Albuquerque Technical-Vocational Institute

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Bulletin, 1970-71

Bulletin
1970-71

ALBUQUERQUE
TECHNICAL-VOCATIONAL INSTITUTE

525 Buena Vista SE

Albuquerque, N. M. 87106

Telephone 842-3782

Admissions 842-3766

Attendance 842-3791

Evening Division 842-3746

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COURSE DESCRIPTIONS

GENERAL INFORMATION

The Albuquerque Technical-Vocational Institute is a public school providing technical and vocational education for adults. 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 operating and construction funds is a 3-mill district property tax. However, in view 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

The T-VI operates year-around on a trimester plan, with each of the three trimesters providing 15 weeks (75 days) of classes. During 1970-71, the Fall Trimester will begin on September 21, the Spring Trimester on February 1, and the Summer Trimester on May 24. Students wanting to enter the full-time Day Division programs must make application at least 30 days before the start of the trimester in which they wish to begin.

FALL TRIMESTER, 1970

Aug. 21	Day Division Application Deadline
Sept. 3-4	Day Division Registration
Sept. 14-15 (9 a.m. to 9 p.m.)	Evening Division Registration
Sept. 21	Evening Division Classes Begin
Sept. 21	Day Division Classes Begin
Oct. 23	Teacher Inservice Day
Nov. 26-27	Thanksgiving Vacation
Dec. 21-Jan. 1	Christmas Vacation
Jan. 20	Last Day, Day Division
Jan. 22	Last Day, Evening Division

SPRING TRIMESTER, 1971

Jan. 4	Day Division Application Deadline
Jan. 14-15	Day Division Registration
Jan. 25-26 (9 a.m. to 9 p.m.)	Evening Division Registration
Feb. 1	Day Division Classes Begin
Feb. 1	Evening Division Classes Begin
May 14	Last Day, Day Division
May 14	Last Day, Evening Division

SUMMER TRIMESTER, 1971

April 26	Day Division Application Deadline
May 6-7	Day Division Registration
May 17 (9 a.m. to 9 p.m.)	Evening Division Registration
May 24	Day Division Classes Begin
May 24	Evening Division Classes Begin
July 5-9	Summer Recess, Day Classes
Aug. 13	Last Day, Evening Division
Sept. 10	Last Day, Day Division
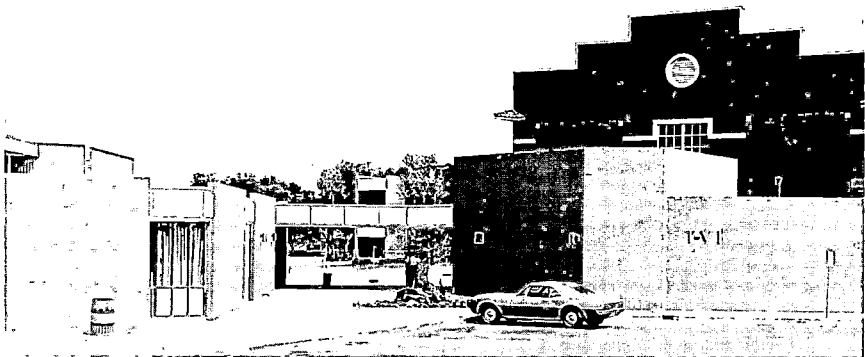
TRIMESTER SCHEDULE

SEPTEMBER, 1970

M	T	W	T	F
21	22	23	24	25
28	29	30		

OCTOBER, 1970

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

Inservice Day —
Oct. 23

NOVEMBER, 1970

M	T	W	T	F
2	3	4	5	6
9	10	11	12	13
16	17	18	19	20
23	24	25	(26	27)
30				

Thanksgiving —
Nov. 26-27

DECEMBER, 1970

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	

Christmas Vacation—
Dec. 21 - Jan. 1

JANUARY, 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)

Trimester Break —
Jan. 21-29

FEBRUARY, 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

MARCH, 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	31		

APRIL, 1971

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

MAY, 1971

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 —
May 17-21

JUNE, 1971

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		

JULY, 1971

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

Summer Recess —
July 5-9

AUGUST, 1971

M	T	W	T	F
2	3	4	5	6
9	10	11	12	13
16	17	18	19	20
23	24	25	26	27
30	31			

SEPTEMBER, 1971

M	T	W	T	F
		1	2	3
6	7	8	9	10

INSTRUCTIONAL PROGRAMS

THE DAY DIVISION program at the Institute provides full-time instruction leading to diplomas and certificates in 13 major areas. These include Accounting, Automotive Collision Repair, Automotive Mechanics, Civil Technology, Data Processing Technology, Distributive (Cashier/Sales) Education, Drafting Technology, Electronics Technology, Hospital Aide, Machine Trades, Office Education, Practical Nursing, and Welding.

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 generally carry a class load of 25 hours or more per week. However, people not wishing to pursue a major course schedule 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 1970-71 *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 Institute maintains a staff of people who devote a major part of their time to operation of a varied testing program. The testing services, which include the General Educational Development (high school equivalency) examination, aptitude and achievement tests, are available free of charge to New Mexico residents whether they are T-VI applicants or not. Counselors are also available to provide guidance services on either an individual or group basis.

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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.

In addition, the applicant must take a series of 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 score on the tests 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.

APPLICATION PROCEDURES

A person wanting to enter the Institute begins by completing the official application form. This form can be obtained 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 counseling, *the completed application form must be submitted no later than 30 days before the start of the trimester.* During 1970-71, these application deadlines are August 21 for the Fall Trimester, January 4 for the Spring Trimester, and April 26 for the Summer Trimester.

When the application has been received, the applicant will be given an appointment for his testing program. Following the completion of the tests he will be given time to meet with a counselor for interpretation of the tests. Other counseling sessions will be scheduled as needed to help the student select the major field in which he will have the best chance to succeed.

The student must also submit a statement of health before he can be admitted to the Institute.

When all of the enrollment procedures have been completed and the $5 registration fee paid, the student can then be formally admitted to the T-VI and will be given instructions to appear on registration day for the trimester.

Some major courses become filled to capacity before the application deadline, so it is important for a person who is interested to make application as early as possible, and pay the registration fee as soon as he is admitted.
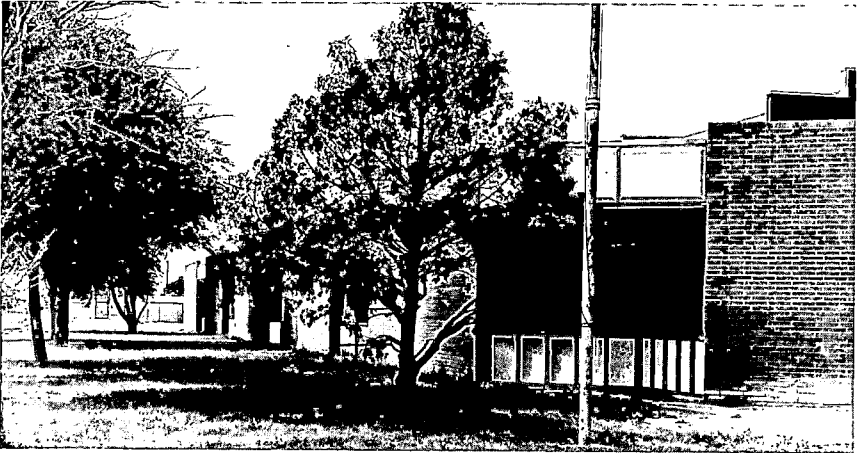
CHARGES AND FEES

TUITION: For non-residents of New Mexico, and for students whose education is fully underwritten by federal training funds, tuition is $300 per trimester. There is no tuition charge for a New Mexico resident, provided he signs the tuition waiver form at the time he registers. Anyone who has paid a tuition fee and withdraws during the first two weeks of a trimester will be refunded the unused part of the tuition fee.

