# CATALOG 1990–91

## Albuquerque Technical-Vocational Institute

**Volume XXV** **June 1990**

Main Campus
525 Buena Vista SE, Albuquerque, NM 87106
Telephone: (505) 768-0400

Joseph M. Montoya Campus
4700 Morris NE, Albuquerque, NM 87111
Telephone: (505) 298-5461

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**ADMINISTRATION**

Ted F. Martinez
*President*

Michael J. Glennon
*Vice President for Administration*

Dr. Ambrosio J. Ortega
*Vice President for Instruction*

**GOVERNING BOARD**

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*Chairman*

Robert Matteucci
*Vice Chairman*

Manuel P. Olguin
*Secretary*

James C. Jaramillo
Maureen A. Luna
Dan A. McKinnon III
Earl C. Waid

# Telephone Directory

(Effective July 1, 1990)

**Main Campus**

| | |
|---|---|
| Switchboard/Locator | 768-0400 |
| Admissions | 768-0540 |
| Admissions TTY | 768-0643 |
| Adult Education | 768-0485 |
| Adult Learning Center | 768-0771 |
| Bookstore | 768-0646 |
| Cashier (Admissions) | 768-0516 |
| Continuing Education Division | 768-0480 |
| Continuing Education TTY | 768-0497 |
| Financial Aid | 768-0530 |
| GED—General Educational Development | 768-0492 |
| Information | 768-0540 |
| Instructional Division | 768-0607 |
| Administration | 768-0607 |
| Arts & Sciences | 768-0680 |
| Business Occupations | 247-9579 |
| Developmental Studies | 768-0750 |
| Health Occupations | 768-0560 |
| Technologies | 768-0610 |
| Trades | 768-0700 |
| Library | 768-0770 |
| Placement | 768-0460 |
| Special Services for the Handicapped | 243-1741 TTY 247-9304 |
| Student Records | 768-0510 |
| Student Services Administration | 768-0601 |
| Support Services Administration | 768-0406 |
| Business Office | 768-0430 |
| Personnel | 768-0409 |
| Public Information | 768-0407 |
| Testing Services | 768-0550 |

| | |
|---|---|
| **Joseph M. Montoya Campus** | 298-5461 |
| Admissions TTY | 298-5002 |
| Continuing Education TTY | 298-4992 |

*Cover design by Priscilla Gonzalez*

*Photos by Rey Garduño*

# Table of Contents

## Equal Opportunity Policy

The Albuquerque Technical-Vocational Institute, in compliance with Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973, does not discriminate on the basis of sex, race, color, national origin, creed, religion, age or physical or learning handicap in any of its policies, practices or procedures. The provision includes, but is not limited to, admissions, testing, employment, financial aid and educational services.

Any person who wants to file a complaint based on these laws should contact the T-VI equal opportunity officer, Ruth Tangman, A Building, Main Campus, 525 Buena Vista SE, 768-0480.

# About the Institute

Beginning its second quarter century, the Albuquerque Technical-Vocational Institute (T-VI) is a community college offering occupational education and coursework leading to associate degrees. The Institute opened in 1965 and with about 17,000 students is one of the three largest postsecondary schools in New Mexico.

Funding for T-VI programs and most construction and equipment comes from a local property tax and an annual appropriation by the New Mexico Legislature. Federal funding, usually for special programs, is also received.

T-VI's first classes were held in an elementary school, which had been closed, and surplus army housing. Since then, more than $53 million worth of construction has taken place.

The Main Campus, near Albuquerque's downtown business district, occupies 60 acres of land on both sides of Coal Avenue SE from University Boulevard to Yale Boulevard. The 42-acre Joseph M. Montoya Campus is located at 4700 Morris NE. Situated along the Bear Canyon Arroyo just north of Montgomery Boulevard, the campus stretches from Morris Avenue to Juan Tabo Boulevard. The campus may be entered from either street.

The school year is divided into three terms of 15 or 16 weeks each. Most programs admit beginning students each term—in September, January and May.

Many programs are available at both the Main and Montoya campuses. Continuing Education Division classes are held at both campuses and other locations throughout the T-VI district. Programs, facilities and services are accessible to handicapped individuals.

**ACCREDITATION:** T-VI is accredited to grant certificates, diplomas, Associate in Applied Science, Associate in Liberal Arts and Associate in Science degrees by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools.

In addition, three Health Occupations programs are accredited by special agencies. The Practical Nurse program is accredited by the National League for Nursing, the Associate Degree in Nursing program by the National League for Nursing and the Respiratory Therapy Technician program by the American Medical Association's Committee on Allied Health Education and Accreditation.

**PUBLIC DOCUMENTS:** The following public documents are available at the admissions areas of both campuses: mission and goals statement, faculty credentials, accreditation materials.

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*The T-VI Catalog is the student's official guide to the programs, courses and policies of the Institute. It is the student's responsibility to become familiar with the general policies of the Institute and to comply with those policies.*

*Information in this catalog is subject to change without notice at any time by proper administrative directive.*

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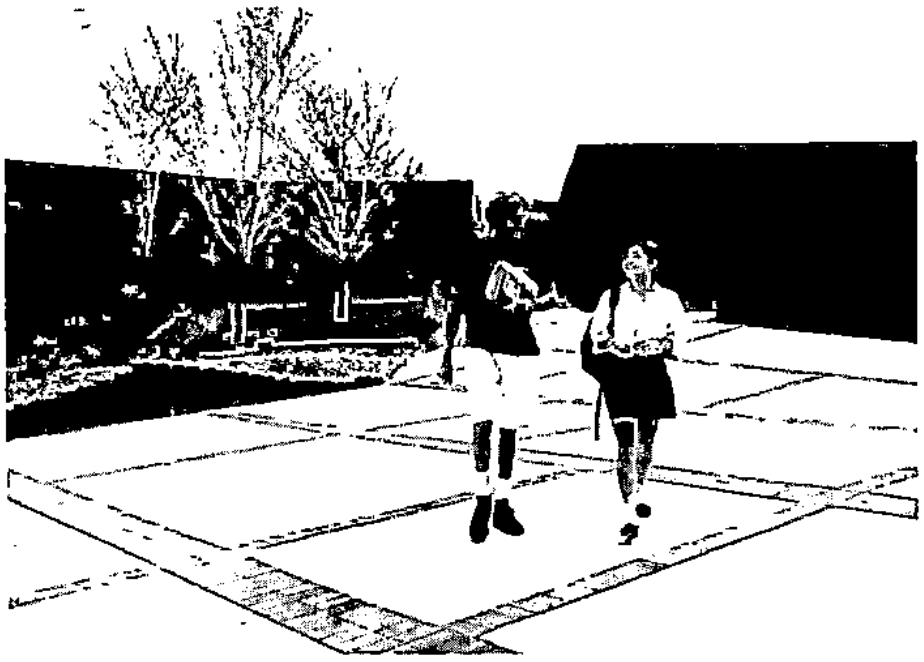


# Instructional Programs

## Instructional Division

The T-VI Instructional Division offers the following:

- **CERTIFICATE PROGRAMS:** Full-time programs in 35 business, health, technology and trades occupations.

