico residents are entitled to borrow up to \$1,500 each nine-month academic year under this program, which is a part of the Federally Insured Student Loan Program, while they are furthering their education beyond the high school level.

The loans are intended to help students defray normal expenses (board and room, clothing, transportation, fees, etc.) while they are attending school full-time. Interest rate on the loans is 7%, but the interest is paid by the federal government for the student while he is in school. The student does not have to begin repayment of the loan, or interest charges, until 12 months after he graduates or leaves school.

Deadlines for New Mexico Student Loan applications are July 15 for the Fall Trimester, Nov. 20 for the Spring Trimester, and April 15 for the Summer Trimester. Persons who have been admitted to T-VI are eligible to apply for a loan. Checks for the full amount of the approved loan are issued shortly after the beginning of the trimester, but only to persons who are in full-time attendance at that time. Applications are available from the Student Financial Aids Manager.

VETERANS BENEFITS: Most full-time programs at T-VI have been approved by the Veterans' Administration for student financial support under the GI Bill. In addition to eligible service veterans, persons entitled to benefits include children and widows of deceased veterans, and dependents of veterans with 100% disability classification.

Information about eligibility for these education and training benefits can be obtained from the nearest Veterans Administration office. The Albuquerque office is at 400 Gold SW (Phone 843-2262).

Persons planning to attend T-VI with financial support under the GI Bill should be aware that *there is a time lag of about 60 days from the first day the student attends classes until the first support check arrives*, and they should be prepared to meet living expenses without the VA support for the first two months of schooling.

SOCIAL SECURITY: Under the 1965 Amendments to the federal Social Security Law, the children of retired, disabled or deceased workers covered by the Social Security program and Railroad Retirement Act are eligible to receive payments until they reach age 22 while they are full-time students at T-VI. The nearest Social Security District Office can provide information about eligibility. The Albuquerque office is at 500 Gold SW (Phone 843-2531).

BUREAU OF INDIAN AFFAIRS: Indian students attending T-VI may be eligible for educational benefits through the BIA. For information, contact the Albuquerque Area Office at 5301 Central NE, and ask for Mr. Walter T. Diddock, Employment Assistance Specialist (Room 414, Phone 843-3153).

VOCATIONAL REHABILITATION: Persons with disabilities may be able to attend T-VI under training programs of the New Mexico State Dept. of Vocational Rehabilitation. The Albuquerque office is located at 505 Marquette NW (Phone 842-3186).

MANPOWER TRAINING PROJECTS: From time to time, special programs are offered by T-VI and its subsidiary, the Albuquerque Skill Center at 2401 Broadway SE, through manpower training contracts under which unemployed and underemployed people receive training allowances while attending school.

Examples are projects under the federal Manpower Development Training Act (MDTA), Concentrated Employment Program (CEP), and Work Incentive Program (WIN). Students for these manpower training programs are selected by the federal Employment Security Commission and its New Mexico Employment Service. Information about such programs can be obtained by contacting the State Employment Service office at 505 Marquette NW.

MODEL CITIES SCHOLARSHIPS: Persons who have resided in the Albuquerque Model Cities area for at least one year, and who meet eligibility requirements related to family income level, may apply for Model Cities scholarship awards while they are attending T-VI. Application forms are available at the Student Financial Aids office. For further information, contact the Model Cities Project Coach, at 122 Broadway SE (Phone 842-7808).

COLLEGE WORK-STUDY PROGRAM: A limited number of full-time students are employed by T-VI under the federally-supported College Work-Study Program. This program allows students to work up to 15 hours per week for a regular hourly wage. Information and applications for participating in the CWS program are available in the Student Financial Aids office.

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 KERBY, DALE E. Chairman, Department of Office Education
A.A., Trinidad Junior College; B.A., M.A., Adams State College
 LENNOX, CECIL R. Instructor, Electronics Technology
B.S., New Mexico Highlands University; M.S., Purdue University
 LEWIS, JOHN R. Coordinator, Auto Collision Repair
B.S., University of New Mexico
 LOGAN, BARBARA JEAN Instructor, Office Education
B.S., University of New Mexico
 MAXSON, WILBUR B. Instructor, Electronics Technology
B.A., State College of Iowa; M.Ed., University of Colorado

 MAY, JUNE ANN Instructor, Nursing Assistant
B.S., Northern State College of Los Angeles
 MAES, JUAN A. Instructor, Office Education
B.A., M.A., New Mexico Highlands University
 MCKINNEY, THELNESSA Instructor, Mathematics
B.S., Southwestern Oklahoma University
 MEUSER, CHARLES B. Instructor, Electronics Technology
B.S., Purdue University
 MILLER, ROBERT R. Coordinator, Auto Mechanics
B.S., Kansas University; M.A., Colorado State University
 O'BRIEN, PATRICIA L. Instructor, Practical Nursing
B.S., University of Kansas
 OMNESS, LOREN O. Coordinator, Machine Trades
B.S., Ferris State College
 ORAVECZ, ANDREW T. Instructor, Drafting Technology
A.A., Penn State University
 PAYNE, LILLIE M. Instructor, Office Education
A.S., B.S., University of Houston
 QUINT, JAMES P. Instructor, Electronics Technology
B.S., Northwestern University; M.S., University of New Mexico
 RAUPAGH, WILLIAM A. Instructor, Machine Trades
B.S., Wayne State University
 RITCHIE, JOAN EVANS Instructor, Nursing Assistant
R.N., LDS School of Nursing
 ROBERTS, MARSHALL L. Instructor, Adult Basic Education
B.S., Brigham Young University; M.A., Louisiana State University
 ROKISKY, RONALD E. Instructor, Office Education
A.B., Glenville State Teachers College
 ROYER, D. DENNIS Instructor, Accounting Technology
B.S., University of Albuquerque; M.B.A., University of New Mexico
 RUSSELL, MAXINE E. Instructor, Practical Nursing
B.S.N., University of New Mexico

Faculty . . . (cont.)

- SAHD, JOSEPH Instructor, English
B.A., College of Santa Fe
- SANDERS, JACQUELINE Instructor, Office Education
B.A., University of New Mexico
- SAWYIER, WILFRED G. Instructor, Humanities
B.A., University of Dubuque; B.D., McCormick Seminary; Ph.D., Michigan State University
- SCARBROUGH, WENDEL A. Instructor, Mathematics and Data Processing
B.A., M.A., New Mexico Highlands University
- SERDA, JULIAN Instructor, Electronics Technology
- SMITH, JAMES C. Instructor, Auto Mechanics
B.S., University of New Mexico
- STOLET, IRVING J. Instructor, Welding
- STRABA, MARGARET K. Instructor, Nursing Assistant
R.N., St. Mary's School of Nursing
- THRASH, WILLIAM A. Instructor, Office Education
A.A., Kendall College; B.S., University of Albuquerque
- TIBBETS, O. JUD Supervisor, Department of Technologies
B.S., West Texas State University
- TOLER, JAMES P. Instructor, Mathematics and Data Processing
B.A., University of Michigan; M.A., Boston College
- VAN NOY, JANICE Instructor, Practical Nursing
B.S.N., University of New Mexico
- VICKERS, JAMES J. Instructor, Accounting Technology
B.B.S., University of New Mexico
- VINE, SUSAN A. Instructor, English and Mathematics
B.S., New Mexico Institute of Mining and Technology
- VOKOSKY, FRANK J. Instructor, Mathematics and Data Processing.
A.S., Hartford State Technical Institute; B.S., Utah State University
- WHITE, CALVIN C. Instructor, Mathematics and Data Processing
B.S., M.S., Oklahoma Central State College
- WINTERINK, JOHANNAS A. Instructor, Mathematics
B.S., College of St. Joseph; M.A., University of Albuquerque

STUDENT SERVICES DIVISION

- SMOKER, DAVID E. Director, Student Services Division
B.A., M.A., New Mexico Highlands University
- ANZURES, BENITO Counselor
B.A., M.A., Ed. Spec., University of New Mexico
- BACA, JOHN E. Associate Director, Student Services Division
B.A., University of New Mexico; M.A., University of Kansas
- CHAVEZ, ESTHER G. Counselor
R.N., St. Anthony Nursing School; B.S., M.A., University of New Mexico
- CHIARAMONTE, JULIO Vocational Counselor, East Area Office
B.S., University of Santa Clara; M.A., University of New Mexico
- NOBLE, RAY T. Counselor
B.A., M.A., University of New Mexico

SILVA, BARBARA M. Counselor
B.S., New Mexico State University; M.A., University of New Mexico

THOMAS, DONALD R. Vocational Counselor, North Area Office
B.S. Ed., University of Idaho; M.A., Colorado State University

VALDEZ, DELFINO Vocational Counselor, South Area Office
A.B., University of Albuquerque; M.A., University of New Mexico

VIGIL, J. RUBEN Counselor
B.S., M.A., University of New Mexico

VIGIL, PATRICK R. Employer Relations Counselor
B.A., New Mexico Highlands University; M.A., University of Albuquerque

EVENING DIVISION

JACKSON, HAROLD W. Director, Evening Division
B.S., Kansas State Teachers College; M.A., New Mexico Highlands University

DURAN, CLETO N. Supervisor, Adult Basic Education
B.A., University of New Mexico; M.A., University of Albuquerque

SAPIEN; WILLIAM Assistant Director, Evening Division
B.S., University of New Mexico

ALBUQUERQUE SKILL CENTER

VIGIL, H. FELIX Director, Albuquerque Skill Center
B.A., New Mexico Highlands University; M.A., University of New Mexico

ALDERETE, DAVID Instructor, General Sales
B.S., University of Albuquerque

BARNETT, U.S. Instructor, Mechanics
Diploma, National Trade School

CISNEROS, MARIANNE Counselor
B.A., Colorado Western State College; M.A., University of New Mexico

DeSPAIN, A. VERL Instructor, Related Education
B.A., New Mexico Highlands University

GRIESHOP, PATRICIA Counselor
B.A., Harpur College; M.A., New Mexico State University

HALLIDAY, JOHN Instructor, Electronics
B.S., Utah State University

JIRON, JULIA Instructor, Office Education
B.S., University of New Mexico

LEAVITT, MAX Counselor
B.A., M.A., Sacramento State University; Ph.D., University of New Mexico

LOPEZ, BEATRIX Instructor, Related Education
B.A., University of Albuquerque; M.A., University of North Carolina

LUCERO, JUAN Instructor, Electronics
B.A., New Mexico Highlands University

McGRUDER, HELEN Instructor, Office Education
B.B.A., Texas Tech University

OLSON, WILLIAM Instructor, Mechanics
B.S., New Mexico Highlands University

WARD, JAN Instructor, Medical-Clerical
C.M.A., A.A.M.A.

TRADES/TECHNOLOGIES PREPARATORY PROGRAM (1 Trimester)

This preparatory program is offered for persons who would like, or who need, some general refresher work or greater depth in mathematics before entering directly into one of the skilled trade or technology majors.

The Trades/Technologies Preparatory program also offers the opportunity for a person who is not certain about his career choice to "explore" some career fields to see which major might be best for him.

The preparatory program is especially valuable for persons who are not high school graduates, or who have been out of school for a long time. After successful completion of this program, students can usually qualify for the vocational or technical major of their choice.

The Trades/Technologies Preparatory Program is also of value to people required to pass entrance examinations to enter occupational fields other than those offered at T-VI. For example, a person needing review math and English work before taking the entrance examination for the Albuquerque Police Academy would find this program very helpful.

Students in this program must take the required minimum of two courses, and as many more elective courses as they can fit into their day. Those attending under the GI Bill must take a minimum of 25 hours a week to qualify for full support.

The Trades/Technologies Preparatory Program is a non-credit program, in that none of the course work applies toward a diploma. However, students earn grades and compile an attendance record in the program, and the results become a part of their permanent transcript at T-VI.

<i>Course Offerings</i>	<i>Hours/Week</i>
English Review (required)	5
Mathematics Review (required)	10
Human Relations	5
Industrial Electricity	5
Introduction to Accounting	5
Introduction to Data Processing	5
Introduction to Drafting	5
Introduction to Electronics	5
Reading Improvement	5
Readings in Technology	5
How to Study	2

COURSE DESCRIPTIONS

ENGLISH REVIEW

This is a general refresher course in written and oral communication. It includes units to develop reading skills, written expression, speaking skills, vocabulary, spelling, and a grammar review. Placement in classes is by ability level.

MATHEMATICS REVIEW

Mathematics preparatory courses are offered at a variety of entering skill levels, and the student will be assigned to two hours a day of math review which relates directly to his intended major. The Trade Math and Technical Math courses run the entire range from a review of basic mathematics operations such as whole numbers, fractions, decimals and percentages through algebra review.

HUMAN RELATIONS

Using an exploratory approach, this course studies the special composition of the world of work. It is designed to prepare the students for success in a working environment. The content of the course deals with personal and vocational ethics, employee-employer relations, and employee-fellow employee relations. Textbook material, classroom lectures and discussions, audiovisual presentations, and role-playing emphasizes techniques of training for a vocation. Emphasis is also given to the "how" of applying for, acquiring, and keeping a job.

INDUSTRIAL ELECTRICITY

This course covers the basic principles of electricity, electronic components and symbols, schematic reading, transistors and automatic controls. The course includes laboratory experiments in practical applications of electronics in the student's field of study.

INTRODUCTION TO ACCOUNTING

This course provides instruction in basic bookkeeping. It incorporates the complete bookkeeping cycle, including the preparation of the balance sheet, income statement, trial balance, worksheet and subsidiary ledgers. Emphasis is placed on the principles of journalizing and posting to the general ledger and posting from the combined cash journal.

INTRODUCTION TO DATA PROCESSING

This course provides an introduction to processing data by Data Processing machines. Introductions to Data Processing removes some of the mystery surrounding automation, acquaints the student with the terminology used in this field, and provides some knowledge of preparation of input.

INTRODUCTION TO DRAFTING

Designed especially for those preparatory students who hope to enter the drafting program, this course covers the place of drafting in the industrial structure, drafting materials and equipment, elements of the various types of drafting, design concepts, and use of reference materials related to the field.

INTRODUCTION TO ELECTRONICS

Designed for preparatory students who hope to enter electronics or related major programs, this course covers basic electronic theory, electronic components and symbols, fabrication techniques, schematic reading, circuit tracing, simple construction such as mounting and soldering, and a survey of present and future electronic job opportunities. The course includes some field trips to observe types of electronics jobs and production.

READING IMPROVEMENT

This course is designed to strengthen those skills that will enable students to read with both speed and comprehension. Most of the technical skills needed depend on reading speed and comprehension and a mature interpretation and use of written material. Realistic and meaningful experiences with listening tapes, machines, and other visual aids will be used in the course to develop basic reading skills.

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Trades/Technologies . . . (cont.)