REGISTRATION FEE: There is a $5 registration fee each trimester, which must be paid before the applicant is admitted as a student for the following trimester. Payment of the registration fee reserves the applicant his 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 reservation may be canceled and his place in classes 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 therefore is not refunded once it has been paid. A refund of the registration fee will be made only in the event that the Technical-Vocational Institute cancels an instructional program to which applicants were admitted.

Since many classes fill early — sometimes as much as a trimester in advance — it is wise for the applicant to pay the registration fee as soon as he or she has been approved for a program by the admissions counselor.

BOOKS AND SUPPLIES: There is no charge to Day Division students for their textbooks. These are loaned to the student, but they must be paid for if the student loses or damages them. Evening Division students must buy their textbooks.

Students must buy their own school supplies, which will average about $10 per trimester. Some of the laboratories will also have a small laboratory fee for purchase of materials the students will be using. Some of the Health Occupations also require the student to purchase the appropriate uniforms, so the laboratory fee in those courses is somewhat higher.

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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. A grade of "F" indicates the student is not performing the work of the course at a satisfactory level.

A student who receives an "F" 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.*

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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 of each day, and reported to the Attendance Office. The student's attendance record becomes part of his or her permanent transcript at the Institute.

A student who misses three or more consecutive meetings of any class will be sent by the teacher to the Attendance Office for a conference before the student is allowed to re-enter the class. If the student's attendance record qualifies him for return to the class, he will be given a re-admission slip to present to the teacher. If his attendance record shows an undesirable pattern of many absences, he may be readmitted to class with a warning that his standing at the Institute is in danger, or he may be placed on attendance probation.

Student attendance records are reviewed continually by the Attendance Accountant and counselors, and persons with large numbers of single absences will be called to the Attendance Office for a conference. Again, after consultation, the student may be issued a warning, or may be placed on attendance probation.

ATTENDANCE PROBATION: A student who has been placed on probation for undesirable attendance patterns may be withdrawn from classes for the balance of a trimester if he or she accumulates any further unjustified absences. A student withdrawn for attendance probation violation must go back through the regular admissions process if he or she desires to try to re-enter the Institute the following trimester.

ADMINISTRATIVE REVIEW COMMITTEE: A person withdrawn from classes for violation of attendance probation, or for misconduct, has the right to appeal the involuntary withdrawal. If requested, the appeal will be heard by an Administrative Review Committee made up of faculty, staff members and Institute students appointed by the Vice President. The Administrative Review Committee recommends one of three courses of action to the Vice President: (1) that the withdrawal be made permanent for the balance of the trimester, (2) that the student be readmitted to classes on probationary status, 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 unexcused 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 other 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 Admissions Office in person.

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. Among the forms of educational financal help available are:

VETERANS' BENEFITS: Most full-time Day Division 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 500 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 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 the Institute 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 operated by the Institute through manpower training contracts under which unemployed or underemployed persons receive financial aid while attending school. Examples are projects under the federal Manpower Development Training Act, Concentrated Employment Program, Work Incentive Program, etc. Persons for these programs are selected by the Employment Security Commission and its State Employment Service. Information about such programs can be obtained by contacting the State Employment Service office at 505 Marquette NW.

Financial Assistance...(cont.)

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 be eligible to receive Model Cities scholarship awards while they are full-time students at T-VI. For information, contact Mr. Bill Algire, Project Coach, at 122 Broadway SE (Phone 842-7807).

COLLEGE WORK-STUDY PROGRAM: A limited number of part-time jobs at T-VI are available to Institute students under the federal College Work-Study Program. The program allows the student to work up to 15 hours per week. Information about work-study job openings is available from the Attendance Accountant in the Attendance Office.

STUDENT SERVICES

COUNSELING: The Student Services Division provides assistance to applicants and students through its offices of Admissions, Testing, Counseling, Attendance, Student Records, and Employer Relations. Counselors are available to work with 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 Office 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 facilities for 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 also apply for free city bus tokens at the Admissions 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.*

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FACULTY

AGUILAR, MICHAEL ....Instructor, Mathematics and Data Processing
B.A., M.A., Adams State College

ALBERS, ELIZABETH A. ....Director, Presbyterian Hospital School
of Practical Nursing
B.S., University of Dubuque

ALDINGER, DANNY LEE ....Instructor, Machine Trades
B.S., Bradley University

ANZURES, BENITO ....Director of Attendance
B.A., M.A., Ed. Spec., University of New Mexico

BACA, JOHN E. ....Associate Director, Student Services
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Data Processing
B.S., University of Minnesota

BEDEAU, KAREN A. ....Instructor, Mathematics and Data Processing
B.A., Smith College

BLANK, MARY GRACE ....Instructor, Hospital Aide
R.N., School of Nursing and Health, University of Connecticut

BOLTON, ROBERT C. ....Instructor, Mathematics
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Pittsburg; M.S., Kansas State College

BROWN, RUSSELL W. ....Instructor, Drafting Technology
B.S., University of New Mexico

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B.S., Montana State University

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CLARKE, REED S. ....Instructor, Mathematics and Data Processing
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B.S., Millikin University

DAVIS, RICHARD LEE ....Instructor, Electronics Technology
B.Sc.Ed., M.S., Ohio State University

DORAK, ROBERT ....Supervisor, Department of Trade
and Industrial Education
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DUNKIN, ALBERT C. ....Instructor, Accounting
B.S., University of Albuquerque; M.B.A., Eastern New Mexico
University

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

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Faculty... (cont.)

EISSELE, PETER A. ....Coordinator, Drafting Technology
    B.A., M.A., University of New Mexico

ELWELL, ALBERT ....Instructor, Electronics Technology
    A.B., Phillips University, Enid, Oklahoma; M.A., Ed.D, University
    of Wyoming

EPSTEIN, JUDY ....Instructor, Office Education
    B.S., University of New Mexico

FARTHING, ROBERT ....Coordinator, Welding
    A.S.D., Metals Engineering Institute; B.S., University of New
    Mexico

FORD, LORAN W. ....Instructor, Auto Collision Repair
    B.S., Eastern New Mexico University

FROGNER, PETER O. ....Instructor, Drafting Technology
    B.A., University of Oklahoma

FULLERTON, E. DAN ....Instructor, Mathematics and Data Processing
    B.S., University of Oklahoma; M.A., University of New Mexico

GARCIA, PRESCILIANO ....Instructor, Office Education
    B.A., M.A., New Mexico Highlands University

GILMORE, KATHARINE P. ....Instructor, Office Education
    B.A., Marshall University; M.A., University of New Mexico

GOMEZ, ELMO F. ....Instructor, English
    B.A., University of New Mexico

GUMM, JAMES L. ....Instructor, Drafting Technology
    B.S., Oklahoma State University

HARDIN, JOAN SUE ....Instructor, Practical Nursing
    B.S.N., University of New Mexico

HELGASON, DEAN E. ....Instructor, Auto Mechanics

HERRERA, MIGUEL O. ....Instructor, Mathematics
    B.B.A., University of New Mexico