- **ASSOCIATE DEGREES:** Available in 18 business, health, technology, trades and liberal arts majors.

- **LIBERAL ARTS COURSES:** Communications, mathematics, social and natural science, humanities and general elective classes offered for college credit.

- **PREPARATORY PROGRAM:** For persons who must improve skills to meet admission requirements for T-VI's occupational or associate degree programs or college entry.

- **SPECIAL SERVICES:** For handicapped students.

- **OTHER PROGRAMS:** For persons wanting to pursue a course of study at their own pace. These services include libraries, Adult Learning Centers, Business Occupations Learning Centers, a Small Business Development Center, and apprenticeship programs in various trades occupations.

Not all certificate and degree programs are offered at both campuses or every term.

Persons not working toward a certificate or degree may enroll part time in specific courses if space is available.

If fewer than 12 persons have applied to begin a program, the program may be cancelled that term.

After a program begins, no required class will be cancelled regardless of enrollment. However, support classes may be cancelled if there are not enough applicants to justify the class being offered.

For complete information on programs and policies, see *Instructional Division* beginning on page 11 of this catalog.

**COLLEGE TRANSFER:** T-VI programs and courses may transfer to other two- and four-year institutions. Information about credit transfer is available from T-VI counselors.

## Continuing Education Division

The Continuing Education Division, with offerings primarily of interest to part-time students, includes:

- **SKILL IMPROVEMENT COURSES:** About 175 credit and noncredit offerings in business, trade and industrial, health and technical subjects. Most are offered in the evening. Noncredit courses are generally shorter and are scheduled on shorter notice partly in response to demand.

Continuing Education Division courses that carry the same course numbers as courses offered by the Instructional Division are approved for use in certificate and degree programs. Not all courses can be substituted in an Instructional Division program on a one-to-one basis. In some cases, it takes two or more Continuing Education courses to equal one Instructional Division class.

- **ADULT EDUCATION:** Instruction for improvement of written and spoken English; amnesty, reading and math classes; and preparation for the General Educational Development (high school equivalency) and U.S. citizenship examinations.

- **VOCATIONAL ENRICHMENT CLASSES:** For high school students at their schools after regular school hours. Contact high school counselors for more information. (Adults may enroll in these classes on a space-available basis.)

A Continuing Education course may be cancelled if enrollment is insufficient. Fees for such courses are refunded. Courses may be terminated if fewer than 10 persons are attending regularly.

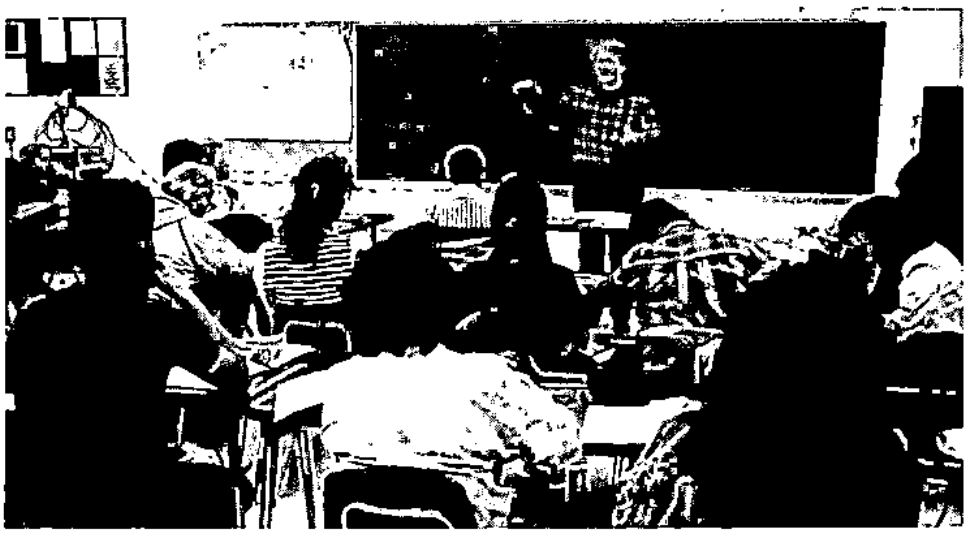
Continuing Education courses are offered at T-VI's Main and Montoya campuses and other locations throughout the Albuquerque area. For complete information on courses and registration procedures, see *Continuing Education Division* beginning on page 114 of this catalog.

# Estimated Student Expenses

The budgets below are estimated expenses for tuition, food, housing, transportation, school and personal expenses for full-time students at T-VI. The Financial Aid Office uses these figures to calculate the amount of financial aid a student will receive.

| *Student's Status* | *1 Term* | | *2 Terms* | | *3 Terms* | |
|---|---|---|---|---|---|---|
| **For Dependent and Independent Students Without Rent/Mortgage Expenses** | | | | | | |
| | *Certificate* | *Degree* | *Certificate* | *Degree* | *Certificate* | *Degree* |
| Tuition and Fees | 25 | 145 | 40 | 290 | 55 | 435 |
| Room and Board | 965 | 965 | 1,929 | 1,929 | 2,894 | 2,894 |
| Books and Supplies | 53 | 107 | 107 | 214 | 160 | 321 |
| Personal Expenses | 632 | 632 | 1,264 | 1,264 | 1,896 | 1,896 |
| Transportation | 329 | 329 | 658 | 658 | 987 | 987 |
| *TOTAL* | $2,004 | $2,178 | $3,998 | $4,355 | $5,992 | $6,533 |
| **Non-resident** | $2,700 | $2,744 | $5,390 | $5,487 | $8,080 | $8,231 |
| **For Dependent and Independent Students with Rent/Mortgage Expenses** | | | | | | |
| | *Certificate* | *Degree* | *Certificate* | *Degree* | *Certificate* | *Degree* |
| Tuition and Fees | 25 | 145 | 40 | 290 | 55 | 435 |
| Room and Board | 2,194 | 2,194 | 4,387 | 4,387 | 6,581 | 6,581 |
| Books and Supplies | 53 | 107 | 107 | 214 | 160 | 321 |
| Personal Expenses | 814 | 814 | 1,627 | 1,627 | 2,441 | 2,441 |
| Transportation | 357 | 357 | 715 | 715 | 1,072 | 1,072 |
| *TOTAL* | $3,443 | $3,617 | $6,876 | $7,233 | $10,309 | $10,850 |
| **Non-resident** | $4,139 | $4,183 | $8,268 | $8,365 | $12,397 | $12,548 |