READINGS IN TECHNOLOGY

This course can be tailored to the individual student's needs and vocational interests, since a sizable part of the course involves selective readings in periodicals and specialized readings in trade and technical journals and material. All students in this course are given instruction designed to develop reading skills and vocabulary. There are some experiences with tours and outside speakers.

HOW TO STUDY

This course is designed to supplement other courses in any major field or the preparatory program. The content of the course deals with note-taking, outlining, test-taking, basic skills in reading, study time organization and self evaluation. Instruction is tailored to individual student's needs.

ACCOUNTING (4 Trimesters)

The Accounting major places emphasis on accounting for small and medium sized businesses. Laboratory courses are designed to take the student from the basic accounting cycle through cost accounting, advanced and income tax accounting.

All accounting students select either a business minor or a data processing minor, as detailed below, at the end of Trimester I.

The four-trimester diploma program totals 1500 hours of instruction for students with the business minor, and 1650 hours of instruction with the data processing minor. Included in the major are 675 hours of laboratory work.

Many students enter this major only after completing the one-trimester Trades/Technologies Preparatory Program.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>Hours/Week</i>
Accounting Principles I Lab	10
Introduction to Data Processing	5
Office Machines	5
Accounting Math	5
<i>Trimester II</i>	
Accounting Principles II Lab	10
Posting Machines/Typing	5
Economics of Money and Banking	5
Report Program Generator (<i>D.P. minor</i>)	5
Algebra (<i>D.P. minor</i>)	5
Business Communications I (<i>Business minor</i>)	5
<i>Trimester III</i>	
Intermediate Accounting Lab	10
Business Law	5
Business Systems	5
COBOL I (<i>D.P. minor</i>)	5
Business Communications II (<i>Business minor</i>)	5

Trimester IV

Advanced Accounting Lab	5
Cost Accounting Lab	5
Tax Accounting Lab	5
Personnel Management	5
Internal Accounting & Control	5
COBOL II (<i>D.P. minor</i>)	5

COURSE DESCRIPTIONS

ACCOUNTING PRINCIPLES I LAB

This introductory course is designed for an accounting major. Concepts and procedures underlying financial accounting are examined. Topics included in this course are: collection and presentation of data, income measurement, accounting for notes and interest, inventories and cost of goods sold, fixed assets and depreciation, manufacturing accounting, payrolls, internal controls, manual, mechanical, and electronic accounting systems.

INTRODUCTION TO DATA PROCESSING

This introductory course covers manual and automated informations systems, historical development, definitions, planning and recording data in punched cards and other input media, sorting, collating, tabulating, calculating, control panels, digital and analog computers, internal storage, and the process of using a computer.

OFFICE MACHINES

Instruction is given in the most widely used office machines: 10-key adding machines, rotary, electronic and printing calculators and card punch machines.

ACCOUNTING MATH

This course is intended to give the student a strong background in the basic fundamental operations in arithmetic and to familiarize the student with a wide range of accounting procedures for which mathematics is required. The student preparing to enter the accounting world will have his mathematical skills sharpened through participation in this accounting math course. This course stresses the review of arithmetic fundamentals, equations, and percentages; and also helps develop the theory of accounting, finance, insurance, as well as other math-related business courses.

ACCOUNTING PRINCIPLES II LAB

(Prerequisite: Accounting I Lab) This laboratory includes instruction in partnership and corporate accounting, long-term investments and liabilities. Analysis and interpretation of financial statements will be studied along with managerial use of accounting data, the flow of funds and budgeting as well as tax problems to be considered in the business. A brief introduction to cost accounting as used in the manufacturing business will also be made.

POSTING MACHINES/TYPING

Designed for all accounting majors, this course provides instruction in posting machine operable parts and the development of a working knowledge of several makes of posting machines. Alternated with the posting machine instruction is a unit designed to teach and review basic typewriting.

ECONOMICS OF MONEY AND BANKING

This course inquires into the use of money and banking in a society and its relationship to the general economic welfare. The course provides an appreciation

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Accounting . . . (cont.)

for the American Monetary System as it has evolved. The concepts learned are applied in interpreting the current economic conditions as noted in the supplementary reading and general news media.

REPORT PROGRAM GENERATOR

(Prerequisite: Intro. to D.P.) This course is required for the data processing minor in accounting. Instruction is provided in the Unit Record principle as it relates to Report Generator data processing on the computer. The course also covers makeup and use of the input specifications form, calculation specifications form, card to printer, card to disk, disk to printer, disk to disk, disk to disk to printer operations, editing capabilities, and the strengths and weaknesses of the RPG system.

ALGEBRA

(Prerequisite: Accounting Math) This course provides instruction in algebra, including the use of variables, equations with one unknown, algebraic expressions, algebraic functions, and linear equations with two unknowns and graphical representation. Course content is related to data processing functions for the accounting student who is minoring in data processing.

BUSINESS COMMUNICATIONS I

The ability to communicate effectively in business is increased by the study of grammar, punctuation, vocabulary, pronunciation, and spelling. Students are required to learn only those functional principles that are used in speaking and in writing.

INTERMEDIATE ACCOUNTING LAB

(Prerequisite: Accounting Principles II Lab) This course is designed to give the student an in-depth study of accounting procedures covered in Accounting I and II, as well as new principles of the accounting cycle.

There is no workbook and no practice set, so the student will be involved with problem solving and designing his own reports and statements.

Students will be encouraged to participate in critical evaluation of accounting concepts so that they can become aware of the conflicts and shortcomings that exist within the traditional structure of accounting theory. To help in this evaluation and to serve as guidelines for decision making, students will study opinions of the Accounting Principles Board, accounting research studies sponsored by the AICPA, and opinions of leading accountants.

BUSINESS LAW

This course provides a basic knowledge of law as it applies to all business dealings in our society. Particular emphasis is placed on the Uniform Commercial Code. Practical problems in law are considered and solutions recommended.

BUSINESS SYSTEMS

This course presents the importance of business organization, the internal structure of business, the need for communication, the analysis of business systems, equipment needs and uses. It provides experiences in analysing business conditions, easing problems and recommending solutions.

COBOL I

(Prerequisite: RPG) This course is required for the data processing minor in

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Accounting . . . (cont.)

accounting. Content includes the history of COBOL (Common Business Oriented Language), program divisions, the character set, coding sheets; data, condition, procedure, and special names; reserved COBOL words, arithmetic, logical and relational operators, constants, literals, comparisons, elements of a sentence, and introduction to Data Division and Procedure Division.

BUSINESS COMMUNICATIONS II

(Prerequisite: Bus. Communications I) Training and practice is given in writing all types of business letters, reports, and memoranda. The student will complete a "Job Portfolio" consisting of his own sample application letter and resume. Oral communication is covered to prepare the student for effective speaking in different on-the-job situations.

ADVANCED ACCOUNTING LAB

(Prerequisite: Accounting Principles II Lab) This laboratory includes instruction and experience in partnerships, liquidations, detailed installment and consignment sales, and fund and encumbrance accounting.

COST ACCOUNTING LAB

(Prerequisite: Intermediate Accounting) This advanced accounting course is intended to give the student an understanding of the importance of cost accounting procedures, not only from the standpoint of establishing cost, but for managerial purposes. The procedures for accumulating cost will be stressed along with the use of various reports for communicating meaningful cost data to management.

TAX ACCOUNTING LAB

(Prerequisite: Accounting Principles I Lab) An examination of the fundamental characteristics of the federal income taxes applied to individuals and corporations. Emphasis is placed upon the recognition of an income tax problem and the timely arrangement of individual and corporate transactions to produce the most favorable income tax consequences.

PERSONNEL MANAGEMENT

This course covers personnel recruitment, training, and leadership; interrelationships between various departments, jobs, and individuals; and employee status and role within an organization. Emphasis is placed on relationship of the personnel department to the total system management.

INTERNAL ACCOUNTING & CONTROL

(Prerequisite: Business Systems) An extension of Business Systems dealing more specifically with flow charting, systems manuals, internal control, and designing of accounting systems so as to implement, through analysis and interpretation, the managerial functions of planning and controlling operations.

COBOL II

(Prerequisite: COBOL I) This course is required for the data processing minor in accounting. Content includes a continuation of development of programming skills in the COBOL language, with emphasis on more complicated sentences, statements and clauses. Instruction is provided in special techniques such as sort-description entries, the SORT verb, report description entries, the INITIATE, GENERATE and TERMINATE verbs, a comparison of COBOL and PL/1 languages, and a demonstration of conversational PL/1 on a terminal. Extensive COBOL edit and file maintenance and processing programs are written, compiled, debugged, and tested.

AIR-CONDITIONING, HEATING AND REFRIGERATION (3 Trimesters)

The Air-Conditioning, Heating, and Refrigeration Program is designed to qualify students for successful entry into the installation, maintenance, and service field in this specialty. With further training being offered by prospective employers at the dealer, distributor, and mechanical contractor level, the graduate of this program should be able to assist the journeyman mechanic in the installation of necessary equipment for the completion of residential and commercial projects. This includes the installation of mechanical equipment and electrical controls.

The graduate will be able to assist the journeyman mechanic in the servicing of various air-conditioning, heating, and refrigeration components, troubleshooting of the systems, and preventive maintenance that is required of all mechanical equipment.

The three-trimester diploma program totals 1350 hours of instruction, of which 675 hours are laboratory work and 675 hours are supporting courses.

Many students enter this major only after completing the one-trimester Trade/Technologies Preparatory Program.

Air-Conditioning, Heating, and Refrigeration students must pay a personal equipment fee of \$55; and must provide their own shop coveralls and safety glasses or goggles.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>(Hours/Week)</i>
Air-Conditioning, Heating, Refrigeration Lab I	15
Air-Conditioning, Heating, Refrigeration Theory I	5
Trade Math I	5
<i>Trimester II</i>	
Air-Conditioning, Heating, Refrigeration Lab II	15
Air-Conditioning, Heating, Refrigeration Theory II	5
Trade Math II	5
Blueprint Reading I	5
<i>Trimester III</i>	
Air-Conditioning, Heating, Refrigeration Lab III	15
Air-Conditioning, Heating, Refrigeration Theory III	5
Business Management	5
Blueprint Reading II	5

COURSE DESCRIPTIONS

AIR-CONDITIONING, HEATING, REFRIGERATION LAB/THEORY I

These laboratory-oriented courses give the beginning student instructions in shop safety, basic tools and equipment, introduction to physics and chemistry, basic controls and systems, and installation, maintenance, and service knowledge for residential type heating and cooling equipment encountered in the industry.

TRADE MATH I

This course reviews basic arithmetical, algebraic, and slide rule operations

needed to solve specific problems in temperature conversion, dimensions, area, standard volumes, force, work and energy, power, therm, British thermal unit, specific and latent heat, and various mathematical laws as applied to the major.

BASIC ELECTRICITY

This course offers instruction in the areas of units and symbols, classes of materials and their usage, electrical circuits and laws of electricity, magnetic circuits-electric meters, transformers and motors, relays, contactors, starters, circuit protection, and test and measuring equipment.

AIR-CONDITIONING, HEATING, REFRIGERATION LAB/THEORY II

(Prerequisites: All Trimester I courses) These courses provide instruction in the installation, maintenance, and service of light commercial air-conditioning, heating, and refrigeration systems. Instructional emphasis will be placed on electrical problems and controls, gas-electric packages, heat pumps, compressors, condensers, pressure reducing devices, load calculations, heat transfer, psychrometrics, winter air-conditioning-heating, summer air-conditioning-cooling, and safety code for mechanical refrigeration.

TRADE MATH II

(Prerequisite: Trade Math I) This course provides instruction in rules and formulas, ratio and proportion, volume, pulley speeds, load calculations, geometric construction, and velocity as applied to the air-conditioning, heating, and refrigeration program.

BLUEPRINT READING I

(Prerequisites: All Trimester I courses) This course covers terminology, freehand sketching of orthographic and isometric drawings, construction details, abbreviations and symbols, electrical constants and unit prefixes, schematics, and color code for piping.

AIR-CONDITIONING, HEATING, REFRIGERATION LAB/THEORY III

(Prerequisite: All Trimester II courses) These courses provide instruction in the installation, maintenance, and service of commercial air-conditioning, heating, and refrigeration systems. Instructional emphasis will be placed on applications to commercial systems, installing and servicing, heat loads and piping, principles and applications of absorption systems, special refrigeration devices and applications, air distribution, advance controls, service problems, and trouble-shooting.

BUSINESS RELATIONSHIPS

This course covers business terminology, business organizations and operations, problems of distributing goods and services, physical facilities, finance, keeping records, invoice and billing procedures, managing merchandise, laws for the businessman, and customer and personnel relations as they relate to the air-conditioning, heating, and refrigeration industry.

BLUEPRINT READING II

(Prerequisite: Blueprint Reading I) This course covers measurement review, angular measurement, drawing review, building trade symbols, types of construction in residences and commercial building, sheet metal shop procedures, general sheet metal work, types of insulation encountered in construction, duct systems and duct design methods, duct materials, warm-air heating plans, ventilation plans, air-conditioning plans, interpretation of mechanical and electrical plans for residential and commercial buildings, craftsmanship and design concepts, and the roles of the architect, engineer, contractor, manufacturer, and craftsman.

AUTOMOTIVE COLLISION REPAIR (3 Trimesters)

The Automotive Collision Repair Program is designed to qualify a student for employment as a metal man or painter in the automotive industry. The student is allowed to qualify in the area of his choice and ability.

In the first trimester, students are given instruction and practical experience in minor body work and basic automotive painting procedures. Students are encouraged to specialize as they progress in their training. The quality of work, and the flat-rate manual, are used to determine the student's rating.

The second trimester is set up for two areas. The metal man does more complex R & R (removal and replacement) of panels, frontend sections, and medium frame and body damage. Quality and flat-rate skills are used for rating of students. The painting area is based on quality and the amount of supervision required to rate the painter in all of the latest methods and modern paints being used.

During the third trimester, emphasis is placed on obtaining full flat-rate skills in all of the basics, and complex methods of metal work and painting. Quality and speed skills are used for final rating of the students.

The three-trimester diploma program totals 1350 hours of instruction, of which 600 hours are supporting courses.

Many students enter this major only after completing the one-trimester Trades/Technologies Preparatory Program.

Automotive Collision Repair students are required to pay a once-only \$60 personal equipment fee; and must also provide their own padlock, shop coveralls, safety glasses or goggles, welding gloves, and disposable paint masks.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>(Hours/Week)</i>
Auto Collision Repair Lab I	15
Auto Collision Repair Theory I	5
Trade Math I	5
Welding I	5
 <i>Trimester II</i>	
Auto Collision Repair Lab II	15
Auto Collision Repair Theory II	5
Trade Math II	5
Welding II	5
 <i>Trimester III</i>	
Auto Collision Repair Lab III	20
Auto Collision Repair Theory III	5
Elective Course	5

COURSE DESCRIPTIONS

AUTOMOTIVE COLLISION REPAIR LAB I

A laboratory practice course designed to give instruction in shop safety, chassis construction, hand and power tool operation, minor fender and body section repairing, trim and hardware replacement, preparing for painting, and basic painting processes.