HERRERA, RICHARD L. S. ....Instructor, Drafting Technology
    B.S., New Mexico Highlands University

HOLMQUIST, ALLAN L. ....Instructor, Mathematics and
                                  Human Relations
    A.A., Olympic College; B.A., M.A., Central Washington State
    College

HORTON, GEORGE J. ....Instructor, Office Education
    B.A., M.A., New Mexico Highlands University

IRONSIDE, BEVERLY A. ....Instructor, Practical Nursing
    B.A., University of Albuquerque

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

KERBY, DALE E. ....Chairman, Department of Office Education
    A.A., Trinidad Junior College; B.A., M.A., Adams State College

LEAVITT, MAX V. ....Counselor
    B.A., M.A., Sacramento State University

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

MAES, JUAN A. ....Instructor, Office Education
    B.A., M.A., New Mexico Highlands University

MARTIN, ROYCE BALCH ....Vocational Counselor,
                                    North Area Office
   B.A., M.A., Baylor University; M.B.A, Ed.D., University of
  New Mexico

MAW, JAMES L. ....Instructor, Mathematics
    A.A., Everitt Community College; B.A., Seattle Pacific College;
    M.Ed., Central Washington State College

MAXSON, WILBUR B. ....Instructor, Electronics Technology
    B.A., State College of Iowa; M.Ed., University of Colorado

MAY, JUNE ANN ....Instructor, Hospital Aide
    B.S., Northern State College of Los Angeles

McKINNEY, THELNESSA ....Instructor, Mathematics
    B.S., Southwestern Oklahoma University

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    B.A., University of New Mexico

MILLER, ROBERT R. ....Coordinator, Auto Mechanics
    B.S., Kansas University; M.A., Colorado State University

MOULDER, ANDREW BAYARD ....Instructor, Electrical Appliance
                                          Repair

NOBLE, RAY T. ....Counselor
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OMNESS, LOREN ....Coordinator, Machine Trades
    B.S., Ferris State College

ROKISKY, RONALD ....Instructor, Office Education
    B.A., Glenville State Teachers College

ROYER, D. DENNIS ....Instructor, Accounting
    B.S., University of Albuquerque; M.B.A., University of New Mexico

RUSSELL, MAXINE E. ....Instructor, Practical Nursing
    B.S., University of New Mexico

SAAVEDRA, LOUIS E. ....Vice President
    B.A., M.A., Eastern New Mexico University

SAHD, JOSEPH ....Instructor, English
    B.A., College of Santa Fe

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

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    B.A., University of Dubuque; B.D., McCormick Seminary;
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Faculty...(cont.)

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SILVA, BARBARA ....Counselor
    B.S., New Mexico State University; M.A., University of New Mexico
SMITH, ALICE L. ....Instructor, Drafting Technology
    Technical Equivalency Program, Sandia Corporation
SMITH, JAMES C. ....Instructor, Auto Mechanics
    B.S., University of New Mexico
SMOKER, DAVID E. ....Director, Student Services
    B.A., M.A., New Mexico Highlands University
SROKA, ANTHONY ....Instructor, Machine Trades
    B.S., Colorado State University; M.S., University of Louisville
STOLET, IRVING J. ....Instructor, Welding
STRABA, MARGARET K. ....Instructor, Hospital Aide
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THOMAS, DONALD R. ....Instructor, Office Education
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TIBBETS, O. JUD ....Supervisor, Department of Technologies
    B.S., West Texas State University
TOLER, JAMES P. ....Instructor, Mathematics and Data Processing
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COURSE OFFERINGS
1970-71
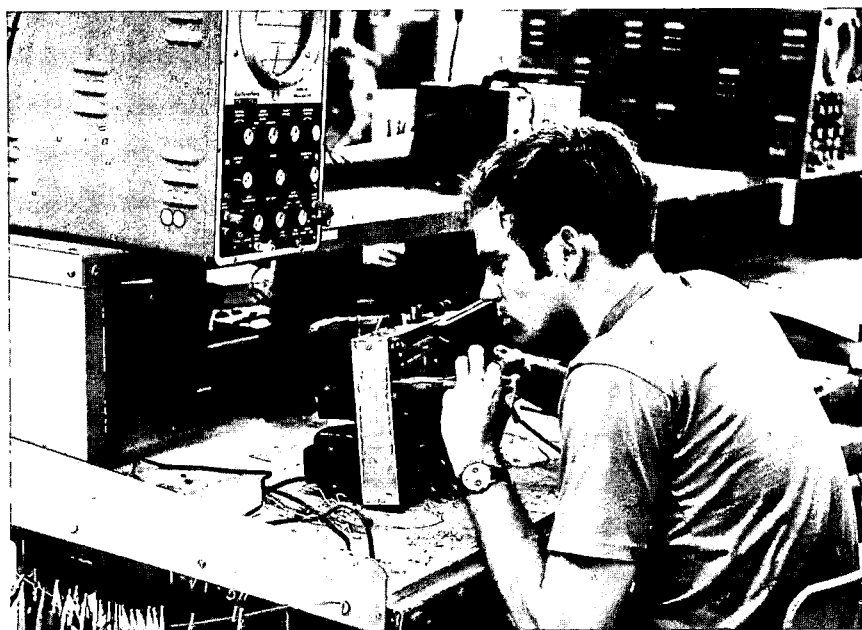
TRADES/TECHNOLOGIES PREPARATORY PROGRAM
(1 Trimester)

This preparatory program is offered for persons who do not qualify, on the basis of the entrance examinations and interviews, to enter directly into one of the major programs.

The Trades/Technologies Preparatory Program is designed to strengthen specific academic weaknesses, and to provide refresher work for those students who have not been in school for some time. At the same time, it begins to prepare persons to qualify for entry into a diploma program or one of the vocational major programs.

The Trades/Technologies Preparatory Program can also be of value to persons required to pass entrance examinations to enter occupational fields other than those offered at the Institute. For example, a person needing review math and English work before taking the entrance examination for the Albuquerque Police Academy would find this program of help.

Students in the Trades/Technologies Preparatory Program are required to take English Review and Mathematics Review courses at their level of preparation, plus two or more courses related most directly to the particular vocational area for which they are preparing.

Course Offerings   *(Hours/Week)*

English Review (required) 5
Mathematics Review (required) 10
Human Relations 5
Introduction to Accounting 5
Introduction to Drafting 5
Introduction to Electronics 5
Job Information 5
Reading Improvement 5
Readings in Technology 5

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. 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.

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Human Relations

Using an exploratory approach, this course studies the special composition of the world of work. It is designed to prepare the student 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.

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 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 electromechanical drafting to other 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.

Job Information

This course explores the world of work and how to select an occupation, how to get and keep a job, human behavior and its relationships to decision-making, and general behavioral patterns.

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.

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.

ACCOUNTING PROGRAM
(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 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

Trimester I   *Hours/Week*

	Hours/Week
Accounting Principles I Lab	10
Introduction to Data Processing	5
Office Machines	5
Accounting Math	5

Trimester II

	Hours/Week
Accounting Principles II Lab	10
Posting Machines/Typing	5
Economics of Money and Banking	5
Report Program Generator *(D.P. minor)*	5
Algebra *(D.P. minor)*	5
Business Communications I *(Business minor)*	5

Trimester III

	Hours/Week
Advanced Accounting Lab	10
Business Law	5
Business Systems	5
COBOL I *(D.P. minor)*	5
Business Communications II *(Business minor)*	5

Trimester IV

	Hours/Week
Cost Accounting	10
Tax Accounting	5
Personnel Management	5
Internal Accounting & Control	5
COBOL II *(D.P. minor)*	5

COURSE DESCRIPTIONS

Accounting Principles I Lab

This is a beginning course designed to cover the accounting cycle. It also includes instruction in the cash and accrual basis of accounting as applied to a retail business, including installment and consignment sales.