*These figures are estimates and are subject to change without notice.* *See pages 15–17 for more information regarding tuition and fees.*



# Graduate Job Placement, 1989

(Winter and Summer 1989 terms only. Fall 1989 figures available June 1, 1990.)

| | TOTAL GRADUATES | Could not locate | Not seeking employment | Continuing school | AVAILABLE FOR WORK | Employed in training-related job | Employed but job not related to training | Unemployed but seeking | Percent employed (training-related job; graduates available for work) | Working in New Mexico | Working out-of-state | Average hourly rate in training-related jobs | Average annual salary in training-related jobs based on 40-hour work week |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BUSINESS OCCUPATIONS** | | | | | | | | | | | | | |
| Accounting | 8 | — | 2 | 1 | 6 | 4 | 2 | — | 67% | 6 | — | 6.34 | $13,187 |
| Accounting, AAS | 44 | 1 | 7 | 7 | 36 | 21 | 7 | 8 | 58% | 26 | 1 | 6.40 | $13,307 |
| Bookkeeping | 5 | 1 | 2 | 1 | 2 | 1 | 1 | — | 50% | 2 | — | — | — |
| Business Administration | 9 | — | 4 | 1 | 5 | 4 | 1 | — | 80% | 4 | — | 6.06 | $12,616 |
| Legal Assistant Studies, AAS | 19 | — | 1 | — | 18 | 14 | 3 | 1 | 78% | 16 | — | 8.01 | $16,651 |
| Legal Office Worker[1] | 8 | 2 | 3 | 2 | 3 | 2 | — | — | 67% | 2 | — | 7.40 | $15,392 |
| Receptionist | 3 | — | 1 | — | 2 | 2 | — | — | 100% | 2 | — | 5.74 | 11,929 |
| Secretarial Studies | 23 | 2 | 5 | 3 | 16 | 15 | — | 1 | 94% | 13 | 2 | 5.46 | $11,350 |
| Secretarial Studies, AAS | 12 | 1 | 2 | — | 9 | 9 | — | — | 100% | 9 | — | 6.12 | $12,734 |
| **HEALTH OCCUPATIONS** | | | | | | | | | | | | | |
| Health Unit Clerk | 12 | 4 | 1 | — | 7 | 6 | — | 1 | 86% | 6 | — | 5.53 | $11,509 |
| Medical Lab Technician | 3 | — | 1 | 1 | 2 | 2 | — | — | 100% | 2 | — | 8.18 | $17,004 |
| Nursing, AS | 62 | 3 | 1 | 1 | 58 | 58 | — | — | 100% | 49 | 3 | 11.49 | $23,901 |
| Nursing Assistant | 53 | 11 | 6 | 6 | 36 | 33 | 2 | 1 | 92% | 35 | — | 5.53 | $11,498 |
| Phlebotomist | 10 | — | 2 | — | 8 | 8 | — | — | 100% | 8 | — | 5.26 | $10,944 |
| Practical Nurse | 8 | 2 | 1 | 1 | 5 | 5 | — | — | 100% | 5 | — | 8.01 | 16,656 |
| Respiratory Therapy Technician | 9 | — | 3 | 2 | 6 | 6 | — | — | 100% | 6 | — | 8.89 | $18,498 |
| **TECHNOLOGIES** | | | | | | | | | | | | | |
| Architectural Drafting Technology | 26 | — | 1 | 3 | 25 | 20 | 1 | 4 | 80% | 20 | 1 | 6.40 | $13,320 |
| Civil and Surveying Technology | 7 | 1 | — | — | 6 | 4 | — | 2 | 67% | 2 | 2 | 7.67 | $15,947 |
| Data Processing Technology | 15 | — | 1 | — | 14 | 8 | — | 6 | 57% | 8 | — | 7.48 | $15,554 |
| Electromechanical Drafting, AAS[2] | 1 | — | — | — | 1 | 1 | — | — | 100% | 1 | — | — | — |
| Electronics Technology | 32 | 5 | — | 2 | 27 | 19 | 3 | 5 | 70% | 19 | 3 | 7.97 | $16,571 |
| Electronics Technology, AAS[3] | 13 | 2 | 1 | 1 | 10 | 9 | 1 | — | 90% | 9 | 1 | — | — |
| Instrumentation and Control Technology | 35 | 3 | 2 | — | 30 | 20 | 4 | 6 | 67% | 20 | 3 | 7.68 | $15,978 |
| Instrumentation and Control Tech., AAS[3] | 11 | 1 | — | — | 10 | 8 | — | 2 | 80% | 7 | 1 | — | — |
| Laser Electro-Optic Technology | 8 | — | — | 1 | 8 | 5 | — | 3 | 63% | 2 | 3 | 10.70 | $22,252 |
| Laser Electro-Optic Technology, AAS | 2 | — | — | — | 2 | 2 | — | — | 100% | 1 | 1 | 8.11 | $16,859 |
| **TRADES** | | | | | | | | | | | | | |
| A/C, Heating and Refrigeration | 23 | — | 4 | 1 | 19 | 16 | 2 | 1 | 84% | 15 | 3 | 6.45 | $13,419 |
| Automotive Body Repair | 5 | — | 1 | 1 | 4 | 4 | — | — | 100% | 4 | — | 4.92 | $10,226 |
| Automotive Technology | 12 | 4 | 1 | 2 | 7 | 6 | — | 1 | 86% | 6 | — | 5.31 | $11,050 |
| Baking | 23 | 2 | 14 | 7 | 7 | 7 | — | — | 100% | 7 | — | 4.69 | $ 9,761 |
| Carpentry | 23 | 5 | 6 | 4 | 12 | 8 | — | 4 | 67% | 7 | 1 | 4.84 | $10,061 |
| Commercial Printing | 18 | 1 | 4 | 1 | 13 | 11 | — | 2 | 85% | 11 | — | 4.81 | $10,001 |
| Diesel Mechanics | 14 | — | 1 | — | 13 | 10 | 1 | 2 | 77% | 10 | 1 | 5.84 | $12,146 |
| Electrical Trades | 17 | — | 2 | 1 | 15 | 15 | — | — | 100% | 15 | — | 5.66 | $11,774 |
| Fire Science | 2 | — | 1 | 1 | 1 | — | 1 | — | — | 1 | — | — | — |
| Law Enforcement[4] | 2 | — | 2 | 2 | — | — | — | — | — | — | — | — | — |
| Law Enforcement, AAS | 6 | — | 2 | 3 | 4 | 3 | — | 1 | 75% | 3 | — | 9.08 | $18,880 |
| Machine Tool Technology | 23 | — | 1 | 1 | 22 | 22 | — | — | 100% | 21 | 1 | 5.99 | $12,466 |
| Plumbing | 12 | 1 | 4 | 2 | 7 | 5 | — | 2 | 71% | 5 | — | 5.34 | $11,104 |
| Quantity Food Preparation | 23 | 1 | 10 | 6 | 12 | 12 | — | — | 100% | 10 | 2 | 5.68 | $11,823 |
| Truck Driving[5] | 26 | — | 3 | — | 23 | 19 | 1 | 3 | 83% | 15 | 4 | — | — |
| Welding | 5 | — | 1 | — | 4 | 4 | — | — | 100% | 4 | — | 5.64 | $11,733 |
| TOTALS | 672 | | | | 515 | 428 | | | 83% | | | | |