AUTOMOTIVE COLLISION REPAIR THEORY I

This course gives the fundamental information on body and chassis nomenclature, metal alloy characteristics, electrical wiring systems, uses of grinders and abrasives, metal working techniques, lead and plastic filling, basic painting procedures, and basic estimating.

TRADE MATH I

This course covers basic arithmetical operations: addition, subtraction, multiplication, and division. Whole numbers, common fractions, decimal fractions, surface measurements, and direct measurements are thoroughly covered.

WELDING I

This course gives practical experience in use of the oxyacetylene torch for welding, brazing, and soldering various types and sizes of sheet metal.

AUTOMOTIVE COLLISION REPAIR LAB II

(Prerequisites: All Trimester I Courses) A laboratory practice course which covers body section replacement and alignment, upholstery removal and replacement, spray painting procedures and processes, surface buffing and polishing, frame and body pulls, and basic unitized body alignment.

AUTOMOTIVE COLLISION REPAIR THEORY II

(Prerequisites: All Trimester I Courses) This course provides instruction in frame and panel repair procedures, accessory removal and replacement, finishing procedures and processes, and advanced estimating.

TRADE MATH II

(Prerequisite: Trade Math I) This course provides instruction in the use of ratio and proportion, percentage, rules and formulas, and volume as applied to the automotive collision repair area.

WELDING II

(Prerequisite: Welding I) This course continues development of welding skills relative to typical automotive collision welding problems.

AUTOMOTIVE COLLISION REPAIR LAB III

(Prerequisites: All Trimester II Courses) A laboratory practice course designed for refinement of basic metal work, major body damage, removal and replacement of panels, spot painting, and complete painting to flat-rate standards.

AUTOMOTIVE COLLISION REPAIR THEORY III

(Prerequisites: All Trimester II Courses) This course provides instruction in bid sheet analysis and auditing, parts and labor costs, crash book estimating, and customer relations.

AUTOMOTIVE MECHANICS

(3 or 5 Trimesters)

The Automotive Mechanics Program provides practical and realistic experience which will enable the student to gain the level of occupational skills necessary for successful job entry as a general mechanic or as a specialist.

The program is divided into two areas for students desiring a specialty. Students desiring a general mechanics program would take the prerequisite course in *Engines and Engine Systems* and the two specialties in *Automotive Electrical and Tune-Up* and *Automotive Chassis and Drive Trains*. The general mechanics program is five trimesters while the specialty programs are three trimesters separately. The prerequisite course in *Engines and Engine Systems* is the same for both specialties.

The five-trimester *General Automotive Mechanics Program* totals 2250 hours of instruction, of which 1125 hours are laboratory work and 675 hours are supporting courses.

The three-trimester *Automotive Electrical and Tune-Up* or the *Automotive Chassis and Drive Trains* specialties diploma programs total 1350 hours of instruction each, of which 675 hours are laboratory work and 675 hours are supporting courses.

All courses require a final qualification of performance and a final examination in the area of specialty.

Many students enter this major only after completing the one-trimester Trades/Technologies Preparatory Program.

Automotive Mechanics students must pay a \$60 personal equipment fee upon admission into each specialty program; and must provide their own padlock, and shop coat or coveralls.

AUTO ENGINES AND ENGINE SYSTEMS LAB/THEORY (Required for Each Specialty)

<i>Trimester I</i>	<i>(Hours/Week)</i>
Auto Engines and Engine Systems Lab	15
Auto Engines and Engine Systems Theory	5
Basic Math and Precision Measurements	5
Technical Reading for Automotive Mechanics	5

COURSE DESCRIPTIONS

AUTO ENGINES ENGINE SYSTEMS LAB/THEORY

This course offers instruction in automotive shop safety, basic tools and equipment used by automotive mechanics; engine systems operation and maintenance; engine operation and construction; engine testing and diagnosis; and engine disassembly, inspection, cleaning, reconditioning, reassembly and check-out. Proper shop procedures and job operations are emphasized.

BASIC MATH AND PRECISION MEASUREMENTS

This course will review basic mathematics as required by the class. Precision measurements will be emphasized and practical application will be the main part of the course.

TECHNICAL READING FOR AUTOMOTIVE MECHANICS

This course is to teach the student to read and interpret technical data from automotive shop bulletins, manuals, and trade journals.

Automotive Chassis and Drive Trains

DIPLOMA PROGRAM

<i>Trimester II</i>	<i>(Hours/Week)</i>
Auto Chassis Lab	15
Auto Chassis Theory	5
Auto Chassis Math and Science	5
Elective Course	5
<i>Trimester III</i>	
Automotive Drive Train Lab	15
Automotive Drive Train Theory	5
Automotive Drive Train Math and Science	5
Elective Course	5

COURSE DESCRIPTIONS

AUTO CHASSIS LAB AND THEORY

(Prerequisite: Auto Engines and Engine Systems Lab/Theory) This course offers instruction in the operation, maintenance, and servicing of brake, suspension and steering systems, and front-end alignment. Special emphasis is placed on the proper diagnosis of system operation and the proper shop procedures for a quality job. Tire service, wheel balancing and bearing service are an integral part of the course. Two specialties are developed: brake service and front-end alignment.

AUTO CHASSIS MATH AND SCIENCE

This course integrates the science and math needed for brake hydraulics, friction, front-end geometry, and suspension and steering forces, as they relate to the Automotive Chassis area.

AUTOMOTIVE DRIVE TRAIN LAB/THEORY

(Prerequisite: Auto Chassis Lab/Theory) This course provides instruction in the operation and service of clutches, standard three- and four-speed transmissions, drive lines, and automatic transmissions. Emphasis is placed on diagnosis, trouble-shooting, and proper job procedures. Two specialties are developed: automatic transmissions and drive trains.

AUTOMOTIVE DRIVE TRAIN MATH AND SCIENCE

Gear ratios and applications, hydraulic circuits, planetary gear systems, and torque applications are stressed in this course to correlate directly with the Automotive Drive Train Lab and Theory.

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Automotive Electrical/Tune-Up

DIPLOMA PROGRAM

<i>Trimester II</i>	<i>(Hours/Week)</i>
Automotive Electrical Lab	15
Automotive Electrical Theory	5
Automotive Electric Math and Physics	5
Elective Course	5
<i>Trimester III</i>	
Automotive Tune-Up Lab	15
Automotive Tune-Up Theory	5
Automotive Tune-Up Math and Physics	5
Elective Course	5

COURSE DESCRIPTIONS

AUTOMOTIVE ELECTRICAL LAB AND THEORY

(Prerequisite: Auto Engines and Engine Systems) This course offers instruction in basic automotive electricity, circuits, and accessories. The operation, testing and servicing of batteries, cranking motors and circuits, generators, alternators, regulators and circuits, and the ignition system are the major emphasis in this course. Diagnostic procedures are stressed throughout. An automotive electric specialty is developed.

AUTOMOTIVE ELECTRIC MATH AND PHYSICS

This course is correlated with the Automotive Electrical Lab and Theory. It gives students basic algebra in the use of Ohm's Law and Kirchoff's Laws in the automotive circuits. Practical application problems are used.

AUTOMOTIVE TUNE-UP LAB/THEORY

(Prerequisite: Automotive Electrical Lab and Theory) This course continues the use of automotive electricity in the engine tune-up and emphasizes diagnostic procedures in the engine analysis. The automotive engine tune-up is completed by studying the operation, construction, maintenance and servicing of fuel systems and carburetors, smog control devices, and transistorized electrical systems. Automotive air-conditioning is studied as a separate service unit. Specialties developed within the course are: tune-up, carburetion, and air-conditioning.

AUTOMOTIVE TUNE-UP MATH AND PHYSICS

(Prerequisite: Automotive Electric Math and Physics) This course is correlated with the Automotive Tune-Up Lab and Theory course. The temperature-pressure relationship of gases, fluids in motion and metering of fluids, basic transistor and diode operation, and the relationship of these principles to mechanical and electrical control components are the main points of the course.

CABINET MAKING

(2 Trimesters)

The Cabinetmaking Program is designed to provide practical and realistic experiences which will enable the student to gain the level of occupational skill necessary for successful entry into the construction trades industry.

In the first trimester, students are instructed in the fundamentals of cabinetmaking and woodworking machines. During the second trimester, emphasis is placed on advanced cabinetmaking skills, basic mill-work and finishing, and industrial cooperative training field experiences.

The two-trimester program consists of 900 hours of instruction, of which 450 hours are laboratory and industrial cooperative experiences and 450 hours are supporting courses.

Many students enter this major only after completing the one-trimester Trades/Technologies Preparatory Program.

Cabinetmaking students must pay a once-only personal equipment fee of \$55; and provide their own shop apron, and safety glasses or goggles.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>(Hours/Week)</i>
Cabinetmaking Lab I	15
Cabinetmaking Theory I	5
Trade Math I	5
Blueprint Reading I	5
<i>Trimester II</i>	<i>(Hours/Weeks)</i>
Cabinetmaking Lab II	15
Cabinetmaking Theory II	5
Trade Math II	5
Blueprint Reading II	5

COURSE DESCRIPTIONS

CABINETMAKING LAB I

This laboratory is designed to obtain visual as well as hands-on experiences in wood identification, hand tools, power tools, woodworking machines, and safety as related to woodworking equipment and the cabinet shop. It will also be used to practice the various techniques and methods used in the cabinetmaking industry.

CABINETMAKING THEORY I

This course goes hand-in-hand with the lab class and will be used to present the theory of cabinetmaking. Coverage will include, but not be limited to, safety, wood and its grain structure, wood identification, tool identification, tool care and maintenance, fastening devices, construction problems, joints, gluing, and clamping techniques.

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Cabinetmaking . . . (cont.)

TRADE MATH I

This course covers basic arithmetical operations: addition, subtraction, multiplication, and division. Whole numbers, common fractions, decimal fractions, surface measurements, and direct measurements are thoroughly covered.

BLUEPRINT READING I

This course offers basic instruction in reading and interpreting shop drawings. Emphasis is placed on terminology, dimensions, and visualizing and sketching orthographic and pictorial shop drawings.

CABINETMAKING LAB II

(Prerequisite: All Trimester I courses) This lab covers the more sophisticated skills in cabinetmaking, such as frame and panel construction, cabinet doors, drawers and drawer guides, casework, kitchen cabinets and related parts such as shelves, tops, and interiors. The student also learns the basics of mill-work and finishing. This course includes industrial field training in order to gain experience under actual trade conditions.

CABINETMAKING THEORY II

(Prerequisites: All Trimester I courses) This course is interrelated with the lab sessions, and covers the theory of various construction methods before they are attempted in the lab. Emphasis will be placed on technical problems encountered by students in the lab and the industrial field training.

TRADE MATH II

(Prerequisite: Trade Math I) This course provides instruction in the use of rules and formulas, ratio and proportion, volume, pulley speeds, geometric construction, velocity or surface speed, and lumber measure as applied to the cabinetmaking trade.

BLUEPRINT READING II

(Prerequisites: All Trimester I courses) This course offers instruction in interpreting complete shop drawings, including size definition, coding practices, symbols as applied to the cabinetmaking trade and related architectural plans with emphasis on cabinet elevations, floor plans; and electrical, plumbing and sheet metal symbols.

DATA PROCESSING (COMPUTER OPERATOR) (3 Trimesters)

The Computer Operator Program is designed to provide basic knowledge of computer principles and operation, basic programming principles, and realistic experience which will enable the student to gain the skills necessary for successful employment as a computer operator.

The three-trimester program provides a minimum of 1200 hours of classroom instruction and hands-on experience. The first trimester is structured so a student may change to *Data Processing Technology (Programmer)* the second trimester with a minimum of disruption in his studies.

This Computer Operator Program also provides an alternate track for students who have completed one or more trimesters of the Data Processing Technology course at T-VI, but who find the remainder of the Programmer/Analyst course beyond their aptitudes and/or interest.

DIPLOMA PROGRAM

Course titles and hours per week are in preparation and will be published prior to the starting of the Fall Trimester. In general, materials covered will include (but are not limited to) the following: Algebra, elementary accounting, introduction to computers, RPG programming, mathematics of finance, job control cards and languages (IBM, BPS, DOS, OS — Honeywell Monitor Systems — CDC 6000 JCL's, etc.), tape and disk labels, utility and sort controls and processing, processing error recovery techniques, data handling and security, batch controls, dumps, core messages, console switches and displays, operator messages, sense information analysis, forms handling, printer setups, system cleaning and maintenance, batch and multiprogrammed system operation, supplies and forms inventory, use of run books, interpersonal relations and personnel management.



DATA PROCESSING TECHNOLOGY (PROGRAMMER) (5 Trimesters)

The Data Processing Technology Program is designed to qualify students for employment as data processing programmers with considerable training in systems analysis.

The five-trimester diploma program totals a minimum of 2055 hours of instruction, a substantial portion of which involves laboratory experience in facilities which include an IBM S/360 Model 25 computing system with high speed reader, printer, disk drives, keypunches, sorter, and other up-to-date supporting equipment.

This program is designed to allow the student to specialize in business data processing or technical programming and analysis. Whenever possible, the courses in the different DP areas will be scheduled to permit a student to get training in addition to that required in his selected field of Data Processing.

Entering students with prior experience in data processing work may challenge some courses from the first trimester and, if they are able to demonstrate the required knowledge and skills, may apply for a credit waiver for a portion of Trimester I.

Beginning groups may be offered only in the Fall (1971) and Summer (1972) Trimesters. The Spring (1972) Trimester offering will be based on student interest.

DIPLOMA PROGRAM

	<i>Business</i>	<i>Technical</i>
	<i>(Hours/Week)</i>	<i>(Hours/Week)</i>
<i>Trimester I</i>		
Technical Math I & II	10	10
Accounting I	10	10
Introduction to Computers	5	5
Report Program Generator I	5	5
<i>Trimester II</i>		
Technical Math III/FORTRAN	10	10
Assembler Language Coding I	10	10
Accounting II	5	5
Managerial Accounting	5	5
<i>Trimester III</i>		
Assembler Language Coding II	10	10
Technical Math IV	-	5
Intermediate FORTRAN	5	5
Systems Analysis I	5	5
Management Methods I	5	5

Trimester IV

COBOL I	10	10
Systems Analysis II	5	5
Management Methods II	5	5
Technical Math V	-	5
Report Program Generator II	5	-
Conversational Computers	2	2

Trimester V

Technical Math VI	-	5
COBOL II	5	5
Systems Analysis III	5	5
Management Methods III	5	5
Problem Solution (COBOL)	5	-
Introduction to Systems Program	5	5

COURSE DESCRIPTIONS

ACCOUNTING I

This is an introductory course involving the accounting process and double-entry mechanism, journalizing of business transactions, posting to the ledger, trial balance and financial statements, the complete banking procedure, payroll accounting, merchandise accounting, and the accrual basis of accounting applied to a retail business.