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, block diagrams, machine language, symbolic languages, and problem-oriented languages.

Office Machines

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

Accounting Math

This course provides an intensive review and instruction in addition, subtraction, multiplication and division of whole numbers, decimals and fractions, percentage, interest, discounts, tax calculations, and business applications.

Accounting Principles II Lab

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

Posting Machines/Typing

Designed for the business minor in accounting, this course provides instruction in posting machine operable parts and the development of skill on posting machine operations. 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 evolution of money, the mechanics of the creation of money, and credit control.

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 begins with a review of basic math operations, such as whole numbers, fractions, decimals and percentages; and then 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.

Accounting...(cont.)

Business Communications I

Designed for instruction in concise written expression in positive business letters, internal and external memos, building spelling and accounting vocabulary skills.

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.

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.

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.

COBOL I

(Prerequisite: RPG) This course is required for the data processing minor in 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) Oral communication skills are learned and explored through the various types of speech making techniques with emphasis on accounting terminology and reports.

Cost Accounting

(Prerequisite: Advanced Accounting Lab) Instruction is provided in elements of costs, flow of cost, the process-cost system, job-cost system, and development of cost data reports to management.

Tax Accounting

(Prerequisite: Accounting Principles I Lab) This course is designed to develop skill in the preparation of income tax returns, using actual government bulletins and forms.

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.

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 the managerial functions in planning and controlling operations.

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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.

AUTOMOTIVE COLLISION REPAIR PROGRAM
(2 Trimesters)

The Automotive Collision Repair Program is designed to qualify students for employment in the auto paint and body shop service industry. Emphasis is placed on metal work, frame work, front end alignment, and painting.

In the first trimester, students are given instruction and practical experience in both minor repair work and basic auto painting procedures. The second trimester, students are encouraged to specialize as automotive metal workers or auto painters.

The two-trimester diploma program totals 900 hours of instruction, of which 450 hours are laboratory work and 450 hours are supporting courses.

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

Students are required to provide their own padlock, shop coveralls, safety glasses or goggles, and paint mask pads.

DIPLOMA PROGRAM

Trimesier I (Hours/Week)

Auto Collision Repair Lab I	15
Auto Collision Repair Theory I	5
Trade Math I	5
Welding I	5

Trimester II

Auto Collision Repair Lab II	15
Auto Collision Repair Theory II	5
Trade Math II	5
Welding II	5

Auto Collision Repair...(cont.)

COURSE DESCRIPTIONS

Automotive Collision Repair Lab I

A laboratory practice course designed to give instruction in the areas of 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 is designed to cover basic arithmetical operations. These include addition, subtraction, multiplication, and division. Whole numbers, common fractions, decimal fractions, surface measurements, and direct measurements are thoroughly covered.

Welding I

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

Automotive Collision Repair Lab II

(Prerequisites: Auto Collision Repair Lab and Theory I, Trade Math I, and Welding I) 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: Auto Collision Repair Lab and Theory I, Trade Math I, and Welding I) This course provides instruction in the areas of frame and panel repair procedures, accessory removal and replacement, finishing procedures and processes, electrical wiring, 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 MECHANICS
(CHASSIS AND TRANSMISSION)
PROGRAM
(2 Trimesters)

This Automotive Mechanics Program is designed to provide practical and realistic experience which will enable the student to gain the level of occupational skills necessary for successful job entry as a chassis and transmission mechanic into the automotive service industry.

In the first trimester, general chassis servicing, brakes, steering and suspension systems, and front-end alignment are covered. Emphasis is placed on clutches, drive lines, rear axles, and standard and automatic transmissions in the second trimester.

The two-trimester diploma program totals 900 hours of instruction, of which 450 hours are supporting courses.

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

DIPLOMA PROGRAM

Trimester I   *(Hours/Week)*
    Automotive Chassis Lab 15
    Automotive Chassis Theory 5
    Trade Math I 5
    Business Management 5
Trimester II
    Automotive Transmissions Lab 15
    Automotive Transmissions Theory 5
    Trade Math II 5
    Elective Course 5

COURSE DESCRIPTIONS

Automotive Chassis Lab and Theory

This course offers instruction in the operation, maintenance, and servicing of cooling systems, tires, suspension systems, steering systems, lubrication systems, and brake systems along with wheel balancing, bearing service, and front-end alignment. Shop safety, power and hand tool operation, and shop procedures are also emphasized.

Trade Math I

This course is designed to cover basic arithmetical operations. These include addition, subtraction, multiplication, and division. Whole numbers, common fractions, decimal fractions, surface measurements, and direct measurements are thoroughly covered.

Business Management

A basic course designed to cover the areas of business terminology, business organizations and operations, production requirements, distribution of goods and services, managerial controls, labor relations, and finance as they relate to the automotive service industry.

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Chassis/Transmission...(cont.)

Automotive Transmission Lab and Theory
  (Prerequisites: Automotive Chassis Lab and Theory and Trade Math I)
  This course provides instruction in the operation and service of clutches, standard and automatic transmissions, torque converters, universal joints, drive shafts, and differentials. Power flows, principles of operation, parts identification, repair, adjustment, trouble-shooting, and diagnosis are stressed throughout the course.

Trade Math II
  (Prerequisite: Trade Math I) This course provides instruction in the areas of DC electricity, electrical components, tune-up procedures, servicing procedures and trouble-shooting.

AUTOMOTIVE MECHANICS (ELECTRICAL AND TUNE-UP) PROGRAM
(2 Trimesters)

This Automotive Mechanics Program is designed to qualify students for employment in the automotive service industry as mechanics specializing in electrical systems and tune-up.

In the first trimester, basic engine operation, basic electricity, testing equipment, and automotive electrical components are studied. Emphasis is placed on electrical diagnosis, carburetion, smog control devices, transistorized ignition systems and air conditioning systems in the second trimester.

The two-trimester diploma program totals 900 hours of instruction, of which 450 hours are laboratory work and 450 hours supporting courses.

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

DIPLOMA PROGRAM

Trimester I (Hours/Week)

Automotive Electrical Lab	15
Automotive Electrical Theory	5
Automotive Electric Math I	5
Business Management	5

Trimester II

Automotive Tune-up Lab	15
Automotive Tune-up Theory	5
Automotive Electrical Math II	5
Elective	5

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COURSE DESCRIPTIONS

Automotive Electrical Lab and Theory

This course provides instruction in basic automotive electricity, basic engine operation, and basic testing and servicing of batteries, cranking motors, generators, regulators, alternators, and ignition systems. Emphasis is placed on diagnostic procedures and electrical component service.

Automotive Electrical Math I

This course is designed to provide a brief review of addition, subtraction, multiplication, division, common fractions, and decimal fractions prior to a basic study of algebraic operations to solve specific Ohm's Law problems used in automotive electricity applications.

Business Management

A basic course designed to cover the areas of business terminology, business organizations and operations, production requirements, distribution of goods and services, managerial controls, labor relations and finance as they relate to the automotive service industry.

Automotive Tune-Up Lab and Theory

This course is designed to offer instruction in automotive electrical diagnosis, carburetion, smog control devices, electrical wiring and accessories, electrical component parts, transistorized electrical systems and air conditioning systems.