[1] *No longer offered as a separate program but as a specialty option in Secretarial Studies at either certificate or AAS degree level.*
[2] *Not offered as separate program. Past graduates may return to complete degree.*
[3] *No salaries listed because all reported were employed alumni returning to complete degrees and salaries were not entry-level.*
[4] *Graduates all continued their education to earn an AAS degree before seeking employment.*
[5] *Compensation based on miles driven; cannot compute hourly or annual rate as in other programs.*

**NOTE: Information about T-VI's retention rates is available from the Student Services Office upon request.**

# School Year

T-VI meets year-round with the year divided into three full terms of 15 or 16 weeks—fall, winter and summer. Short sessions also are held in the summer. Breaks between terms range from 10 days to two weeks.

Separate class schedules are published each term. Starting and ending dates and times for all classes are listed in the schedules, which are available in the Admissions (Instructional Division) and Continuing Education offices of both campuses.

Most full-time students attend school year-round until they finish their programs. In most programs, it is possible to take a term off, if necessary. *However, persons who interrupt their programs may not be able to resume their studies at the time they want, because the classes they need may not be available every term.*

**BAD WEATHER:** The Institute announces a special schedule or school closing only under extreme weather conditions. If an abbreviated schedule is designated, classes begin at 10:30 a.m. at both campuses. Classes meeting prior to 10:30 a.m. are canceled. If a "snow day" is designated, the Institute is closed.

When either situation occurs, information is announced by local radio stations.

# Calendar

## Instructional and Continuing Education Divisions

**FALL TERM, 1990**

| | |
|---|---|
| Classes Begin | Sept. 4 |
| Midterm | Oct. 25 |
| Staff Development (no classes) | Oct. 26 |
| Thanksgiving (no classes) | Nov. 22–23 |
| Last Day of Classes | Dec. 21 |
| (Traditional lecture classes end Dec. 22) | |

**WINTER TERM, 1991**

| | |
|---|---|
| Classes Begin | Jan. 7 |
| Presidents' Day (no classes) | Feb. 18 |
| Midterm | Mar. 1 |
| Last Day of Classes | Apr. 19 |
| (Traditional lecture classes end Apr. 24) | |

**SUMMER TERM, 1991**

| | |
|---|---|
| Classes Begin | May 6 |
| Memorial Day (no classes) | May 27 |
| Midterm | June 29 |
| Independence Day (no classes) | July 4–5 |
| Last Day of Classes | Aug. 16 |
| (Traditional lecture classes end Aug. 21) | |

# Services for Students

The Student Services Department assists applicants, students and graduates. Services include admission, testing, educational advisement, personal and career counseling, student records and transcripts.

**COUNSELING AND ADVISEMENT:** Professional counselors at both campuses provide educational advisement to applicants and students. Counselors can assist students with problems that may be preventing them from doing their best in school. Professional counselors at both campuses provide:

- Counseling for personal, social or wellness concerns.
- Crisis intervention and referral services.
- Career exploration including aptitude, interest and personality assessment.
- Counseling for students encountering academic probation and suspension.

- Academic advisement.

Counseling and advisement services are available in the departments and in the admissions areas.

**HEALTH CARE:** The Health Center, located in Room A-126 on Main Campus, is open weekdays from 8 a.m. to 5 p.m. Services, all offered free of charge, include first aid for minor injuries and illnesses, physical exams, various laboratory exams and other primary care diagnosis and treatment. The Health Center staff also provides individual and group counseling for personal health problems. There are cots for people who become ill while on campus. If it is necessary to transport an ill or injured student to a medical facility, the student is responsible for all transportation costs.

**JOB PLACEMENT:** Graduates are responsible for finding their own jobs after completing a T-VI program. However, the Institute's Industrial Relations Office and instructional staff provide job-seeking assistance to full-time students and graduates.

The Industrial Relations Office is at 616 Buena Vista SE on Main Campus. There is a liaison office at the Montoya Campus.

Graduates and Instructional Division students who are enrolled for at least 12 credits may call the Industrial Relations HOT LINE (843-9696) for a recorded message of daily job openings, obtain referral cards for full- and part-time jobs listed by employers who want to hire from T-VI, and use a variety of printed materials and other resources available in the office.

Instructional Division students in their final term may register for graduate placement services which include résumé preparation and scheduling of campus interviews. Students must be candidates for graduation with passing grades at midterm to be scheduled for interviews or have résumés sent to employers.

## Testing Services

T-VI's Testing Center, in the C Building on Main Campus, offers a variety of tests—most free of charge. Among the examinations administered are the American College Test (ACT), placement advisement tests for certificate majors, the General Educational Development (GED) exam for high school equivalency, typing speed tests, math tests and career aptitude tests. These exams are also administered at the Montoya Campus.

**CAREER APTITUDE TESTS:** Several tests are available for applicants by appointment. Aptitude, personality and interest tests are given to assist applicants with career choices. A current registration fee must be on file before the exams will be given.

**GED EXAM:** Anyone at least 18 years old and not enrolled in high school may take the General Educational Development exam for a high school equivalency diploma. A test fee must be paid in advance.

A 17-year-old may take the exam if released from the state compulsory school attendance law and granted a GED Underage Permission Form. No currently enrolled high school student, and no one 16 years old or younger, may take the exam. Special testing is available for disabled students.

Interested persons are pretested to determine readiness for the five-part exam. Those who want

or need more study before taking the test may enroll in free GED preparatory classes, offered day and evening at both campuses and other locations in the Albuquerque area. For information on the classes, see page 116.

**ACT:** This exam, scheduled monthly, is used for placement in certain courses and programs. The ACT fee and a registration fee (for either the current or next term) must be on file prior to scheduling the exam. The ACT and registration fees are not refundable. All fees must be paid and scheduling arrangements made at least 24 hours in advance of the exam. Information about the ACT and free study guides are available in the Testing Center. (Also see p. 12.)

**CERTIFICATE PROGRAM ADMISSION TESTS:** Basic math and vocabulary tests are administered to applicants to determine, with the help of a counselor, program and course placement.

**MATH PLACEMENT TESTS:** The algebra placement test must be taken by all students who want placement in Math 150 or above but have not taken the prerequisite course. Students planning to enroll in Math 162/Calculus I must take both the algebra and trigonometry placement tests.