INTRODUCTION TO COMPUTERS

This course provides a review of the history of computers and instruction in memory coding schemes, computer logic and control, flow-charting of computer problems, Boolean logic, basic switching circuits and a sampling of FORTRAN (FORmula TRANslator).

TECHNICAL MATH I-II

A complete review of elementary algebra, this course includes the basic properties of algebra, linear equations and their solutions, signed numbers, algorithms for polynomials, simple functions and their properties, simultaneous equations, exponents and radicals, quadratic equations, and basic trigonometric functions.

REPORT PROGRAM GENERATOR I

This course covers the Unit Record principle as it relates to Report Generator data processing on the computer. Instruction is provided on makeup and use of specifications forms. Operations include card to printer, card to disk, and disk to printer operations, editing capabilities, and strengths and weaknesses of the RPG system.

TECHNICAL MATH III WITH FORTRAN IV

(Prerequisite: Technical Math I-II). This course includes both analytic geometry and trigonometry, and beginning level instruction in FORTRAN. Instruction is provided in analytic geometry of the straight line, circular functions, solutions of trigonometric equations and identities, solution of oblique triangles, and exponential and logarithmic functions. FORTRAN content includes programs relevant to the above mathematical concepts.

Students must achieve passing grades in both the mathematical content and in the programming aspect of this course before advancing to a higher-level in the program.

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Data Processing . . . (cont.)

ACCOUNTING II

(Prerequisite: Accounting I) This course includes instruction in financial statements, corporate accounting, investments, intangible long-lived assets, and the voucher system of accounting.

ASSEMBLY LANGUAGE CODING I

(Prerequisites: Report Program Generator, Introduction to Computers, and Technical Math I-II) Instruction in this course covers assembly language operation codes — RR, RX, RS, SI and SS formats and their related instructions, Base and Index Registers, short and long floating point numbers, addressing, basic coding techniques, core dump organization and format, system written input-output and data conversion routines, direct read and write instructions, 80/80 list programming, input-output overlap with error handling and headings, and student written routines to handle output formatting and editing.

MANAGERIAL ACCOUNTING

(Prerequisite: Accounting I) Concepts covered in this course include procedures used in accounting for acquisition, sale, inventory, and depreciation for a single proprietor, partnership or corporation, concepts and application of reports of the status and condition of the business. The course emphasizes cost accounting, encumbrance accounting and special government reports.

TECHNICAL MATH IV

(Prerequisite: Technical Math III with FORTRAN) A course in analytic geometry including the coordinate line and planes and their properties, equations and their graphs, the circle and its properties, the conic sections and their properties, transformation of coordinates, graphs of second degree equations, and polar coordinates and their graphs.

ASSEMBLY LANGUAGE CODING II

(Prerequisite: Assembly Language Coding I) This assembler language familiarization course includes instruction in program output formatting, editing, punching techniques and multiple card group handling, error handling, subroutine coding techniques, system linkage, disk programming, device and program status words, channel commands and status words, interrupt level status, interrupt level servicing, and device service subroutines.

SYSTEMS ANALYSIS I

(Prerequisite: Successful completion of all courses in Trimester I and II) Business organizations, the systems and methods group, staff and line organization, business and technical procedures writing, coding schemes, the collating sequence, EDP group organization, data security, source data controls, processing controls, output review, editing, the auditor and the audit trail. Preliminary work studies, work analysis, forms analysis, systems flowcharts, systems design and consideration.

MANAGEMENT METHODS I

(Prerequisite: Successful completion of all courses in Trimester I and II) This course covers breakeven analysis, marginal, joint and conditional probabilities under both independence and dependence, additive probabilities, introduction to descriptive statistics, distributions, continuous and discrete variables, histograms, frequency polygons, rank statistics. The mean, median,

mode, variance and the standard deviation. The normal curve, decision making under uncertainty, marginal analysis and applications of the normal probability curve to marginal analysis.

TECHNICAL MATH V

(Prerequisite: Technical Math IV) The content of this course includes the basic concept of limits, derivatives of polynomials, the product, quotient and power rules, applications of derivatives to problems, the differential, integrals, and their application to areas, volumes, centroids, inertia and other applications, and derivatives of basic trigonometric functions. FORTRAN programs are assigned where relevant.

COBOL I

(Prerequisite: Systems Analysis I) This course covers the history of COBOL (Common Business Oriented Language), program divisions, the character set, coding sheets; data condition, procedure, and special names; reserved COBOL words, arithmetic, logical and relational operators, constants, literals, comparisons, elements of a sentence, introduction to Data Division and Procedure Division.

SYSTEMS ANALYSIS II

(Prerequisite: Systems Analysis I) This course includes a detailed study of D.O.S., the utility programs, the disk sort-merge program, service and control programs, file label formats, and all job control cards. An actual business data processing problem is identified and studied. The design and implementation of a new or improved system is started.

MANAGEMENT METHODS II

(Prerequisite: Management Methods I) This course covers the nature of samples, sampling distributions, the Central Limit Theorem, standard error of the mean, finite-universe corrections, making estimates from sample data, small and large samples, estimates and degrees freedom, confidence intervals and their meaning, sample size. Hypotheses, the null hypothesis, alpha and beta risks, Type I and II errors, acceptance regions, power curves. Steps in testing hypotheses. Analysis of variance, the F test. Least squares regression line, coefficients of determination and correlation. Non-linear curve fitting; quadratic, hyperbolic and exponential curve fits. Inventory models, economic order quantities, quantity discounts, economic lot sizes, stock out prevention, lead time, the reorder problem.

CONVERSATIONAL COMPUTERS

(Prerequisite: Systems Analysis I) This course includes the philosophy and techniques of timeshared systems, the BASIC language, man-machine interactive systems, Culler-Fried languages, APL, Computer Assisted Instruction, HELP routines, search and retrieval techniques, data trees, and on-line computer graphics.

REPORT PROGRAM GENERATOR II

(Prerequisite: Assembler Language I) This course contains a review of R.P.G. I and introduces the use of level breaks. It also introduces the use of subroutines. Programs to go from card to disk, and disk to printer are also written, debugged and executed. The assigned programs emphasize practical accounting applications such as accounts receivable, accounts payable, trial balance, inventory, invoice, etc..

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Data Processing . . . (cont.)

TECHNICAL MATH VI

(Prerequisite: Tech Math V) Content of this course includes derivatives of the transcendental functions and their inverses, integration of trigonometric functions, exponential and logarithmic functions, series (Maclauring, Taylor, Fourier, etc.), and basic differential equations. FORTRAN programs are assigned where relevant.

COBOL II

(Prerequisite: COBOL I) This course continues development of programming skills in the COBOL language with emphasis on more complicated sentences, statements and clauses. Content includes special techniques such as indexed sequential, sequential and random file creation, updating and processing. Extensive COBOL edit and file maintenance and processing programs are written, compiled, debugged, and tested.

PROBLEM SOLVING (COBOL)

This course is designed to introduce the techniques and procedures involved in the solution of DP problems and to acclimate students to the real environment encountered in a real Data Processing Department. This will be done by providing the students selected problems to be programmed and documented.

SYSTEMS ANALYSIS III

(Prerequisite: Systems Analysis II) All necessary data collection, refinement and editing procedures for the project started in Systems Analysis II are designed and implemented. Processing programs are written in appropriate languages, checked out and refined into production form. Procedure manuals and run books prepared to document all input, output, forms, programs and procedures.

MANAGEMENT METHODS III

(Prerequisites: Management Methods II and Technical Math V) This course covers vectors, determinants, matrix arithmetic and algebra, the identity matrix, singularity, the inverse of a matrix, Linear programming — graphic techniques, the simplex method, Duality and the Minimax Theorem. Markov processes, the matrix of transition probabilities, equilibrium conditions, absorbing states, applications of the Markov Process. Queuing theory, waiting lines, simulation solutions of queuing problems, randomizing techniques. PERT, work breakdown, time considerations, the Beta Distribution, network adjustment, probability of timely completion. CPM, normal and crash activity times, crashing and uncrashing activities. Reporting and updating PERT & CMP networks and schedules.

INTRODUCTION TO SYSTEMS PROGRAMMING

(Prerequisite: Assembly Language Coding II) This course covers the Disk Operating System, system maintenance, generation, updating and modification, disk dumps, core dumps, formatting of data on mass storage devices, cyclic checks, multiprogramming, core partitions, the supervisor error transients, the DOS utilities, and compiler organization.

DISTRIBUTIVE EDUCATION (CASHIER-SALES) (1 Trimester)

The Distributive Education (Cashier-Sales) Program is designed on a co-operative basis with Albuquerque business firms, in that the students spend a portion of the school day in the cashier-sales classroom/laboratory at the Institute and a certain amount of time at a training station in the business community.

This one-trimester (15 weeks) major, which leads to a certificate for successful completion, includes a minimum of 375 hours of instruction. All students receive 225 hours of classroom instruction, and at least 150 hours of instruction at the business training station.

The Cashier-Sales Laboratory teaches the skills of salesmanship, cash register operation (touch system), and the judgment tasks involving the interpersonal relations aspects of selling.

It is a course for those preparing for or engaged in distributing goods and services to the public, including all retail, wholesale, and service occupations. It offers preparatory instruction for students desiring to explore distribution as a career, seeking a broader knowledge of the principles of free enterprise, wanting consumer information, or building a foundation for continuing education related to distribution or non-distribution occupations.

The goal of the program is to offer instruction in distribution of goods and services as it relates to the present world of retailing. The objective is to prepare individuals for employment or for advancement in a distributive occupation.

Each day during the three-hour Lab segment, emphasis is placed on merchandising mathematics, store salesmanship, principles of retailing, and cash register operation. Some attention is also given to public speaking, personality development, and formulation of proper work attitudes.

At the business training station, where each student may spend 10 to 20 or more hours per week in supervised on-the-job training, there is the opportunity to practice the principles and techniques covered in the classroom.

CERTIFICATE PROGRAM

Course Requirements

	<i>Hours/Week</i>
Cashier-Sales Education	15
Cooperative Training	10-20

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Distributive Education . . . (cont.)



COURSE DESCRIPTIONS

CASHIER-SALES EDUCATION LAB

During the three-hour lab the instructor may or may not teach the same subject schedule each day so that the student may derive maximum benefit from the classroom activities. Since learning the techniques of operating the cash register is a skill subject this instruction and drill will take place every day. The other two hours will be used to cover instruction in merchandising mathematics, store salesmanship, and retailing.

COOPERATIVE TRAINING

Typically, each student is hired by a particular retail businessman who has previously been contacted by the teacher/coordinator. The student trainee is paid and is expected to follow company policy. The instructor and businessman periodically schedule meetings to discuss the progress of the student trainee. Students may spend more than 10 hours per week at their business training station. However, there are times when it is impossible to place all students in work stations because of economic conditions.

DRAFTING TECHNOLOGY (ARCHITECTURAL) (4 Trimesters)

The Architectural Drafting Technology Program provides the student with a background necessary to translate architectural design and related systems into graphic and written form and to perform other architectural functions.

Upon graduation, the individual will find initial employment at various levels within the profession. His choice may be in a variety of fields of architecture, structural, mechanical, or electrical engineering. It is anticipated that many students completing the diploma program will enter continuing education programs while gaining architectural office experience, leading to opportunities at responsible levels within the architectural professional structure.

The four-trimester diploma program totals 1625 hours of instruction, including 690 hours of laboratory instruction and 935 hours of theory and supporting courses. The successful student in this program must be intelligent and motivated and possess a willingness to invest time, study and self-development. The program will be correlated with local architectural professional needs.

Students are required to provide their own drafting leads, lead holders, erasers, drafting powder and special templates.

Many students enter this major only after completing the one trimester Trades/Technologies Preparatory Program.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>(Hours/Week)</i>
Architectural Drafting I	10
Building Materials and Methods	5
Stresses and Strength of Materials	5
Technical Math I-II	10
<i>Trimester II</i>	
Architectural Drafting II	15
Technical Math III	5
Structures	5
Codes, Specifications, and Contracts	2
<i>Trimester III</i>	
Architectural Drafting III	15
Mechanical Equipment Theory	5
Physics	5
<i>Trimester IV</i>	
Estimating and Scheduling	10
Materials Testing Lab/Theory	6
Beginning Plane Surveying	6
English	5

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Architectural Drafting . . . (cont.)

COURSE DESCRIPTIONS

ARCHITECTURAL DRAFTING LAB I

This course introduces the basic skills and techniques used in drafting and begins developing these skills and techniques through the use of exercises simulating actual working problems in architectural drafting. The course also includes isometric drawing, shades and shadows, and mechanical construction of perspective drawings.

BUILDING MATERIALS AND METHODS

This course covers the development, properties and composition of building materials. The course includes application of such materials and sources of technical data to materials and methods problem-solving.

STRESSES AND STRENGTH OF MATERIALS

This course develops an understanding of the basic principles of statics, strength of materials and simple structures. The student begins to develop competence in elementary structural design of steel, wood, and concrete.

TECHNICAL MATH I-II

This course covers basic and advanced algebra concepts, including equations, quadratic and simultaneous equations, complex numbers, logarithms and roots of polynomials. Fundamental concepts of geometry are presented as a descriptive approach to Euclidian geometry.

ARCHITECTURAL DRAFTING II LAB/THEORY

(Prerequisite: Architectural Drafting Lab I) This course emphasizes architectural drawings for residential construction. Among the various construction drawings the student prepares are framing plans for roofs with wood structural members. The student learns to use manufacturers' materials and standard references in developing his drawings, and learns presentation drawing techniques using black and white media.

TECHNICAL MATH III

(Prerequisite: Technical Math I-II) This course is designed to cover the concepts of trigonometry and geometry from an applied approach.

STRUCTURES

(Prerequisite: Stresses and Strength of Materials) This course deals with the determination of stresses induced by loads on structures of wood, steel, and reinforced concrete; selection of appropriate structural members and suitable connections; and loading and conditions causing compression, tension, shear, and bending. The student learns design procedures relating to beams, columns, footings, and other structural members.

CODES, SPECIFICATIONS, AND CONTRACTS

(Prerequisite: Building Materials and Methods) This course familiarizes the student with the organization and structure of building codes and the standards and restrictions within which the construction industry operates. Upon completion of the course, the student must be able to interpret and use specifications; relate construction planning and implementation to proper standards; identify and interpret typical legal documents associated with the construction industry; and be aware of the general operational practices of the architect's, engineer's, or contractor's office.