Automotive Electrical Math II

This course continues using algebraic operations to solve problems involving volume, pressure, and circuit conditions. Principles of Pascal's Laws, Boyle's Laws, and Kirchhoff's Laws are applied to the automotive tune-up area.

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CIVIL TECHNOLOGY PROGRAM
(4 Trimesters)

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

The four-trimester diploma program totals 1575 hours of instruction, including 675 hours of laboratory instruction and 900 hours of theory and supporting courses. A student can receive a certificate in construction drafting after the first two trimesters of the program.

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

DIPLOMA PROGRAM

Civil Technology I   *(Hours/Week)*
     Architectural Drafting Lab/Theory 15
     Tech Math II 5
     Building Materials and Methods 5
Civil Technology II
     Mechanical Equipment Lab/Theory 15
     Contracts, Codes, and Specifications 2
     Tech Math III 5
     Physics 5
Civil Technology III
     Structural Drafting Lab 10
     Materials Testing Lab/Theory 6
     Tech Math IV 5
     Beginning Plane Surveying 6
Civil Technology IV
     Estimating and Scheduling 10
     Intermediate Plane Surveying 6
     English 5
     Construction Analysis 5

COURSE DEFINITION

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 presentation and detailed working drawings involving floor plans, foundations, framing, wall construction, and internal and external details; and be able to use manufacturers' materials and standardized tables to supplement his plans. Emphasis is placed on application based on planning, appropriate construction methods and aesthetics.

Technical Math II

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

Building Materials and Methods

This course is intended to prepare each graduate to associate the physical properties of construction materials with the manner in which they are involved in using these materials.

Mechanical Equipment Lab/Theory

(Prerequisite: Architectural Drafting Lab and Theory) This course involves the study of materials and equipment used in mechanical and electrical systems of buildings. Upon completion of the course the student must be able to graphically define common heating, ventilating, air conditioning, plumbing, water supply, drainage, and electrical systems for residential and commercial buildings as well as make appropriate selections of necessary equipment.

Contracts, Codes, and Specifications

(Prerequisite: Building Materials and Methods) This course offers a detailed study of the standards and restrictions within which the construction industry operates. Upon completion of the course, the student must be able to: interpret, prepare, 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.

Technical Math III

(Prerequisite: Technical Math 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

(Prerequisite: Technical Math II) 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.

Structural Drafting Lab

(Prerequisite: Mechanical Equipment Lab/Theory) This course involves the study of steel-frame construction with a heavy emphasis on commercial structures. Upon completion of the course the student must be able to prepare a complete set of working drawings for a steel frame structure, and be able to incorporate fundamental elements of design in the layout and provide any supplemental data required.

Materials Testing Lab/Theory

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

Civil Technology...(cont.)

Technical Math IV

(*Prerequisite: Technical Math III*) 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.

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 of this course, 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 a rather extensive coverage of construction estimating, planning and control, and the application of the computer in the construction field. Upon completion of the course the student will be able to: estimate and prepare material and labor quantity surveys; determine equipment costs; prepare operational schedules using the Critical Path Method and PERT System; and relate computer capabilities to needs of the architectural and construction industry.

Intermediate Plane Surveying

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

English

This course is designed to expand the students' communicative skills. The student gains experience in verbal, written, and listening skills while involved in simulated industrial situations. Upon completion of this course, 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; and Physics*) This course is designed to incorporate all previous learning experiences in the program into a discussion oriented study of building design. Designs are analyzed and evaluated in terms of static and strength and material requirements, functional design, asthetic values, codes and specifications, and feasibility studies to give the student a complete view of the construction process.

DATA PROCESSING PROGRAM
(5 Trimesters)

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

The five-trimester diploma program totals 1980 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.

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 will be offered only in the Fall (1970) and Summer (1971) trimesters.

DIPLOMA PROGRAM

Trimester I (Hours/Week)

Accounting I 5
Introduction to Computers 5
Technical Math I-II 10
Report Program Generator 5

Trimester II

Technical Math III with FORTRAN IV 10
Assembler Language Coding I 10
Accounting II 5

Trimester III

Technical Math IV with FORTRAN IV 10
Assembler Language Coding II 10
Systems Analysis I 5
Management Methods I 5

Trimester IV

Technical Math V 5
Advanced FORTRAN 5
COBOL I 5
Systems Analysis II 5
Management Methods II 5
Conversational Computers 2

Trimester V

Technical Math VI 5
COBOL II 5
Systems Analysis III 5
Management Methods III 5
Introduction to Systems Programming 5

(CONTINUED NEXT PAGE)

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Data Processing. . . (cont.)

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, flowcharting of computer problems, Boolean logic, basic switching circuits and a sampling of FORTRAN.

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

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 (FORmula TRANslator). 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.

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 formating and editing.

Accounting II

(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 with FORTRAN

(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. 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.

Assembly Language Coding II

(Prerequisite: Assembly Language Coding I) This assembler language familiarization course includes instruction in program output formating, 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 considerations.

Management Methods I

(Prerequisite: Successful completion of all courses in Trimester I and II) Instruction is provided in breakeven point, breakeven analysis, introductory probability, additive and multiplicative probability, the normal probability curve, standard deviation, marginal analysis, Economic Order Quantity (EOQ), inventory control, economic lot size, reorder points, and elementary descriptive statistics.

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.

Data Processing...(cont.)

Advanced FORTRAN

   (Prerequisite: Technical Math IV with FORTRAN) This course includes selected problems and techniques using two and three dimensional arrays, common equivalence and externals. A systematic investigation is made of error propagation and techniques to minimize and control errors. Linkage and calling techniques for overlay of core resident programs implementing other languages is included.

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 an actual work study, system investigation and the design and implementation of a new or improved system, related programming in an appropriate computer language, and all necessary edit, batch and security controls.

Management Methods II

   (Prerequisite: Management Methods I) This course covers vectors, determinants, matrices, graphic methods of linear programming, development of Economic Order Quantity (EOQ), Economic Lot Size (ELS) and inventory control formulas using calculus, review of descriptive statistics, coefficients of correlation and determination, least squares fits, exponential and hyperbolic fits, linear regression, sampling theory, sample size; testing the hypothesis, and alpha and beta risks.

Conversational Computers

   (Prerequisite: Systems Analysis I) This course includes the philosophy and techniques of time-shared 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.

Technical Math VI

   (Prerequisite: Tech Math V) Content of this course includes derivatives of the transcendental functions and their inverses, integration of trigonometric and inverse 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.