# Library Services

Library Services includes the libraries, Adult Learning Centers and Audiovisual Services. All the facilities are open to the public.

Main Campus Library Services is located in C Building. The Library and Adult Learning Center are on the fourth floor; Audiovisual Services is on the third floor. The Montoya Campus Library and Adult Learning Center are in J Building; Audiovisual Services is in K Building.

When school is in session, the facilities are open from 7 a.m. to 9:30 p.m. weekdays except Friday, when they close at 5 p.m.; and Saturdays from 8 a.m. to 5 p.m. When school is not in session, hours are 8 a.m. to 5 p.m., Monday through Friday.

A Professional Resource Center for T-VI's instructional staff is located in the Main Campus Library.

Services include help in locating materials, instruction in how to use a library, study facilities, interlibrary loans, magazine back issues and coin-operated copying machines.

## LIBRARIES

Library materials include books, pamphlets, maps, newspapers, magazines, encyclopedias and dictionaries. Special collections of learning materials are maintained in all T-VI occupational subjects.

## ADULT LEARNING CENTERS

Adult Learning Center services are offered free to T-VI students and other adults who want to develop basic education skills, occupationally related knowledge, microcomputer literacy or self-improvement.

Audiovisual materials are available, and trained staff members are on duty to help each person set up and pursue an individual, self-paced learning program. Tutors are available during regular library hours when school is in session.

Basic education materials in the centers at both campuses include General Educational Development (GED) preparation, English as a second language, conversational English, beginning Spanish, spelling, reading, grammar and mathematics.

Among occupational materials available are those related to accounting, sales, computers, electronics, auto mechanics and secretarial sciences.

(Also see Business Occupations Learning Centers page 39.)

## AUDIOVISUAL SERVICES

Audiovisual Services maintains T-VI's 16mm film and videotape collections and all AV equipment. Materials are available for classroom and individual viewing.

Instruction in the operation of AV equipment is available to students and staff. Other services include educational film location, preview arrangements and assistance in the design, preparation and application of audiovisual materials.

Special audiovisual materials are available for recreational viewing in Audiovisual Services at both campuses.

# Food Services

The Main Campus has two food facilities—one located in the Administration Building (Room A-35) and the other in the Business Occupations Building (Room B-125).

The A-35 facility includes a *bakery*, open Tuesday through Friday on school days from 8:15 a.m. to 12:30 p.m.; a *culinary arts line* serving luncheon

entrées on school days from 11:15 a.m. to 12:30 p.m.; and a *snack bar* serving short-order meals and snacks on school days from 7:45 a.m. to 3:30 p.m., and from 5:15 p.m. to 8:30 p.m. Monday through Thursday when classes are in session.

The Business Occupations Building facility includes a *snack bar* serving short-order meals and snacks on school days from 6:45 a.m. to 2 p.m.; and a culinary arts dining facility, *Student Specialties*, serving gourmet meals Tuesday through Thursday at 6 p.m. by reservation only.

The Montoya Campus has a snack bar in the H Building that serves food in the mornings and evenings when school is in session.

Vending machines are available in the snack bars and at other locations at both campuses.

## Bookstores

The T-VI Bookstores, located in the A Building on Main Campus and the G Building at the Montoya Campus, sell all of the textbooks required for Arts & Sciences classes, Skill Improvement classes and some associate degree programs. The stores also sell a full range of school supplies and miscellaneous items such as dictionaries, backpacks, sportswear and novelties.

The Main Campus bookstore is open from 8 a.m. to 8 p.m. Monday through Thursday and 8 a.m. to 4:30 p.m. Friday. The Montoya Campus bookstore is open from 8 a.m. to 7 p.m. Monday through Thursday, 8 a.m. to 5 p.m. Friday and 8 a.m. to noon Saturday.

## Housing

T-VI has no dormitories. Students must make their own arrangements for housing. A list of property owners who have contacted T-VI with available rentals is kept at the C Building reception desk at Main Campus.

## Parking and Transportation

**PARKING:** Student parking lots are provided free at both T-VI campuses. The lots are unsecured, and T-VI is not liable for theft, vandalism or other losses which might occur while vehicles are parked on campus. Vehicles should be locked and valuables hidden.

Designated handicapped parking spaces are available in T-VI parking lots. There are special parking areas for motorcycles and bicycles.

Students may use T-VI parking lots by obtaining a parking permit decal. Decals are issued for lots nearest the student's classes. Decals are available in the lobby of the A Building or from department counselors at Main Campus, and the Student Services Center at Montoya Campus. The decal should be put on the rear bumper of vehicles (rear fender of motorcycles).

Violations of parking regulations result in citations by T-VI security.

**BUS PASSES:** Economical passes for postsecondary students are available for Suntran city buses. A pass good for unlimited rides during one calendar month may be purchased for $19 at the Financial Aid Office in the C Building on Main Campus or Student Services Center in the G Building at Montoya Campus.

To encourage students to use the city buses, T-VI pays a 50 percent rebate on passes purchased at the Institute.

Bus passes and rebates also may be issued to eligible Continuing Education Division students on a demonstrated need basis. Information may be obtained from the Adult Education administrator at the Main Campus (Room A-30).

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*The speed limit in all parking lots is eight miles per hour.*