ARCHITECTURAL DRAFTING III LAB/THEORY

(Prerequisite: Architectural Drafting Lab II) This course emphasizes construction drawings for non-residential buildings. The student prepares framing plans for buildings using steel and reinforced concrete structural members, and prepares presentation drawings in color media. The student also learns to coordinate his work with other members of a project team.

MECHANICAL EQUIPMENT THEORY

In this course the student learns some of the calculations involved in the design of mechanical and electrical systems for buildings, as well as the materials and equipment used in those systems.

PHYSICS

This course covers the basic principles of mechanics and heat with additional study directed to the principles of sound, light, and electricity. Emphasis is placed on construction industry applications and should be closely coordinated with the mechanical equipment laboratory and theory. Upon completion of the course, the student will be able to provide fundamental supporting data for the design and implementation of heating, ventilating, air conditioning, illumination, and electrical systems.

ESTIMATING AND SCHEDULING

(Prerequisite: Contracts, Codes, and Specifications) This course involves extensive coverage of construction estimating, planning and control, and the application of the computer in the construction field. The student is familiarized with methods of labor quantity surveys, resource allocation, and the PERT system of operational scheduling. Upon completion of the course, the student will be able to: estimate and prepare material quantity surveys; prepare operational schedules using the Critical Path Method; and relate computer capabilities to needs of the architectural and construction industry.

MATERIALS TESTING LAB/THEORY

(Prerequisites: Building Materials and Methods, Physics) This course covers testing procedures common to the construction and road building industries. Instruction includes the testing and analyzing of aggregates, concrete, wood, steel, aluminum, glass, plastics, masonry, and other construction materials.

BEGINNING PLANE SURVEYING

(Prerequisite: Technical Math III) This course introduces the basic techniques and materials used in surveying. Instruction involves not only applied experience in the field but supplemental work such as computations and plotting. Upon completion, the student must be able to: identify typical surveying equipment; complete assignments involving leveling, distance, angles, and bearings using transitstadia techniques; interpret contour surveys, topographic maps and construction surveys; and calculate and record supporting data for all applications.

ENGLISH

This course is designed to expand students' communicative skills. The student gains experience in verbal, written, and listening skills while involved in simulated industrial situations. Upon completion, the student will be able to: write objectively in well-structured manner; function in group participation sessions such as planning meetings; research and summarize technical data; present, as well as receive and interpret, verbal and written instructions; and correctly complete resumes and job applications.

DRAFTING TECHNOLOGY (CIVIL TECHNOLOGY) (4 Trimesters)

The Civil Technology Program provides students with job entry skills to qualify them for employment as construction draftsmen, survey aides, foreman trainees, estimators, and materials testing lab technicians.

The four-trimester diploma program totals 1650 hours, including 675 hours of laboratory instruction and 975 hours of theory and supporting courses.

A student can receive a *Certificate in Construction Drafting* after satisfactory completion of all courses in the first two trimesters. This certificate is for those students who terminate their training at the end of the second trimester or before completion of the four-trimester diploma program.

This program will have a beginning group in the Fall Trimester only.

Students must provide their own drafting leads, lead holders, erasers, drafting powder, and special templates.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>(Hours/Week)</i>
Architectural Drafting Lab/Theory	15
Technical Math I-II	10
Building Materials and Methods	5
<i>Trimester II</i>	
Mechanical Equipment Lab/Theory	15
Contracts, Codes, and Specifications	2
Technical Math III	5
Physics w/Statics and Strength of Materials	5
<i>Trimester III</i>	
Structural Drafting Lab	15
Materials Testing Lab/Theory	6
Beginning Plane Surveying	6
<i>Trimester IV</i>	
Estimating and Scheduling	10
Intermediate Plane Surveying w/Cartography	6
English	5
Construction Analysis	5

COURSE DESCRIPTIONS

ARCHITECTURAL DRAFTING I LAB/THEORY

This course introduces the general drafting theory and techniques needed to produce light residential and commercial structures. Upon completion, the student must be able to apply varied drafting practices in completing detailed working drawings involving floor plans, foundations, wall sections, elevations, and interior and exterior details. The student also learns to use manufacturers' materials and standard references in developing his drawings.

TECHNICAL MATH I-II

This course covers basic and advanced algebra concepts. The study of equations is expanded into quadratic and simultaneous equations. Roots of polynomials are also discussed. Fundamental concepts of geometry are presented in the form of a descriptive approach to Euclidian geometry.

BUILDING MATERIALS AND METHODS

This course involves subject matter of two basic kinds. First, detailed study is given to the manufacture and production of building materials so that the student may acquire a knowledge of properties developed during these processes; and then these properties are related to the actual methods of construction and, in some instances, to building design.

MECHANICAL EQUIPMENT LAB/THEORY

(Prerequisite: Architectural Drafting Lab/Theory) In the theory section, the student learns some of the calculations involved in the design of mechanical and electrical systems for buildings, as well as the materials and equipment used in those systems. Upon completion of the lab section, the student must be able to graphically define common heating, air-conditioning, plumbing, waste disposal, and electrical systems for residential and commercial buildings.

CONTRACTS, CODES, AND SPECIFICATIONS

(Prerequisite: Building Materials and Methods) This course familiarizes the student with the organization and structure of building codes and the standards and restrictions within which the construction industry operates. Upon completion, the student must be able to: interpret and use specifications; relate construction planning and implementation to proper standards; identify and interpret typical legal documents associated with the construction industry; and be aware of the general operation practices of the architect's, engineer's, or contractor's office.

TECHNICAL MATH III

(Prerequisite: Technical Math I-II) This course is directed to the concepts of trigonometry, a mathematical area relevant to the civil technician. An applied approach based on surveying and mechanical computational needs is encouraged.

PHYSICS w/STATICS AND STRENGTH OF MATERIALS

(Prerequisite: Technical Math I-II) This course covers the basic principles of mechanics and heat with additional study directed to sound, light, and electricity. Emphasis is placed on construction industry applications and should be closely coordinated with the mechanical equipment laboratory and theory. Upon completion, the student will be able to provide fundamental supporting data for the design and implementation of heating, ventilating, air conditioning, illumination, and electrical systems. This course also includes some basic principles of statics and strength of materials.

STRUCTURAL DRAFTING LAB

(Prerequisite: Mechanical Equipment Lab) This course instructs the student in techniques used in producing framing plans and other structural drawings for buildings framed in wood, steel, or reinforced concrete. Upon completion of the course, the student must be able to do detailing for steel structures and for steel reinforcement in reinforced concrete structures.

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Civil Technology . . . (cont.)

MATERIALS TESTING LAB/THEORY

(Prerequisites: Building Materials and Methods, Physics) This course covers a variety of testing procedures common to the construction and road building industries. Instruction includes the testing and analyzing of aggregates, concrete, wood, steel, aluminum, glass, plastics, masonry, and other construction materials.

BEGINNING PLANE SURVEYING

(Prerequisite: Technical Math III) This course introduces the basic techniques and materials used in surveying. Instruction involves not only applied experience in the field, but supplemental work such as computations and plotting. Upon completion, the student must be able to: identify typical surveying equipment; complete assignments involving leveling, distance, angles, and bearings using transitstadia techniques; interpret contour surveys, topographic maps and construction surveys; and calculate and record supporting data for all applications.

ESTIMATING AND SCHEDULING

(Prerequisite: Contracts, Codes, and Specifications) This course involves extensive coverage of construction estimating, planning and control, and the application of the computer in the construction field. The student learns methods of labor quantity surveys, resource allocation, and the PERT system of operational scheduling. Upon completion, the student will be able to: estimate and prepare material quantity surveys; prepare operational schedules using the Critical Path Method; and relate computer capabilities to needs of the architectural and construction industry.

INTERMEDIATE PLANE SURVEYING

(Prerequisite: Beginning Plane Surveying) This course is directed to advance applications of surveying relevant to the building field. Specific interest is placed in site and route surveys for commercial buildings. Upon completion, the student must be able to: complete a survey of a relatively rugged terrain with definite precision; operate such instruments as odolites, subtense bars, surveying altimeters, and various electronic measuring devices.

ENGLISH

This course expands the student's communicative skills. The student gains experience in verbal, written, and listening skills while involved in simulated industrial situations. Upon completion, the student will be able to: write objectively in a well-structured manner; function in group participation sessions such as planning meetings; research and summarize technical data; present, as well as receive and interpret, verbal and written instructions; and correctly complete resumes and job applications.

CONSTRUCTION ANALYSIS

(Prerequisites: Structural Drafting Lab; Contracts, Codes, and Specifications; Physics) This course incorporates all previous learning experiences in the program into a discussion-oriented study of building design. Designs are analyzed and evaluated in terms of strength and material requirements, functional design, codes and specifications, and feasibility studies to give the student a complete view of the construction process.



DRAFTING TECHNOLOGY (ELECTROMECHANICAL) (4 Trimesters)

The Electromechanical Drafting Technology program produces graduates capable of performing drafting responsibilities, in accordance with typical industrial needs, at varied entry levels. Graduates have a background of conceptual and applied experience to allow them rapid growth and development.

The four-trimester program totals 1680 hours of instruction, including 750 hours of laboratory instruction and 930 hours of drafting theory and supporting courses.

It also provides bi-level employability. The first two trimesters emphasize the electronics drafting function with job opportunities available upon completion. The remainder of the program is directed toward the mechanical aspects to provide versatility and depth for employment in the electromechanical drafting field. A student can receive a *Certificate in Electronics Drafting* after satisfactory completion of all courses in the first two trimesters. This certificate program is for those students who terminate their training at the end of the second trimester or before the completion of the four-trimester diploma program.

The program is somewhat unique as it presents drafting fundamentals in electronics applications; yet, many specialized mechanical drafting and design concepts are an integral part of the curriculum. To graduate a person capable of applying all the concepts presented, the laboratory experiences are multi-conceptual and closely simulate industrial practices.

There will be a Fall Trimester starting group, but subsequent program offerings will be based on employment opportunities and student interest.

Students are required to provide their own drafting leads, lead holders, erasers, drafting powder, and special templates.

Many students enter this major only after completing the one-trimester Trades/Technologies Preparatory Program.

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Electromechanical Drafting . . . (cont.)

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>Hours/Week</i>
Electronics Drafting Lab	10
Introduction to Logic Circuit Design	5
Basic Electronics and Manufacturing Processes	5
Technical Math I & II	10
<i>Trimester II</i>	
Electromechanical Assemblies Lab	10
Electromechanical Assemblies Theory	5
Technical Math III with FORTRAN	10
English	5
<i>Trimester III</i>	
Mechanical Definition Lab	10
Mechanical Definition Theory	5
Mechanical Manufacturing Processes	2
Introduction to Mechanical Design	5
Technical Math IV	5
<i>Trimester IV</i>	
Mechanical Processes Lab	10
Technical Illustration/Graphic Arts	10
Technical Math V	5

COURSE DESCRIPTIONS

ELECTRONICS DRAFTING LAB

This course teaches the student drafting applications incorporating the fundamental concepts of the electrical/electronics field. The student must be able to: (1) utilize correct symbology, designations and layout techniques in accordance with military and ASA standards to describe formal schematics, logic diagrams, wiring layouts, and cabling diagrams, (2) provide necessary supplementary information in an industrial format, (3) perform inking techniques on vellum and polyester film (4) demonstrate freehand and mechanical aided lettering capabilities, and (5) display fundamental drafting capabilities at a quality consistent with industrial standards.

INTRODUCTION TO LOGIC CIRCUIT DESIGN

This course provides the theory for the logic circuit application experiences. The students must be able to: (1) apply basic principles of symbolic logic and design function, (2) identify and describe functional capabilities of computer hardware in graphic applications, and (3) design elementary logic circuitry, primarily of a switching function. This course maintains close coordination with the basic electronics course.

BASIC ELECTRONICS AND MANUFACTURING PROCESSES

This course supplements the Electronics Drafting Lab by providing basic concepts of electricity and electronics relevant to electromechanical drafting.

Priority is centered around elements of circuitry, characteristics and functions of components, typical circuitry applications, and the composition of discrete and integrated circuitry. Upon graduation the students should be able to identify: components and their symbols, the function of the components within a circuit as well as the circuit itself, characteristics of the components, and proper circuit layout and composition. This course also provides a background in materials and processes involving producing and assembling discrete-component parts and integrated circuits. Cable and panel/chassis construction are also studied with an emphasis on numerical controlled tooling in the panel/chassis production.

TECHNICAL MATHEMATICS I-II

This course covers basic and advanced algebra concepts. The study of equations is expanded into quadratic and simultaneous equations. Complex numbers, logarithms and roots of polynomials are additional algebraic concepts discussed. Fundamental concepts of geometry are presented in the form of a descriptive approach to Euclidian geometry.

ELECTROMECHANICAL ASSEMBLIES LAB/THEORY

(Prerequisites: All Trimester I Courses) This course expands the students' experiences in electronic-oriented drafting. A person completing this course will be able to: (1) provide multiview and pictorial representation of components and mechanisms related to the electronics industry, (2) produce manufacturing and layout panel and chassis drawings, (3) produce complete series of printed circuit drawings given a schematic diagram, (4) complete integrated circuit layouts given a logic diagram, and (5) describe cordwood modules, thin-film and hybrid circuits. Students must be ready to produce all applications in a quality acceptable to typical entry level industrial standards.

TECHNICAL MATH III WITH FORTRAN

(Prerequisite: Technical Math I-II) This course is directed to the concepts of trigonometry, an area of mathematics extremely relevant to the draftsman. The course is presented in conjunction with FORTRAN IV programming which may be used by the students as a tool for solving problems requiring the solution of varied angles or trigonometric functions.

ENGLISH

This course enables the students to gain experiences in verbal and written communications which simulate actual industrial situations. Upon completion, the student will have experienced: various personal encounters requiring oral interaction such as job interview as well as oral to written interpretation; developing concise yet comprehensive sentences and paragraphs; researching and summarizing technical data; functional application of technical vocabulary including abbreviations; and completing resumes and applications.

MECHANICAL DEFINITION LAB/THEORY

(Prerequisites: Electromechanical Assemblies Theory/Lab, and Technical Math III with FORTRAN) This course presents the concepts and functional applications of definition techniques in accordance with mechanical drafting standards. The student must be able to prepare drawings requiring any standard system of views and dimensionally define them with respect to design and production capabilities. He or she must also be able to incorporate any technical data relative to manufacturing processes, materials, or hardware definition.

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Electromechanical Drafting . . . (cont.)

MECHANICAL MANUFACTURING PROCESSES

This course enables the students to relate varied production processes to characteristics of a given part. They must be able to identify the required processes and the corresponding equipment for the product based on material characteristics and machine capabilities. Emphasis is placed on providing compatibility between the design function and the production function in terms of required graphic data.