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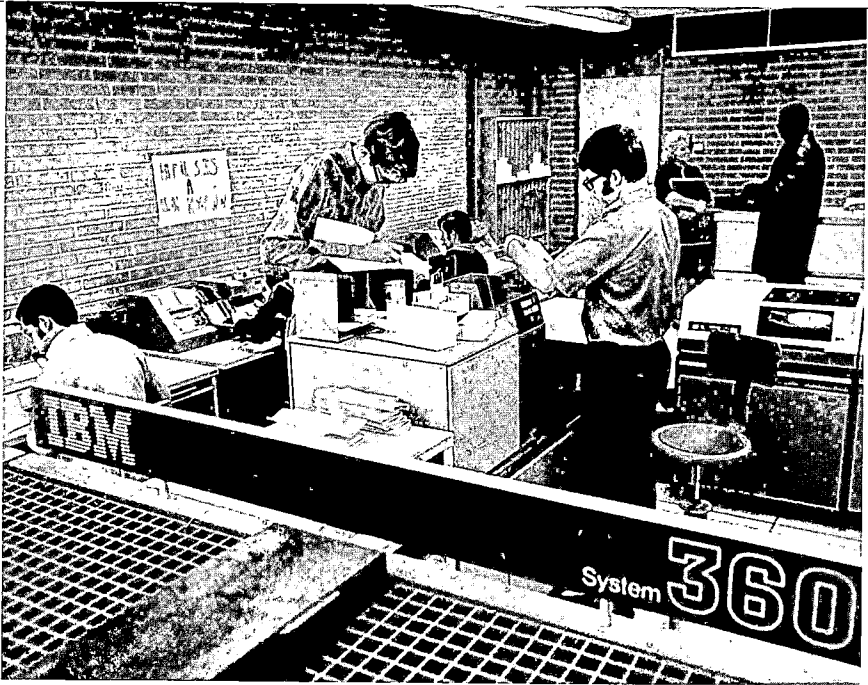
Systems Analysis III

(*Prerequisite: Systems Analysis II*) This course continues study and work on an actual systems design. Direct access storage, tape storage, backup methods. Content includes procedures, programming and documentation standards, run book preparation and program checkout techniques.

Management Methods III

(*Prerequisite: Management Methods II and Technical Math V*) This course includes instruction in PERT, CPM, linear programming, slack, surplus and artificial variables, and the simplex algorithm. Course content also includes the theory of games, saddle points, pure and mixed strategies, value of the game, linear programming game solutions, duality, Markov chains, absorbing states, and Queuing theory.

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)
PROGRAM
(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	(Hours/Week)
Cashier-Sales Education	15
Cooperative Training	10-20
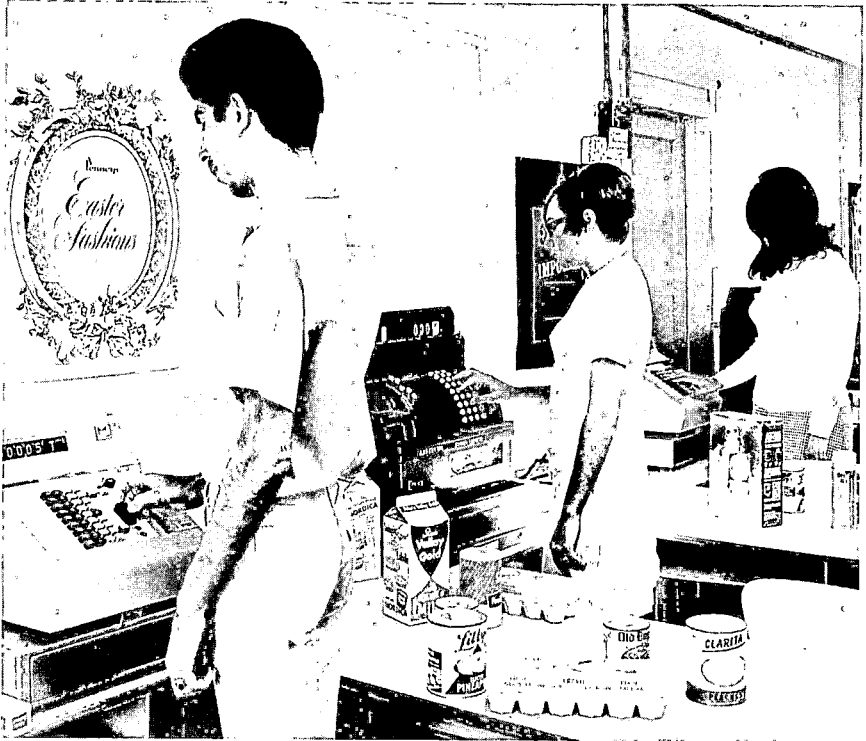
COURSE DESCRIPTIONS

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.

ELECTROMECHANICAL DRAFTING TECHNOLOGY PROGRAM
(4 Trimesters)

The Electromechanical Drafting Technology Program is designed to produce graduates capable of performing drafting responsibilities in accordance with typical industrial needs at varied entry levels with a background of conceptual and applied experiences to allow rapid growth and development.

The four-trimester program includes 750 hours of laboratory instruction and 885 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.

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.

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

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

DIPLOMA PROGRAM

Trimester I   (*Hours/Week*)

    Electronics Drafting Lab 10
    Logic Circuit Design 5
    Basic Electronics 5
    Technical Math II 5
    Electronics Manufacturing Processes 2

Trimester II

    Electromechanical Assemblies Lab 10
    Electromechanical Assemblies Theory 5
    Technical Math III with FORTRAN 10
    English 5

Trimester III

    Mechanical Definition Lab 10
    Mechanical Definition Theory 5
    Mechanical Manufacturing Processes 2
    Introduction to Mechanical Design 5
    Technical Math IV 5

Trimester IV

    Mechanical Processes Lab 10
    Technical Illustration/Graphic Arts 10
    Technical Math V 5

Electronics Drafting Lab

This course is designed to enable the student to complete 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 in a quality conducive with industrial standards.

Logic Circuit Design

This course is designed to provide the theory for the logic circuit applications in experiences. The students must be able to: (1) apply basic principles of symbolic logic, 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 requires close coordination in curriculum with the basic electronics course.

Basic Electronics

This course supplements the electronics drafting lab by providing some 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.

Technical Mathematics II

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

Electronic Manufacturing Processes

This course provides the student with 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.

Electromechanical Drafting...(cont.)

Electromechanical Assemblies Lab and Theory
   (Prerequisites: Electronics Drafting Lab, Logic Circuit Design, Basic Electronics, Technical Math II, and Electronics Manufacturing Processes) This course is designed to expand 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 Mathematics III with FORTRAN
   (Prerequisite: Technical Math 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 of the course 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 and Theory
   (Prerequisites: Electromechanical Assemblies Theory and 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.

Mechanical Manufacturing Processes
   This course is designed to enable 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 is intended to coordinate 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 Mathematics IV

(Prerequisite: Technical Math III with FORTRAN.) This course is delegated to 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 and 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. Considerations are also given to inspection requirements. The students are required to design various tooling components for assigned projects in addition to applying recommended mechanical design concepts to electromechanical problems.

Technical Illustration/Graphic Arts

(Prerequisite: Mechanical Definition Theory and Lab) This course is designed to enable 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. The students will also gain experience in the preparation of photo-drawings, the use of commercially prepared patterns, as well as varied rendering and reproduction techniques.

Technical Mathematics 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.

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ELECTRONICS TECHNOLOGY PROGRAM
(4 Trimesters)

The Electronics Technology Program is designed to prepare 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 enables 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.

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

DIPLOMA PROGRAM

Trimester I   *(Hours/Week)*

Electronics Theory I	5
Electronics Lab I	10
Technical Math I-II	10
Drafting for Electronics	2

Trimester II

Electronics Theory II	5
Electronics Lab II	10
Technical Math III with FORTRAN	10

Trimester III

Electronics Theory III	5
Electronics Lab III	15
Technical Math IV	5

Trimester IV

Electronics Theory IV	5
Electronics Lab IV	10
Electronic Instruments	5
Technical Math V	5
Principles of Logic Circuits	5

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 to 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 I, Electronics 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 I, Electronics Lab I, and Technical Math I-II) This laboratory provides additional experiences to the student 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: Techncial Math I-II) This course includes both analytic geometry and trigonometry, and beginning level instruction in FOR-TRAN (FORmula TRANslator). Instruction is provided in analytic geometry of the straight line, circular functions, solutions of trignometric equations and identities, solutions of oblique triangles, and exponential and logarithmic functions. FORTRAN content includes programs relevant to above mathematical concepts.