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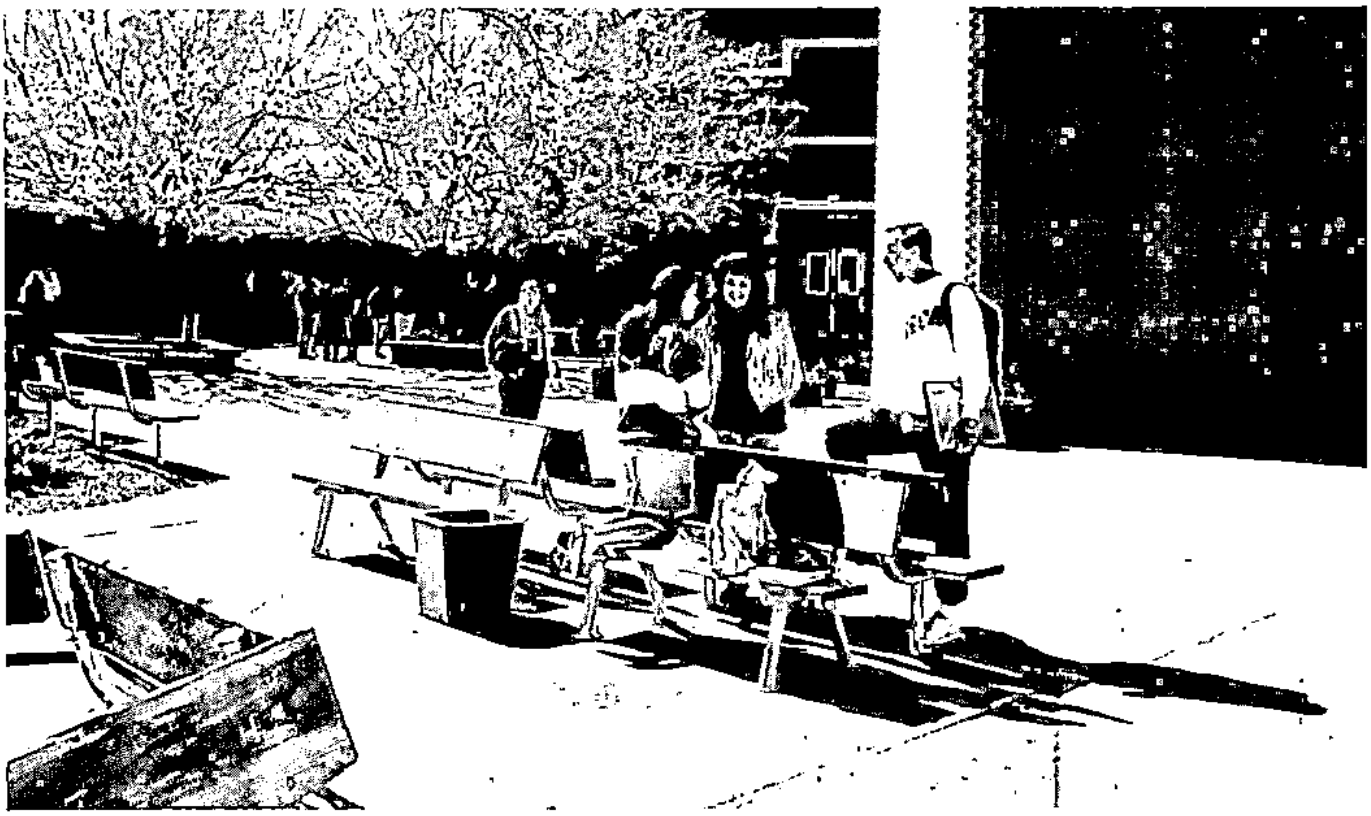
## Campus Conduct

**PLAGIARISM AND CHEATING:** A student guilty of plagiarism and/or cheating will receive a grade of F or U in the course involved and the grade will be so recorded on the transcript. A pattern of cheating will result in suspension.

**COMPUTER CRIME:** Under the state Computer Crimes Act, a person who intentionally and without authorization accesses, alters, damages, copies or destroys any computer system or data stored within is subject to criminal prosecution on charges ranging from misdemeanor to third degree felony. Such conduct also will lead to suspension or dismissal.

**DANGEROUS SUBSTANCES:** Carrying, possessing or storing dangerous substances or materials on campus is prohibited.

**WEAPONS AND FIREARMS:** Carrying, possessing or storing weapons and firearms on campus is prohibited. Exceptions to this policy are law en-



forcement officers authorized by state law to carry firearms (30-7-2 NMSA 1978) and students participating in law enforcement instruction requiring the use of firearms who are under the supervision of a certified law enforcement instructor.

**LAW VIOLATIONS:** Law violations by anyone on campus will be handled by appropriate law enforcement agencies.

**FOOD AND BEVERAGES:** Drinking and eating are prohibited in all classrooms and labs.

**SMOKING:** In accordance with City Council Ordinance 0-51 and Governing Board Resolution 1989-4, smoking is prohibited in all T-VI buildings.

**STUDENT DRESS:** Students are asked to attend class dressed appropriately for the job for which they are training. Students or visitors must wear shirts and shoes to enter a T-VI building.

**CHILDREN:** Students are not permitted to bring children to classroom or laboratory sessions. Children left unattended on campus will be brought to the attention of the appropriate enforcement agency.

**ANIMALS:** Animals (except those assisting sensory impaired persons) are not allowed in T-VI buildings.

**SUBSTANCE ABUSE:** T-VI will support the laws of the city, state and federal government regarding the use, sale or possession of alcohol, narcotics and dangerous drugs.

A student shall not use any controlled substance on T-VI property as defined by applicable federal, state and/or city statutes, except when prescribed by a licensed member of the medical profession for the treatment of the student.

Students under the care of a physician and using prescribed drugs on campus under a physician's direction shall have a proper statement from the physician authorizing the use of the drug and describing the side effects, if any, resulting from the use of the drug. If, in the opinion of the instructor or administrator, a student's actions and/or behavior are considered unsafe as a result of using the drug, the student may be sent home.

If a student is found using, selling or otherwise possessing a controlled substance on campus that is not properly authorized by a licensed medical professional, the student may be dismissed.

Students shall not drink alcoholic beverages while at school, nor shall they report for school under the influence of intoxicants to any degree, nor shall they have any odor of intoxicants on their breath. Students shall not bring or store any alcoholic beverages on Institute property. Violation of this policy may result in suspension or dismissal of the student.

A substance abuse prevention program is spon-

sored by the Institute. Information and initial counseling assistance concerning substance abuse as well as referrals to appropriate agencies are available from admissions and department counselors, and the Health Center, Room A-126, at Main Campus.

**DISRUPTIVE BEHAVIOR:** Unsafe or disruptive behavior anywhere on campus property is grounds for suspension or dismissal from T-VI. This policy also applies to any field trip taken under the supervision of a T-VI employee.

**SUBSTANCE ABUSE/DISRUPTIVE BEHAVIOR APPEAL:** A student suspended or dismissed for disruptive behavior or found in violation of the Institute's substance abuse policy regarding dangerous drugs, narcotics or alcohol which interfere with the educational process may appeal the case to the department dean or in the case of non-degree students to the Dean of Student Services.

The student must appeal in writing within three school days of the suspension or dismissal. The dean shall appoint a review board of two faculty members and one student to review the violations with the student involved. The hearing must be held within five working days after the student's request has been received by the department dean. The student will be given the opportunity to present his/her version of the incident. The board will determine if the suspension or dismissal is upheld or if the student is to be reinstated. The board will determine the length of any suspension. The board will inform the department dean of its findings and recommendations, and the dean will inform the student. The decision of the board is final.

If reinstated, the student will be placed on probation. In the case of substance abuse, the reinstated student will also be required to see a T-VI counselor for assistance in seeking professional help. The T-VI counselor will report periodically to the department dean about the progress of the individual.

## Personal Property

**LOCKERS:** Lockers are available at both campuses. Any student may use an empty locker by simply providing a lock for it. However, the lock and locker contents must be removed by the last day of each term, when a student is no longer enrolled, or when necessary for security or repair reasons.

Locks remaining on lockers during a term break or more than five days after a student has left school are cut off and the locker contents removed. Students then have 30 days to claim their possessions in the A Building lobby on Main Campus or H-100 on Montoya Campus.