INTRODUCTION TO MECHANICAL DESIGN

(Prerequisite: Technical Math III with FORTRAN) This course coordinates the basic elements of physics with mechanical design applications. The student must be able to identify design considerations of varied materials and mechanisms and provide fundamental data to support the graphic definition. The course relies on the concepts learned in the manufacturing processes course and the Mechanical Definition Laboratory.

TECHNICAL MATH IV

(Prerequisite: Technical Math III with FORTRAN) This course covers the concepts of analytic geometry. The circle, parabola, ellipse, hyperbola, conic sections, and equations of curves are studied in depth, while slope function and parametric equations are introduced.

MECHANICAL PROCESSES LAB

(Prerequisites: Mechanical Definition Theory/Lab, Manufacturing Processes, and Introduction to Mechanical Design) This course is designed to produce versatility in the student. He or she must be able to prepare varied types of drawings directly related to production processes such as casting, forging, welding, forming, and machining using appropriate definition techniques. Consideration is also given to inspection requirements. The students design various tooling components for assigned projects in addition to applying recommended mechanical design concepts to electro-mechanical problems.

TECHNICAL ILLUSTRATION/GRAPHIC ARTS

(Prerequisite: Mechanical Definition Theory/Lab) This course enables students to incorporate modern graphic arts and illustration concepts in electromechanical definition. Application will be directed toward the preparation of multiple three-dimensional representations for use in production drawing supplements, technical publications, installation and assembly drawings, and data description. Students also gain experience in the preparation of photo-drawings, the use of commercially prepared patterns, as well as varied rendering and reproduction techniques.

TECHNICAL MATH V

(Prerequisite: Technical Math IV) This course introduces the fundamentals of calculus. The student studies the binomial theorem, derivatives of algebraic functions, mathematical inductions, and definite and indefinite integrals.

ELECTRONICS TECHNOLOGY

(4 Trimesters)

The Electronics Technology Program prepares students for employment in various areas of the electronics industry. Students who complete the diploma program are thoroughly trained in fabrication, modification, repair, calibration and maintenance of both consumer and industrial electronic equipment or electronic engineering support functions. This program provides the graduate with a thorough foundation in electronic and semiconductor principles which enable him to keep abreast of current developments. The graduate, with experience, becomes a technical specialist in the field of his choice.

The four-trimester diploma program totals 1605 hours of instruction, of which 1125 hours are electronics theory and laboratory work and 480 hours in mathematics and other supporting courses. A student can receive a *Certificate in Electronics Testing* after satisfactory completion of all courses in the first two trimesters. This certificate program is for those students who terminate their electronics training at the end of the second trimester or before completion of the four-trimester diploma program.

Entering students who already possess a strong background in math and have had recent training or equivalent experience in basic electronics may waive the first trimester by examination or other proof of competence.

This Electronics Technology Program will be offered evenings on a half-time basis (13 hours per week) whenever 25 or more applicants request the course.

Many students enter this major only after completing the one-trimester Trades/Technologies Preparatory Program.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>(Hours/Week)</i>
Electronics Theory I	5
Electronics Lab I	10
Technical Math I - II	10
Drafting for Electronics	2
<i>Trimester II</i>	
Electronics Theory II	5
Electronics Lab II	10
Technical Math III with FORTRAN	10
<i>Trimester III</i>	
Electronics Theory III	5
Electronics Lab III	15
Technical Math IV	5
<i>Trimester IV</i>	
Electronics Theory IV	5
Electronics Lab IV	10
Electronic Instruments	5
Technical Math V	5
Principles of Logic Circuits	5

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Electronics . . . (cont.)

COURSE DESCRIPTIONS

ELECTRONICS THEORY I

This course covers direct current electricity as it relates to electronic components and circuitry. Content includes structure of matter, electrical units, basic laws and principles of conductors and semiconductors, network theorems, series and parallel circuits, meters, bridges, and the DC properties of inductance and capacity.

ELECTRONICS LAB I

This laboratory course is concerned with development of basic skills with tools, components, meters, soldering techniques, and schematics. Students perform a minimum of 25 formal laboratory assignments which relate to, and reinforce, the theory and text materials.

TECHNICAL MATH I-II

This course deals with the concepts of beginning and advanced algebra, including linear, quadratic, and polynomial functions; and a complete study of trigonometry from the circular function approach, logarithmic and exponential functions, and the analytic geometry of the straight line.

DRAFTING FOR ELECTRONICS

A survey course in graphic application of schematic, printed circuit, and integrated circuit definitions. Also included are graphic definitions of electrical hardware and specifications.

ELECTRONICS THEORY II

(Prerequisites: Electronics Theory and Lab I, and Technical Math I-II) This course is a study of single phase and polyphase alternating current applied to electronic circuits. Content includes sine wave fundamentals, reactance, impedance, lead and lag current, AC bridges, transformers, saturable core reactors, series and parallel LCR circuits, resonance, filters, and elementary vacuum tube and transistor theory.

ELECTRONICS LAB II

(Prerequisites: Electronics Theory and Lab I, and Technical Math I-II) This laboratory provides additional experiences in fabrication, circuit tracing, project construction, and trouble shooting. Emphasis is placed on the use of the cathode ray oscilloscope as a measuring and diagnostic instrument. The course includes completion of about 20 formal lab assignments which relate to, and reinforce, the topics being covered in the theory course.

TECHNICAL MATH WITH FORTRAN IV

(Prerequisite: Technical Math I-II) This course includes both analytic geometry and trigonometry, and beginning level instruction in FORTRAN (FORmula TRANslator). Instruction is provided in analytic geometry of the straight line, circular functions, solutions of trigonometric equations and identities, solutions of oblique triangles, and exponential and logarithmic functions. FORTRAN content includes programs relevant to above mathematical concepts.

ELECTRONICS THEORY III

(Prerequisites: Electronics Theory and Lab II) Instruction in this course covers fundamental vacuum tube and transistor operation and applications in electronic circuits, bias and coupling methods, distortion, oscillators, transmitters, modulators, antennas, and receiver circuits. In addition, this course involves a comprehensive study of semiconductor theory, diodes, transistors, amplifiers, unijunction transistors, SCR, tunnel diodes, FET, and integrated circuits, and their application to electronic circuitry. Laboratory classes are conducted as an integral part of the theory.

ELECTRONICS LAB III

(Prerequisites: Electronics Theory and Lab II) In this laboratory, the student becomes familiar with several additional test instruments, such as the distortion analyzer, dual trace oscilloscope, and frequency meters. Continued practice in wiring, circuit tracing, and trouble shooting is provided. The course includes completion of 30 formal lab assignments related to, and reinforcing, the work of the theory course.

TECHNICAL MATH IV (ELECTRONICS)

(Prerequisite: Technical Math III with FORTRAN IV) Emphasis in this course is on the use of algebra, geometry and trigonometry in the solution of advanced electronic problems and network analysis. FORTRAN may be used to solve problems where appropriate.

ELECTRONICS THEORY IV

(Prerequisites: Electronics Theory and Lab III) This course provides further study of the theories of pulse circuits, operational amplifiers, and pulse shaping networks, such as differentiating, integrating, multi-vibrator, diode clipping circuits, transmission line theory, and microwave principles. Some aspects of transducers and control circuits used in industry are also included in the course content.

ELECTRONICS LAB IV

(Prerequisites: Electronics Theory and Lab III) Emphasis in this lab is placed on pulse circuitry and microwave circuits and parallels the classroom work to substantiate theory.

ELECTRONICS INSTRUMENTS

(Prerequisites: Electronics Theory and Lab III) This course involves study of selected electronic instruments, together with the procedures for their calibration, maintenance, and repair in accordance with manufacturers' specifications. Among the instruments studied are VOM, VTVM, signal generators, frequency meters, bridges, oscilloscopes, digital readout devices, and tube and transistor testers.

TECHNICAL MATH V

(Prerequisite: Technical Math IV) This course covers the basic concept of limits, derivatives of polynomials, products, quotient and the power rule, applications of derivatives to problems, integrals and their application to solving areas, volumes, centroids, inertia and other applications, and derivatives of basic trigonometric functions. FORTRAN programs are assigned where relevant.

PRINCIPLES OF LOGIC CIRCUITS

(Prerequisites: Electronics Theory and Lab III) This course is a study of the analysis and design of linear and nonlinear wave shaping, switching and logical circuits, including Boolean algebra, binary arithmetic, and their application in control and computing devices, including AND, OR, and NOR logic circuits.

ELECTRONICS ADVANCED STUDIES

A certificate program for electronics technicians desiring education beyond the entry level is offered whenever 13 or more qualified applicants request the course. *This course will also be offered evenings on a half-time basis (13 hours per week) if sufficient applicants (13) request the course.*

Prerequisite is graduation from the T-VI Electronics Technology diploma program or the equivalent.

The course includes a study of materials to prepare for the FCC licensing examination, computer circuitry, fabrication of logic circuits, calibration and alignment of equipment, industrial electronics, advanced mathematics, and additional work on color television. This advanced studies program is specifically designed to the electronics technician for higher level technician positions in the expanding electronics industry.

The program requires 375 hours of instruction, of which 300 hours are directed studies and electronics lab work, and 75 hours are related electives.

CERTIFICATE PROGRAM

<i>Required Courses</i>	<i>Hours/Week</i>
Advanced Electronic Principles	5
Electronics Lab	15
Elective	5

COURSE DESCRIPTIONS

ADVANCED ELECTRONIC PRINCIPLES

This course covers integrated circuitry theory and industrial applications, digital and analog instrumentation, advanced SCR, UJT, and FET circuit analysis, and FCC rules and regulations.

ELECTRONICS LAB (ADVANCED)

The experiments in this lab provide practical experience in the principles of logic and advanced TV and electronic equipment repair, and will provide extensive coverage in the area the student wishes to continue. The experiments will cover the design, fabrication and testing of AND, OR, and NOR counting circuits as well as wave shaping, logical and computer circuits. In the equipment-maintenance labs, emphasis is placed on equipment calibration and alignment, point-to-point testing, parts replacement, and use of manufacturers' specification sheets.

ELECTIVE COURSE

The advanced certificate student should take Technical Math VI or the Advanced Television Repair Lab.

TECHNICAL MATH VI

This course includes differentiation of the transcendental functions, advanced integration techniques, series, elementary differential equations, and their application to science and engineering.

ADVANCED TELEVISION REPAIR LAB

A systematic study of modern shop test instruments and their use in locating and analyzing symptoms in black and white and color television receivers. A logical approach to trouble shooting will be stressed. Instruments studied will include test meters, sweep and marker generators, sweep circuit analyzers, vectorscope, television analyst, color bar generator, and in-circuit transistor tests.

INHALATION THERAPY TECHNICIAN (3 Trimesters)

The Inhalation Therapy Technician program is designed to train persons in the performance of special skills required for treatment, management, control, and care of patients with deficiencies and abnormalities associated with respiration.

The program is three trimesters (one year) in length, and includes 1350 hours of classroom instruction and specialized clinical training in the facilities of a local hospital.

To qualify for entrance into the program, applicants must provide a high school diploma or a high school equivalency certificate, and score satisfactorily on aptitude and achievement tests. Each applicant must also furnish a certificate stating that he or she is free from communicable disease and is in good physical condition (must be able to handle and lift materials up to fifty pounds).

In addition to the \$5 per trimester registration fee, this program also carries a once-only \$65 personal equipment charge which includes the cost of the uniforms which Inhalation Therapy Technician students are required to wear during their training.

This program will have a beginning group in the fall trimester only.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>Total Hours</i>
Orientation to Inhalation Therapy	15
Fundamentals of Inhalation Therapy	60
Physics	75
Anatomy and Physiology I	75
Inhalation Therapy Lab I	150
Clinical Experience I	75
 <i>Trimester II</i>	
Psychology of Patients	15
Anatomy and Physiology II	75
Microbiology	75
Inhalation Therapy Lab II	150
Clinical Experience II	135
 <i>Trimester III</i>	
Administrative Procedures	15
Inhalation Therapy Lab III	150
Clinical Experience III	285

COURSE DESCRIPTIONS

ORIENTATION TO INHALATION THERAPY

This course surveys inhalation therapy as a paramedical profession; personal qualifications and expectations; and professional ethics.

FUNDAMENTALS OF INHALATION THERAPY

Procedures pertinent to inhalation therapy; pulmonary function testing, basic pharmacology; pathology; physics related to respiratory functions and to inhalation therapy; and medical terminology.

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Inhalation Therapy . . . (cont.)

PHYSICS

Physics principles relating to gas laws, kinetic theory, venturi principle, ionic balance, fluids and electrolytes, surface tension, viscosity and density, pressure and flow, evaporation and vapors, and humidification are covered in this course.

ANATOMY AND PHYSIOLOGY I

Elementary general anatomy and physiology are covered, including the body as a whole, cells, tissues, and the various systems.

INHALATION THERAPY LAB I

This laboratory stresses safe practices; regulators and gas supply systems; facial devices; tents, hoods and incubators; and lifting and positioning.

CLINICAL EXPERIENCE I

Students are given observation experiences in hospitals; and acquaintance with hospital departments of inhalation therapy.

PSYCHOLOGY OF PATIENTS

This course includes psychosomatics of chronic pulmonary disease; stress; psychology of treatment; human relations; and Spanish medical conversation.

ANATOMY AND PHYSIOLOGY II

This course provides advanced knowledge of the anatomy and physiology of the circulatory and pulmonary systems, and the nervous system with respect to its relation to the circulatory and pulmonary systems. Comparative cardio-pulmonary anatomy and physiology of the adult, child and infant are also covered.

MICROBIOLOGY

Instruction includes classification of phyla; and specific information regarding microbes related to inhalation therapy patients and equipment.

INHALATION THERAPY LAB II

This lab stresses pharmacology; initial patient contact; patient care arts, isolation techniques; humidification, nebulization and vaporization; intermittent positive and expiratory positive pressure breathing techniques; resuscitators and respirators; analysis and equipment testing; and preventative maintenance.

CLINICAL EXPERIENCE II

This supervised clinical experience is designed to provide competent and efficient administering of the various therapies prescribed by the physician's medical records.

ADMINISTRATIVE PROCEDURES

Principles and practices involved in the supervision and administration of an inhalation therapy department, supply and finance, are included in this course.

INHALATION THERAPY LAB III

This lab includes application and procedures in emergencies, respiratory and cardiac arrest; obstetrics and pediatrics; general, thoracic and neurosurgery; and post operative complications.

CLINICAL EXPERIENCE III

Students are given advanced experience in the hospitals, with emphasis on patients in emergencies, obstetrics, and pediatrics, surgery and post operative recovery, and intensive care units.

MACHINE TRADES

(4 Trimesters)

The Machine Trades Program is designed to qualify students for entry into the machine trades field as machine tool operators.