Electronics Theory III

(Prerequisite: Electronics Theory II and Electronics 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 Technology...(cont.)

Electronics Lab III

(Prerequisite: Electronics Theory II and Electronics 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) The 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 III and Electronics Lab III) Instruction in 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 crcuits used in industry are also included in the course content.

Electronics Lab IV

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

Electronics Instruments

(Prerequisites: Electronics Theory III and Electronics 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 III and Electronics Lab III) This course is a study of the analysis and design of linear and non-linear 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.

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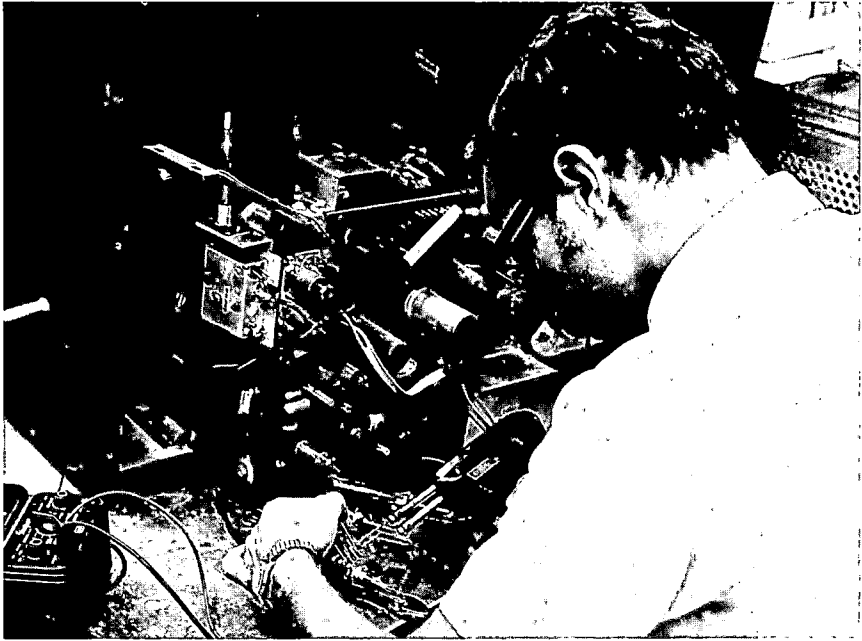
ADVANCED STUDIES IN ELECTRONICS
(1 Trimester)

A certificate program for electronics technicians desiring education beyond the entry level is offered *whenever 13 or more qualified applicants request the course.* Prerequisite for the course 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.

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

Required Courses *(Hours/Week)*

Directed Studies 5

Electronics Lab 15

Elective 5

Advanced Electronics...(cont.)

COURSE DESCRIPTIONS

Directed Studies

(Prerequisite: Electronics Technology Program diploma) The directed studies will include FCC rules and regulations, integrated circuit theory, servomechanisms, multiplexing principles, and computer circuitry.

Electronics Lab (Advanced)

(Prerequisite: Electronics Technology Program diploma) The experiments in this laboratory are designed to 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

(Prerequisite: Electronics Technology Program diploma) 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

(Prerequisite: Electronics Technology Program diploma) 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.

HOSPITAL AIDE PROGRAM
(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 $15 personal equipment fee which covers the cost of the uniform which the student must wear during training.

CERTIFICATE PROGRAM

Course Requirements	(Hours/Week)
English	5
Math	5
Hospital Aides 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 nurses aides' activities.

Mathematics

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

Hospital Aides 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.

MACHINE TRADES PROGRAM
(3 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 and third trimesters, each student is encouraged to specialize in at least one type of machine in addition to continuing to develop skills on all types.

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 Trades/Technologies Preparatory Program.

Students are required to provide their own padlock, shop apron, steel rule and safety glasses or goggles.

DIPLOMA PROGRAM

Trimester I (Hours/Week)

Machine Trades Lab I 15
Machine Trades Theory I 5
Trade Math I 5
Blueprint Reading I 5

Trimester II

Machine Trades Lab II 15
Machine Trades Theory II 5
Trade Math II 5
Blueprint Reading II 5

Trimester III

Machine Trades III 15
Machine Trades Theory III 5
Trade Math III 5
Numerical Control Programming 5

COURSE DESCRIPTIONS

Machine Trades Lab I

A laboratory practice course designed to give 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, band saw, and shaper.

Machine Trades Theory I

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

Trade Math I

This course is designed to cover basic arithmetical operations. These include 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

Offers basic instruction in reading and interpreting shop drawings. Emphasis is on terminology, dimensions, and visualizing and sketching orthographic and isometric shop drawings.

Machine Trades Lab II

(*Prerequisites: Machine Trades Lab and Theory I, Trade Math I, and Blueprint Reading I*) 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. Emphasis will be placed on an introduction to the numerical controlled milling machine, the tracer lathes, the surface grinder, and the tool and cutter grinders. The student will be allowed to specialize on a particular type of machine if he so desires.

Machine Trades Theory II

(*Prerequisites: Machine Trades Lab and Theory I, Trade Math I, and Blueprint Reading I*) Materials covered in this course will involve discussions of problems generated in lab sessions to be reviewed daily. Emphasis is placed upon discussion of the technical aspects of the various 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: Machine Trades Lab and Theory II, Trade Math II, and Blueprint Reading II*) Content covered in this course will be similar to that covered in the Machine Trades Labs I and II, but in more depth. The development of industrially-applied techniques will be emphasized. 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. In addition, turret lathe set-up, N/C (milling and drilling) applications, and introduction to heat treating is emphasized.

Machine Trades Theory III

(*Prerequisites: Machine Trades Lab and Theory II, Trade Math II, and Blueprint Reading II*) Instruction is given on the various measuring tools used in inspection, tooling used for turret lathe operations, and basic elements of heat treatment.

Trade Math III

This course is designed to provide instruction in the use of mathematical operations from the *Machinery's Hand Book.*

Numerical Control Programming

This course is designed to offer instruction in the areas of N/C programming and tape preparation, and an introduction to computer programming of N/C tapes and trouble shooting of existing equipment.

OFFICE EDUCATION PROGRAM
(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 transcripton 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

Trimester I   (*Hours/Week*)

Typing Lab I	10
Business English	5
Business Math	5
Introduction to Business (clerical)	5
Shorthand I (secretarial)	5

Trimester II

Typing Lab II	10
Business Letter Writing	5
Office Machines	5
Secretarial Procedures	5
Cashiering (clerical)	5
Shorthand II or Shorthand I (secretarial)	5

Trimester III

Typing Lab III	15
Introduction to Data Processing	5
Secretarial Accounting	5
Transcription or Shorthand II (secretarial)	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.

Business English

This course include a thorough review of grammar, punctuation, and sentence structure. Emphasis is placed on business vocabulary bulding, 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

Designed for the clerical major, this course provides a basic understanding of the democratic system of free enterprise, with emphasis on the consumer world, everyday business transactions, employee and citizen obligations.

Shorthand I

This is a beginning shorthand course teaching the Gregg Diamond Jubilee Series Shorthand. Included is the shorthand alphabet and principles of reading, writing, spelling, vocabulary, and punctuation. It is required for the secretarial major.