**LOST AND FOUND:** The Main Campus lost and found is at the A Building lobby reception desk. On the Montoya Campus, it is in the Student Services Center in the G Building.

**INSURANCE:** T-VI is not responsible for property loss, damage or personal injuries. Students are urged to obtain their own property and medical insurance coverage.

## Fire Alarms

T-VI does not hold fire drills. Each classroom and lab has a fire evacuation plan posted. At the beginning of the term, students should study the plan for each room in which they have classes.

The alarm on the Main Campus is a continuous, loud bell. The Montoya Campus alarm is a horn.

If an alarm activates, the affected building should be evacuated immediately and everyone should stay well away from the building until an "all clear" has been sounded.

## Student Life

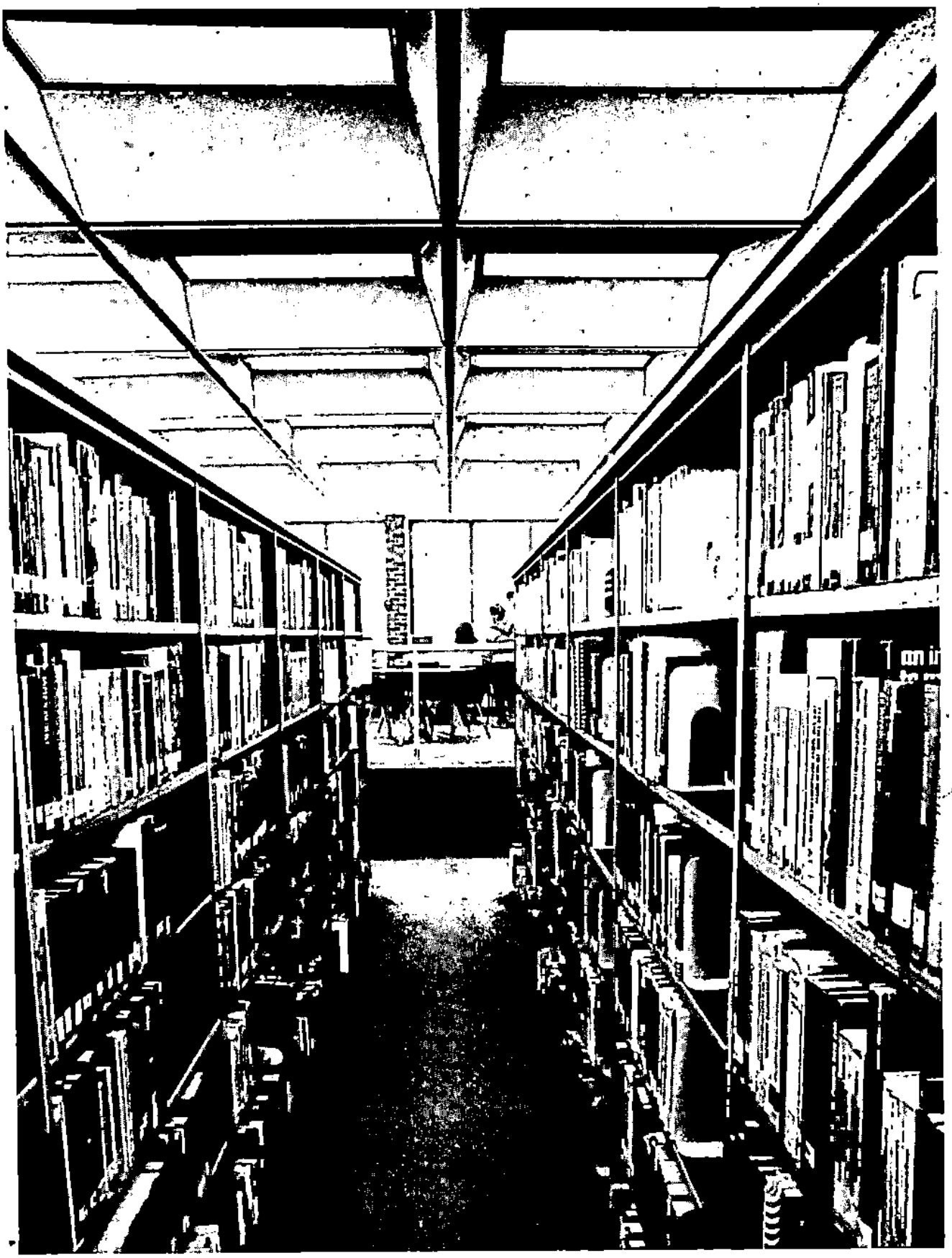
A limited student activities program is available. Students may establish extracurricular clubs or activities if at least 15 students are interested, if a faculty or staff member serves as a sponsor and if needed facilities can be located at a reasonable cost. A number of clubs currently exist and membership is open to all interested students. Persons wishing to form a club should contact the student activities coordinator in Room B-105 on Main Campus or the Montoya Campus resident administrator.

Representation of students' ideas and concerns is the task of the **Student Association.** This group is led by representatives elected from Main and Montoya campuses.

The Student Association works to make T-VI a better place for both students and staff. It is the official channel for expressing student ideas and concerns about conditions, instructional programs, school policies and procedures, and student activities. Officers and representatives are elected annually. A staff advisor attends all Student Association meetings and serves as the liaison between the SA and the T-VI staff.

All students are welcome to attend any SA meeting, but only elected representatives may make motions and vote.

# INSTRUCTIONAL DIVISION



# Admission Policies

The Albuquerque Technical-Vocational Institute has an open admissions policy which provides all interested individuals the opportunity to participate in the Institute's certificate or degree programs, credit courses, noncredit courses, services and activities.

Students are considered for admission to T-VI without regard to sex, race, color, religion, creed, national origin, age or disability.

**APPLICATION:** Applications may be picked up, filled out and then mailed or brought in person to either the Main Campus (C Building) or Montoya Campus (G Building). Admissions offices are open Monday through Thursday, 8 a.m. to 6:30 p.m., and Friday, 8 a.m. to 5 p.m. The Main Campus office also is open Saturday from 8 a.m. to 5 p.m.

**GENERAL ADMISSION REQUIREMENTS:** Any person wishing to apply for admission to the Institute must meet one of the following criteria:

—Be at least 18 years of age; or

—Have the Geneneral Education Development (GED) diploma or the equivalency certificate; or

—Have completed high school; or

—Qualify under Concurrent Enrollment.

**NOTE:** Many Trades Department programs have special admission requirements (see page 92). Health Occupations students should see the Health Occupations Department handbook for additional admission policies and requirements.