In the first trimester, students are instructed in the fundamental operations of all machines. During the second, third and fourth trimesters, each student is encouraged to specialize on at least one type of machine in addition to continuing to develop skills on various types of machines.

The four-trimester diploma program totals 1800 hours of instruction, of which 900 hours are laboratory work and 900 hours are supporting courses.

Many students enter this major only after completing the one-trimester Trades/Technologies Preparatory Program.

Machine Trades students must pay a once-only personal equipment fee of \$55; and must provide their own padlock, shop apron, and safety glasses or goggles.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>Hours/Week</i>
Machine Trades Lab I	15
Machine Trades Theory I	5
Trade Math I	5
Blueprint Reading I	5
<i>Trimester II</i>	
Machine Trades Lab II	15
Machine Trades Theory II	5
Trade Math II	5
Blueprint Reading II	5
<i>Trimester III</i>	
Machine Trades Lab III	15
Machine Trades Theory III	5
Trade Math III	5
Production Planning	5
<i>Trimester IV</i>	
Machine Trades Lab IV	15
Machine Trades Theory IV	5
Numerical Control Programming	5
Directed Studies	5

COURSE DESCRIPTIONS

MACHINE TRADES LAB I

This laboratory practice course gives the beginning student instruction in the areas of shop safety, basic benchwork, precision measuring instruments, machine construction, and basic operations on the drill press, milling machine, lathe, and band saw.

MACHINE TRADES THEORY I

This course supports the work accomplished in Machine Trades Lab I. It covers the fundamental principles of various machines such as the lathe, drill press, band saw, and bench grinder, along with benchwork fundamentals.

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Machine Trades . . . (cont.)

TRADE MATH I

This course covers basic arithmetical operations: addition, subtraction, multiplication, and division. Whole numbers, common fractions, decimal fractions, powers and roots, percentages, surface measurements and direct measurements are thoroughly covered.

BLUEPRINT READING I

This course offers basic instruction in reading and interpreting shop drawings. Emphasis is on terminology, dimensions, and visualizing and sketching of orthographic and isometric shop drawings.

MACHINE TRADES LAB I

(Prerequisites: All Trimester I courses) Materials covered in this course are similar to those covered in Machine Trades Lab I except that students will be exposed to the more complex operations of various machine tools. Instructional emphasis will be placed on the engine lathe, tracer lathe, and basic milling machine operations. The student will be allowed to specialize on a particular type of machine if he so desires.

MACHINE TRADES THEORY II

(Prerequisites: All Trimester I courses) This course involves discussions of problems generated in lab sessions to be reviewed daily. Emphasis is placed upon discussion of the technical aspects of toolings as they apply to the various machine tools assigned in the lab.

TRADE MATH II

This course provides instruction in the use of rules and formulas, ratio and proportion, volume, pulley speeds, geometric construction, velocity or surface speed, tapers, screw threads, and indexing as applied to the machine trades area.

BLUEPRINT READING II

This course offers instruction in interpreting complete shop drawings including size definition, coding practices, and symbols as applied to the machine trades area.

MACHINE TRADES LAB III

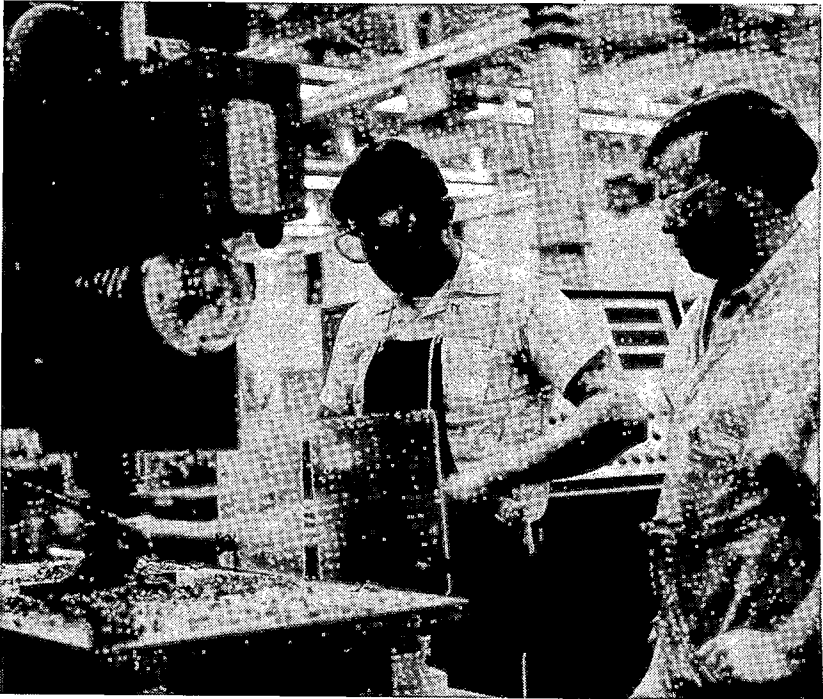
(Prerequisites: All Trimester II courses) Materials covered in this course will be similar to that covered in Machine Trades Lab I and II but in more depth. Major emphasis will be placed on milling machine operations and less time will be spent on lathe work. Students are given practical experience in the utilization of precision measuring equipment as they apply to the inspection of fabricated parts. A student may continue to specialize on machines of his choice.

MACHINE TRADES THEORY III

(Prerequisites: All Trimester II courses) This course involves discussions of problems generated in the lab sessions to be reviewed daily. Instruction is given on the various measuring tools used in inspection, milling machine applications with an introduction to the numerical controlled milling machine, lathe work, and an introduction to basic elements of heat treatment.

TRADE MATH III

This course provides instruction in the use of mathematical operations from the *Machinery's Hand Book*.



PRODUCTION PLANNING

(Prerequisites: All Trimester II courses) This course covers the study of material allocation, methods planning, job routing, time and cost estimating, and production planning terminology.

MACHINE TRADES LAB IV

(Prerequisites: All Trimester III courses) This class deals with advanced lathe work, numerical controlled milling, and more difficult milling machine applications. Industrial processes will be stressed for each.

MACHINE TRADES THEORY IV

(Prerequisites: All Trimester III courses) This course involves discussions of problems generating from work done in the lab sessions to be reviewed daily. Instruction will be given on off-set 4-jaw chuck work, faceplate work, soft jaw work, and acme threads as applied to the lathe. Also milling applications with hole production, types of toolings, and index work.

NUMERICAL CONTROL PROGRAMMING

This course offers instruction in the areas of N/C programming and tape preparation, and trouble shooting of existing equipment.

DIRECTED STUDIES

(Prerequisites: All Trimester III courses) The directed studies include the interpretation, sketching, extensive research of specifications and terms as applied to job shop, production, and Government blueprints.

MEDICAL SECRETARY (1 Trimester)

This course is designed to train students for work in hospitals, clinics, and medical offices as office personnel.

Course work will emphasize medical terminology, procedures, and forms. Transcription machines will be used extensively with additional emphasis placed on bookkeeping and filing procedures.

This program will be offered in the fall trimester only.

PREREQUISITES: An excellent background in spelling, punctuation and dictionary-reference book usage. A minimum typing speed of 50 words per minute is also required.

CERTIFICATE PROGRAM

<i>Course Requirements</i>	<i>Hours/Weeks</i>
Medical Terminology	10
Transcription Machines	5
Bookkeeping	5
Typing/Filing	5

COURSE DESCRIPTIONS

MEDICAL TERMINOLOGY

This course is designed to build a medical vocabulary through the use of word roots, prefixes, suffixes, and combining forms. Emphasis is placed on spelling, meanings, and use of a medical dictionary.

TRANSCRIPTION MACHINES

The student learns how to operate various transcribing machines while transcribing actual medical case histories. Emphasis is also placed on building the medical terminology.

BOOKKEEPING

Instruction is given in basic bookkeeping. Emphasis is placed on the principles of journalizing and posting to the general ledger and posting from the combined cash journal.

TYPING/FILING

Speed building and accuracy drills are stressed in typing. The basics of various filing systems are covered including alphabetic, subject matter, and the numeric system.

MID-MANAGEMENT MARKETING (4 Trimesters)

The Mid-Management major places emphasis on the principles of managing a modern retail business or department therein.

This course includes promotion of goods and services, buying, pricing, accounting, personnel, salesmanship and economics.

The four-trimester diploma program totals 1575 hours of instruction including 600 hours of laboratory work and a minimum of 150 hours on-the-job training.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>Hours/Week</i>
Accounting Principles I Lab	10
Office Machines	5
Accounting Math	5
Introduction to Data Processing	5
<i>Trimester II</i>	
Accounting Principles II Lab	10
Economics of Money and Banking	5
Business Communications	5
Fundamentals of Salesmanship	5
<i>Trimester III</i>	
Principles of Marketing I Lab	10
Business Law	5
Business Systems	5
Principles of Advertising	5
Principles of Finance	5
<i>Trimester IV</i>	
Principles of Marketing II Lab	10
Personnel Management	5
Cooperative Training	10

COURSE DESCRIPTIONS

ACCOUNTING PRINCIPLES I LAB

Concepts and procedures underlying financial accounting are examined. Topics included in this course are: collection and presentation of data, income measurement, accounting for notes and interest, inventories and cost of goods sold, fixed assets and depreciation, manufacturing accounting, payrolls, internal controls, manual, mechanical, and electronic accounting systems.

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Mid-Management . . . (cont.)

OFFICE MACHINES

Instruction is given in the most widely used office machines: 10-key adding machines, rotary, electronic and printing calculators and card punch machines.

ACCOUNTING MATH

This course is intended to give the student a strong background in the basic fundamental operations in arithmetic and to familiarize the student with a wide range of accounting procedures for which mathematics is required. The student preparing to enter the accounting world will have his mathematical skills sharpened through participation in this accounting math course. This course stresses the review of arithmetic fundamentals, equations, and percentages; and also helps develop the theory of accounting, finance, insurance, as well as other math-related business courses.

INTRODUCTION TO DATA PROCESSING

This introductory course covers manual and automated information systems, historical development, definitions, planning and recording data in punched cards and other input media, sorting, collating, tabulating, calculating, control panels, digital and analog computers, internal storage, and the process of using a computer.

ACCOUNTING PRINCIPLES II LAB

(Prerequisite: Accounting I Lab) This laboratory includes instruction in partnership and corporate accounting, long-term investments and liabilities. Analysis and interpretation of financial statements will be studied, along with managerial use of accounting data, the flow of funds and budgeting, as well as tax problems to be considered in the business.

ECONOMICS OF MONEY AND BANKING

This course inquires into the use of money and banking in a society and its relationship to the general economic welfare. The course provides an appreciation for the American Monetary System as it has evolved. The concepts learned are applied in interpreting current economic conditions as noted in the supplementary reading and general news media.

BUSINESS COMMUNICATIONS

The ability to communicate effectively in business is increased by the study of grammar, punctuation, vocabulary, pronunciation, and spelling. Students are required to learn only those functional principles that are used in speaking and in writing.

FUNDAMENTALS OF SALESMANSHIP

The principles, facts, and techniques of selling are explored, along with the development of communications and human relations skills.

PRINCIPLES OF MARKETING I LAB

Included in this lab is an opportunity to learn about the many facets of retailing. Among the areas covered are inventory, credit, buying, services, pricing, sales promotions, and merchandise management.

BUSINESS LAW

This course provides a basic knowledge of law as it applies to all business dealings in our society. Particular emphasis is placed on the Uniform Commercial Code. Practical problems in law are considered and solutions recommended.



BUSINESS SYSTEMS

This course presents the importance of business organization, the internal structure of business, the need for communication, the analysis of business systems, equipment needs and uses. It provides experiences in analysing business conditions, easing problems and recommending solutions.

PRINCIPLES OF ADVERTISING

Designed to acquaint the student with a basic understanding of sales promotion and advertising. Included are procedures, plans, and methods of advertising using the behavioral approach.

PRINCIPLES OF FINANCE

Emphasis is placed on demands for financing through new specialized institutions. An understanding of the financial structure of the economy and the capital markets is sought.

PRINCIPLES OF MARKETING II LAB

(Prerequisite: Principles of Marketing I Lab) This lab is designed to study the total marketing picture from a management point of view. Study will progress from the production of goods to the potential customer.

PERSONNEL MANAGEMENT

This course covers personnel recruitment, training, and leadership; interrelationships between various departments, jobs, and individuals; and employee status and role within an organization. Emphasis is placed on relationship of the personnel department to the total system management.

COOPERATIVE TRAINING

Typically, each student is hired by a particular retail businessman who has previously been contacted by the teacher/coordinator. The student trainee is paid and is expected to follow company policy. The instructor and businessman periodically schedule meetings to discuss the progress of the student trainee. Students may spend more than 10 hours per week at their business training station.

NURSING ASSISTANT (10 Weeks)

The program is designed to train persons in the performance of basic nursing skills required for the care and comfort of the sick, to work in hospitals, nursing homes, public health agencies, medical centers and private medical or dental offices.

The program is ten weeks in length, with six weeks of classroom and laboratory work followed by four weeks of extensive clinical training in a hospital. There are 240 hours of instruction in the program. A certificate is awarded for successful completion.

To enter the program, applicants must take aptitude tests and furnish a certificate stating they are free from any communicable disease.

In addition to the \$5 registration fee, *this course has a \$20 personal equipment fee* which covers the cost of the uniform which the student must wear during training, and required laboratory tests.

CERTIFICATE PROGRAM

<i>Course Requirements</i>	<i>Hours/Week</i>
English	5
Math	5
Nursing Assistant Lab	10-20

COURSE DESCRIPTIONS

ENGLISH

This course stresses basic grammar, punctuation, vocabulary, pronunciation and spelling. The instruction also covers selected readings and special assignments in the nursing field as they relate to nursing assistants' activities.

MATHEMATICS

The course covers basic arithmetical operations using various kinds of numbers in working selected problems related to nursing assistant work.

NURSING ASSISTANT LAB

During the first six weeks, students work in the lab two hours per day, where specialized instruction is provided in theory and application of skills required to care for the sick. Emphasis is placed on behavioral attitudes, meeting the comfort needs of the patient, feeding, bathing, housekeeping, taking temperature and pulse, and reporting data.

During the last four weeks of the course, students receive four hours per day of specialized training in various hospitals throughout the city, during which time application of the skills acquired during the first six weeks is practiced. Considerable testing and evaluating of progress is made throughout this portion of training.

OFFICE EDUCATION

(3 Trimesters)

The Office Education Program is designed to train persons to skill levels with which they can gain employment in clerical, secretarial and stenographic positions.

Office Education is divided into two distinct majors — the clerical major and the secretarial major — and the student must designate which diploma he or she wishes to pursue.

The clerical major, which provides instruction totaling 1200 hours during the three-trimester diploma program, leads to employment in such office positions as typist, clerk-typist, general office worker, file clerk, and receptionist. Stress is placed on developing speed, accuracy, and production rate in the typing skill.