Typing Lab II (Intermediate)

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

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Office Education. . .(cont.)

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
   (Prerequisite: Business Math) Instruction is given in the most widely used office machines: Stencil and fluid duplicators, 10-key adding machines, rotary, electronic and printing calculators and card punch machines.

Secretarial Procedures
   This course provides an insight into the role and duties of the various office workers. Additional emphasis is placed on poise, charm, and telephone manners. A block of time is devoted to the teaching of filing — alphabetic, numeric, geographic, and subject.

Cashiering
   This course covers procedures 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.

Introduction to Data Processing
   This course is an introduction to the field of automated data processing and the types of office jobs that lend themselves to the field. Emphasis is placed on the various input media and the importance of the office worker in this area.

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 PROGRAM
(3 Trimesters)

The Practical Nursing Program prepares students for employment in the care of chronically ill or acutely ill patients in hospitals, under the supervision of registered nurses or physicians.

The program is three trimesters (one year) in length, and complies with the regulations of the State Board of Nursing. *Beginning groups are offered only in the Fall Trimester.*

The first trimester consists of pre-clinical, or institutional training under the supervision of registered nurses. The second and third trimesters involve a combination of classroom instruction and specialized clinical training in the facilities of a local hospital.

The three-trimester diploma program totals 1350 hours of instruction. Students attend classes from 8:00 a.m. until 4:00 p.m., Monday through Friday.

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 diseases.

In addition to the $5 per trimester registration fee, this program also carries a once-only $55 personal equipment charge which includes the cost of the uniforms which Practical Nursing students are required to wear during their training.

DIPLOMA PROGRAM

Trimester I   *(Total Hours)*
    Nursing Principles and Skills 175
    First Aid 10
    Dosages and Solutions 30
    Body Structure and Function 45
    Nutrition 40
    Personal and Community Health 45
    Personal and Vocational Relationships 34
    Introduction to Medical-Surgical Nursing 18

Trimester II
    Medical-Surgical Nursing Lab 510

Trimester III
    Maternal-Child Health Lab 338
    Supervised Study 105

COURSE DESCRIPTIONS

Nursing Principles and Skills

Nursing Principles introduces the student to the theory and ward practice of patient care, the techniques of administering medicines, and the general welfare and environmental attention to the patient's needs.

First Aid

The course provides the students a thorough background and practice in providing first aid treatment to the ill patient.

Practical Nursing. . .(cont.)

Dosages and Solutions

This course covers a general review of arithmetic, with considerable practice in calculation of medicinal dosages for various types of prescriptions. The student is given practice in preparing dosages and methods of applying them to the patient, and training in maintaining records of applications.

Body Structure and Function

The course covers a study of the various body systems and how they relate to the cause of disease and the development of good health.

Nutrition

The nutrition course is designed to introduce the student nurse to the basic principles of nutrition, the importance of good nutrition, and the role of nutrition and good meal planning in providing a proper diet for the patient.

Personal and Community Health

This course gives attention to the principles of good physical, mental and social health and their relationships to the character and work of the nurse.

Personal and Vocational Relationships

This course is designed to help the student to understand herself as a person so that she will be better able to understand others. It includes personal and vocational ethics, study habits and techniques, mental health concepts, trends in nursing, nursing organizations, and opportunities in the nursing field.

Introduction to Medical-Surgical Nursing

An introduction to the medical and surgical disorders of patients, this course includes considerable observation of ill patients, and exposure to the operating and recovery room.

Medical and Surgical Nursing

Through theory and coordinated nursing care of the patient, this course helps the student to understand medical and surgical disorders and the nursing treatment required. It includes diet therapy, clinical experience in administering medicines, team work on the floor, recovery room experiences, and observation of major surgery.

Maternal-Child Health

This course uses a family-centered approach to learning aspects of the care of the maternity patient during pregnancy and the post-partum period. It provides the experience in the labor room, post-partum and newborn nursery, the recovery room and observation in the delivery room. Theory is given on the patterns of normal growth and development of the child from birth through adolescence, and practice in the care of the child during illness.

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WELDING PROGRAM
(2 Trimesters)

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

The first trimester, students are given instruction in oxy-acetylene welding and shielded metal arc welding. In the second trimester, emphasis is placed on gas tungsten-arc and gas metal-arc.

The two-trimester diploma program totals 900 hours of instruction, of which 450 hours are laboratory work and 450 hours are supporting courses.

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

Welding students are required to provide their own padlock, oxy-acetylene goggles, welding gloves, welding helmet, safety glasses, and tip cleaner.

DIPLOMA PROGRAM

Trimester I   *(Hours/Week)*

Welding Lab I 15
Welding Metallurgy I 5
Trade Math I 5
Elective course 5

Trimester II

Welding Lab II 15
Welding Metallurgy II 5
Trade Math II 5
Blueprint Reading 5

COURSE DESCRIPTIONS

Welding Lab I

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

Welding Matallurgy I

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

Trade Math I

This course is designed to cover basic arithmetical operations. These include addition, subtraction, multiplication, and division. Whole numbers, common fractions, decimal fractions, powers and roots, percentages, surface measurements and direct measurements are thoroughly covered.

Welding...(cont.)

Welding Lab II

   (Prerequisites: Welding Lab I, Welding Metallurgy I, and Trade Math I) A laboratory practice course designed to provide instruction in the areas of inert gases, gas-arc welding equipment, gas-arc welding and power sources, gas tungsten-arc torches, gas metal-arc torches, electrodes, and wire feed systems.
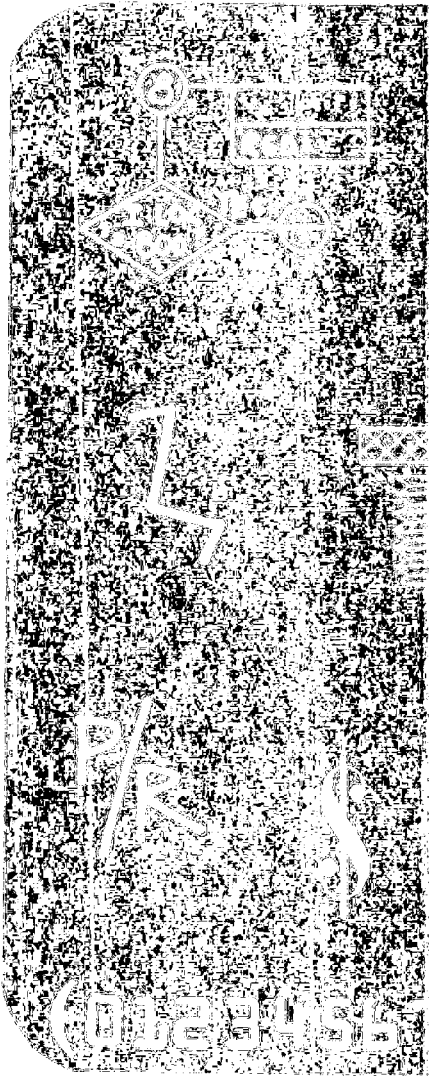
Welding Metallurgy II

   (Prerequisites: Welding Lab I, Welding Metallurgy I, and Trade Math I) This course offers instruction in the areas of 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, volume, and pulley speeds as applied to the welding area.

Blueprint Reading

   (Prerequisites: Welding Lab I, Welding Metallurgy I, and Trade Math I) This course is designed to cover instruction in the area of welding symbols, terminology, detailed fittings, and angle layout as applied to the welding area.

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