The secretarial major, which has instruction totaling 1275 hours during the three-trimester diploma program, also places emphasis on the typing skill. In addition, the secretarial major adds the shorthand skill, including transcription and speed building.

Entering students who already possess a strong background in math, English, office experience and typing instruction may waive the first trimester by examination. If they demonstrate that they already possess the skill levels of the Trimester I courses, they may enter the diploma program at Trimester II.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>Hours/Week</i>
Typing Lab I	10
Business English	5
Business Math	5
Introduction to Business (<i>clerical</i>)	5
Shorthand I (<i>secretarial</i>)	5
<i>Trimester II</i>	
Typing Lab II	10
Business Letter Writing	5
Office Machines	5
Secretarial Procedures	5
Cashiering (<i>clerical</i>)	5
Shorthand II or Shorthand I (<i>secretarial</i>)	5
<i>Trimester III</i>	
Typing Lab III	15
Introduction to Data Processing	5
Secretarial Accounting	5
Transcription or Shorthand II (<i>secretarial</i>)	5

COURSE DESCRIPTIONS

TYPING LAB I (BEGINNING)

This laboratory covers the typewriter keyboard and machine operable parts, basic knowledge of vertical and horizontal centering, blocked form business letters, postal cards, memos, invoices, and manuscripts.

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Office Education . . . (cont.)

BUSINESS ENGLISH

This course includes a thorough review of grammar, punctuation, and sentence structure. Emphasis is placed on business vocabulary building, spelling, and oral communication skills.

BUSINESS MATH

Instruction provides a thorough review of basic mathematics as pertaining to ratios, percentages, decimals, fractions, and interest.

INTRODUCTION TO BUSINESS

This course gives the students a background of business information on which they can build an understanding of the American economic system, particularly the business sector. Emphasis is placed on the nature and functions of business, consumer efficiency, and business vocabulary. The student learns to recognize that business is more than the manufacturing, transporting, and selling of goods; that it involves relations with people as customers, employers, members of the public, representatives of the government, and owners and managers of business.

SHORTHAND I

This course is for students who have not had any shorthand or do not have an adequate knowledge of shorthand principles. The course is designed to prepare students for Shorthand II in the Office Education curriculum.

TYPING LAB II (INTERMEDIATE)

(Prerequisite: Typing Lab I) This laboratory covers development of typing techniques, speed, and accuracy. It includes preparation of business letters, manuscripts, business forms, statistical reports and other related data.

BUSINESS LETTER WRITING

(Prerequisite: Business English) Emphasis in this course is placed on the writing of business letters, reports, memorandums, and general correspondence that can be handled by the office worker.

OFFICE MACHINES

Instruction is given in the most widely used office machines; 10-key adding machines, rotary, electronic and printing calculators, card punch machines, and duplicating equipment.

SECRETARIAL PROCEDURES

This course provides an insight into the operational and managerial duties of the professional secretary. Training is provided in a wide range of office activities, including filing. Emphasis is placed on all phases of the secretary's personality, the ability to work with people, and the understanding of human relations in business.

CASHIERING

This course covers procedure for handling cash and studies the role of the cashier in meeting the public. Operation of a variety of cash registers is included. Theory of selling, sales approaches, and effective listening are also covered.

SHORTHAND II

(Prerequisite: Shorthand I) Required for the secretarial major, this course develops the student's ability to construct outlines for unfamiliar words; provides development of dictation speed; and extends spelling, punctuation, and word usage.

TYPING LAB III (SIMULATED OFFICE PRACTICE)

(Prerequisite: Typing Lab II) This laboratory is an intensive pre-employment review of the knowledge and advanced clerical skills necessary for positions in business, industry, and government. Emphasis is also placed on transcribing into mailable copy from dictation equipment, and a basic skill in operating the Flexowriter.

INTRODUCTION TO DATA PROCESSING

This course provides an introduction to processing business data by Data Processing machines and is offered to all potential workers in the business field. Data Processing I removes some of the mystery surrounding automation, acquaints the student with the terminology used in this field, and provides some knowledge of preparation of input.

SECRETARIAL ACCOUNTING

(Prerequisite: Business Math) Instruction is given in basic bookkeeping. It incorporates the complete bookkeeping cycle to include the preparation of the balance sheet, income statement, trial balance, worksheet and subsidiary ledgers. Emphasis is placed on the principles of journalizing and posting to the general ledger and posting from the combined cash journal.

TRANSCRIPTION

(Prerequisite: Shorthand II) Designed for the secretarial major, this course develops and increases the transcription speed at the typewriter, and increases dictation speed on new material.



PRACTICAL NURSING

(3 Trimesters)

The Practical Nursing Program prepares students for the official state practical nurse licensing examination. Licensed Practical Nurses are employed in the care of chronically and acutely ill patients, under the supervision of Registered Nurses and physicians, in hospitals and other medical institutions.

The program is three trimesters (one year) in length, and complies with all regulations of the New Mexico State Board of Nursing, which administers the licensing examination.

Practical Nursing has a beginning group only once a year, in the fall trimester, *and applications for the September starting group are accepted only between January 1 and March 15.* Applicants must have either a high school diploma or GED certificate, and must score satisfactorily on both aptitude and achievement tests to be considered for the program.

The diploma program totals 1350 hours of instruction, with the students attending an average of six hours per day Monday through Friday throughout the one-year program. The program is housed in facilities of the School of Practical Nursing at the Presbyterian Hospital Center, and both classroom theory and supervised lab and clinical experiences are obtained at Presbyterian.

The first 15-week time block consists of pre-clinical training in a variety of nursing principles and skills and related theory courses, and the second and third 15-week time blocks are a combination of classroom instruction and supervised experiences in hospital clinical areas related to Medical-Surgical Nursing and Maternal-Child Health Nursing.

In addition to the \$5 per trimester registration fee, *Practical Nursing requires payment of a once-only \$65 personal equipment fee* which covers the cost of required uniforms, cap, identification badge, and other items which become the personal possessions of the student.

DIPLOMA PROGRAM

STUDY UNITS

Total Hours

Nursing Principles & Skills	
Classroom Theory	52
Lab and Clinical Practice	122
Case Conferences	15
Body Structure and Function	45
Personal and Community Health	45
Personal and Vocational Relationships	35
Dosages and Solutions	30
Introduction to Medical-Surgical Nursing	18
First Aid	10
Nutrition	48
Medical-Surgical Nursing	
Classroom Theory	105
Lab and Clinical Practice	380
Case Conferences	15
Maternal-Child Health Nursing	
Classroom Theory	105
Lab and Clinical Practice	220
Case Conferences	15
Directed Studies	90

COURSE DESCRIPTIONS

NURSING PRINCIPLES AND SKILLS

This course introduces the student to the principles and skills involved in the scientific care of the sick. It includes practice in the laboratory situation and gives the student a background for clinical experience. Fundamentals of medications and techniques for administering are included.

BODY STRUCTURE AND FUNCTION

This course is designed to give the student a basic concept of the general plan, structure, and normal function of the body systems and the dependency of one to another.

PERSONAL AND COMMUNITY HEALTH

Personal Health is designed to help the student become aware of the health needs of an individual as a basis for understanding the health needs of the community. Community Health is geared toward health problems in the community and includes communicable disease, social diseases, and the problems of disease control and sanitation. Problems of the aged are also included. Mental health is emphasized in both portions of the course.

PERSONAL AND VOCATIONAL RELATIONSHIPS

The course is designed to help the student adjust to his or her chosen career. It includes study techniques; history and development of nursing and practical nursing; nursing organizations; relationships, both personal and vocational; and the ethical and legal responsibilities involved in practicing nursing. The last four lessons cover career opportunities and responsibilities, and are given toward the end of the year.

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Practical Nursing . . . (cont.)

DOSAGES AND SOLUTIONS

This course is designed to teach the student the mathematics involved in preparing fractional dosages of drugs and in preparing solutions. Methods of converting from one system to another are also included. Safety in calculating and preparing dosages is stressed.

INTRODUCTION TO MEDICAL-SURGICAL NURSING

The course is designed to help the student understand that disease conditions are a deviation from normal body function, and the part that practical nurses play in aiding the physician in diagnosis and treatment. Terminology and common diagnostic tests are discussed, along with the responsibility of the nurse in preparing the patient for tests. Care of the aged and chronically ill is also included.

FIRST AID

This is the basic first aid course, and it is taught by a qualified person from the Red Cross. The student learns the principles of first aid and how to cope with various emergencies.

NUTRITION

This course includes 24 hours of basic nutrition, with emphasis on the importance of nutrients in the normal diet; and 24 hours of study in therapeutic diets and reasons for diet modifications in disease conditions.

MEDICAL-SURGICAL NURSING

This unit helps the student gain an understanding of the common diseases with which she will come in contact in giving nursing care. The symptoms, treatment, nursing care and drugs commonly used are discussed. Also covered is the important part the nurse plays in observing, reporting, and recording. Total patient care, which includes the physical, mental, spiritual and emotional aspects, is stressed.

MATERNAL-CHILD HEALTH

Growth and development is integrated with the study of the sick child, and diseases common to the various age groups are studied. Emphasis is placed on the normal with deviations in the sick child. Obstetrics includes normal processes of the reproductive organs, prenatal and post-partum care, care during labor, and care of the newborn, including the more common anomalies seen in the newborn.

DIRECTED STUDIES

This time block is devoted to supervised study related directly to students' clinical experiences, and to personal and vocational counseling.

WELDING TRADES

(3 Trimesters)

The Welding Trades Program is designed to qualify students for employment in the metals processing industry. Emphasis is placed on oxyacetylene, shielded metal arc, gas tungsten arc, gas metal arc, automatic and semi-automatic cutting, pipe welding, and welding fabrication.

During the first trimester, students are given instruction in oxyacetylene and shielded metal arc welding. In the second trimester, emphasis is placed on gas tungsten arc, gas metal arc, and resistance welding. During the third trimester, emphasis is placed on pipe welding, welding fabrication, materials testing, and field work experiences.

The three-trimester diploma program totals 1350 hours of instruction, of which 750 hours are laboratory and field work, and 600 hours are supporting courses.

Many students enter this major only after completing the one-trimester Trades/Technologies Preparatory Program.

Welding Trades students must pay a once-only \$25 personal equipment fee; and provide a construction workers' helmet upon entry into Welding Fabrication in Trimester III.

DIPLOMA PROGRAM

<i>Trimester I</i>	<i>(Hours/Week)</i>
Welding Lab I	15
Welding Metallurgy I	5
Trade Math I	5
Elective Course	5
 <i>Trimester II</i>	
Welding Lab II	15
Welding Metallurgy II	5
Trade Math II	5
Basic Blueprint Reading	5
 <i>Trimester III</i>	
Welding Fabrication	20
Trade Math III with Advanced Blueprint Reading	10

COURSE DESCRIPTIONS

WELDING LAB I

A laboratory practice class designed to give instruction in welding safety, general tools and equipment, common gases and their properties, welding materials, welding joints, oxyacetylene welding and brazing, metal cutting with gas, and shielded metal-arc welding procedures and processes.

WELDING METALLURGY I

This course gives fundamental information on the working properties of metal, various types of joints, terminology, techniques, and processes.

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Welding . . . (cont.)

TRADE MATH I

This course covers basic arithmetical operations: addition, subtraction, multiplication, and division. Whole numbers, common fractions, decimal fractions, powers and roots, percentages, surface measurements and direct measurements are thoroughly covered.

WELDING LAB II.

(Prerequisites: All Trimester I Courses) A laboratory practice course designed to provide instruction in inert gases, gas arc welding equipment, gas arc welding and power sources, gas tungsten arc torches, gas metal arc torches, electrodes, wire feed systems, and resistance welding.

WELDING METALLURGY II

(Prerequisites: All Trimester I Courses) This course offers instruction in welding methods and processes, structure and properties of metal, temperature changes in welding, effects of alloying elements, variations of fluxes, slags and gases for shielding, and various symbols, weights, conversion factors, and metric reminders.

TRADE MATH II

(Prerequisite: Trade Math I) This course provides instruction in the use of rules and formulas, ratio and proportion, and volume as applied to the welding area.

BASIC BLUEPRINT READING

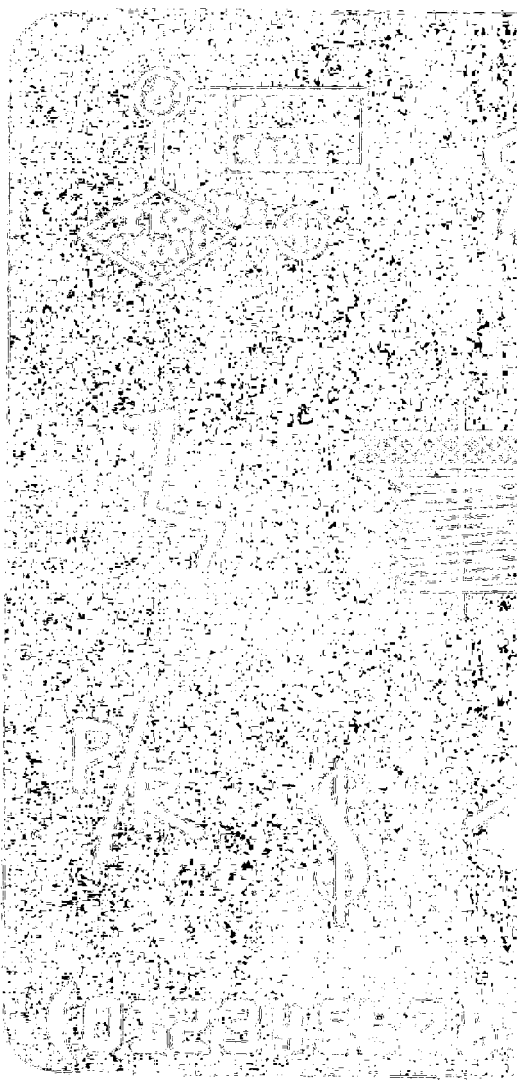
(Prerequisites: Welding I, Welding Metallurgy I, and Trade Math I) This course covers welding symbols, terminology, detailed fittings, and angle layout as applied to the welding area.

WELDING FABRICATION

(Prerequisites: All Trimester II Courses) This course offers instruction in pipe welding, layout and assembly of pipe, field work, production work, shop fabrication, metallurgy, shop management, and materials processing.

TRADE MATH III WITH ADVANCED BLUEPRINT READING

(Prerequisites: Trade Math II and Basic Blueprint Reading) This course provides students with a working knowledge of mathematics and blueprint reading. Instruction includes specifications for various types of pipe and fabrication welding, transferring of measurements from working drawings and blueprints, design considerations, shearing stress, bending stresses in structural members, and descriptive geometry layout.



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