**ADMISSION CATEGORIES:** A student's admission category is determined by the student's primary intention for taking courses: to earn a certificate or degree or for personal interest and enrichment. The admission categories are as follows:

- **Certificate/Degree Students:** Certificate/degree students are those who have declared an intention to pursue a particular certificate or degree. Any student wishing to earn a certificate or degree from Albuquerque T-VI must apply for admission to the Institute and must meet one of the general admission requirements.

- **Nondegree Students:** Nondegree students are those who meet one of the general admission requirements but who wish to take courses for their own purposes without intending to seek any certificate or degree at T-VI. Students who enter the Institute in nondegree status may apply to change to certificate/degree status and to transfer credits earned in nondegree status by completing a change of major form.

Admission to certificate/degree status will be granted only after the student has submitted any documents required for admission to a certificate or degree program.

- **Concurrent Enrollment:** Highly qualified high school seniors may enroll in Arts & Sciences courses at T-VI while also being enrolled in high school. Students seeking concurrent enrollment must meet the following requirements:

—Be a currently enrolled high school senior with graduation scheduled within one calendar year; and

—Provide an official high school transcript with a cumulative grade point average of 3.0 or better on a 4.0 scale and rank in the top 25 percent of the class; and

—Submit the T-VI permission and recommendation form signed by the high school principal or designee and the student's parents or guardians; and

—Have an interview with an admissions counselor.

A concurrent student may enroll for a maximum course load of eight Arts & Sciences credit hours (two courses) per term.

**PLACEMENT:** Students seeking admission to programs only offering the certificate will be required to take the placement advisement tests, complete appropriate tests for the program or complete required course prerequisites.*

Nondegree students and students entering programs offering both the certificate and associate degree or the associate degree only may be required to provide proof of course prerequisites through transcripts or test scores. *Students are strongly encouraged to take the ACT prior to enrolling at T-VI.* The Institute has established the following cutoff scores for the ACT:*

| *Test Taken Prior to November 1989* | | *Test Taken after November 1, 1989* | |
|---|---|---|---|
| English | 17 | English | 19 |
| Math | 12 | Math | 16 |
| Social Sciences | 14 | Reading | 18 |
| Natural Sciences | 18 | Scientific Reasoning | 19 |
| Composite | 15 | Composite | 18 |

*ACT and SAT scores may not be more than five years old. Placement advisement test scores may not be older than one year.

**PREPARATORY PROGRAM:** Applicants needing or wanting preparatory work to help them meet requirements for T-VI certificate or degree programs or college entry are admitted to the Preparatory Program in the Developmental Studies Department.

**TRANSFER OF CREDIT:** Credits earned at other institutions by certificate or degree-seeking students at T-VI may be transferred and applied toward program requirements in accordance with the following guidelines:

—An official transcript must be sent directly to the T-VI Records Office from each institution evaluated for transfer credit.

—College-level credit earned with a letter grade of C or better will be considered for transfer credit. Remedial courses and upper division courses are not generally accepted in transfer.

—Credit for arts and sciences courses earned at regionally accredited postsecondary institutions will be evaluated upon receipt of the official transcript.

—Credit for technical or occupational courses earned at other postsecondary institutions will be evaluated upon the student's request and receipt of the official transcript. Courses will be evaluated according to the technical program being followed at T-VI and may be substituted for T-VI requirements as approved by the department dean.

**HEALTH REQUIREMENTS:** An applicant will be discouraged from entering a program where chances of success are poor because of a health or physical condition. An applicant can be denied admission to a program where health or physical condition can be dangerous to the applicant or others in that program. In such cases, the admission counselor will help the applicant select another program.

# Registration

Registration for continuing students begins about one month before the start of classes; registration information is mailed to them. New students receive registration information when they are admitted.

Late registration, on a space-available basis, is held only through the fifth day of classes in a full term, the third day of classes in short sessions. Any student who misses the first three days of scheduled occupational classes may be withdrawn automatically as a "no show." Readmission is on a space-available basis.

**PERMISSION OF INSTRUCTOR:** Students may enroll in some courses only by "permission of the instructor." Forms are available from departmental counselors. Permission of an instructor to enroll does not constitute a waiver of a course nor does it grant credit for another course.

**PREREQUISITE COURSES:** Before a student may enroll for credit or audit in a course which has prerequisites, the prerequisite courses must be completed satisfactorily. A student may be disenrolled if the prerequisites have not been met.

**COURSE LOAD:** The normal course load each term is 12 to 18 credit hours, 12 constituting a full load. Students wishing to take more than 18 credit hours must meet the following conditions:

—Have a cumulative T-VI grade point average of 2.5;

—Have no grade lower than C in the previous term; and

—Secure the written permission of the department dean (nondegree student must secure permission from the dean of Arts & Sciences).

No student may take more than 22 credit hours per term.

**ADDING/DROPPING COURSES:** Courses may be *added* or sections *changed* only through the fifth day of classes in full terms, the third day of classes in short sessions. Courses *may not be dropped* after Friday of the tenth week of a full term or Friday of the fourth week of a short session.

To drop a course, a "drop form" must be completed. Details are available from counselors.

Courses dropped after the tenth day of the term will be marked with a W on student transcripts. Students who do not make a written request to drop a course and are not in attendance at the time of final exams will receive an F or a U for the course.

**AUDIT:** Changes from audit to credit must be made by the fifth day of a full term or the third day of a short session. Changes from credit to audit must be made by midterm of a full term or the fourth week of a short session.

**WITHDRAWAL:** To withdraw, a "withdrawal" form must be completed. Details are available from counselors. A student cannot withdraw from school after Friday of the tenth week of a full term or Friday of the fourth week of a short session.

**INTERRUPTED TRAINING:** Students who drop out for one or more terms and wish to return to school should contact the Admissions Office early in the term prior to the one in which they wish to resume studies to be sure class space will be available.

**CANCELLATION OF ENROLLMENT:** If a student is not able to attend T-VI when planned but has registered for classes, the student must cancel registration at the Records Office before the beginning of the term. If done before the beginning of the term, a full refund of all fees paid except for the nonrefundable registration fee will be issued. Withdrawal after the first day of the term requires that the student complete the withdrawal process listed above.

# Residency

A student is classified as a resident or nonresident for tuition purposes based on information supplied on the application at the time of admission. The residency classification is only changed upon readmission or submission of a petition for New Mexico residency. Nonresident students who believe they have satisfied requirements for establishing New Mexico residency may file a petition in the Records Office at either campus. Residency petitions will be accepted through the 15th day of each term (including Saturdays). No petitions will be approved unless all requirements for residency are met before the first day of the term. To become a legal resident of New Mexico, four basic requirements must be satisfied:

1. The 12-Month Consecutive Residence Requirement: A student must physically reside in New Mexico for the 12 consecutive months immediately preceding the term for which the petition is submitted.

**NOTE:** Students whose parents or guardians reside out of state cannot begin to complete the 12-month requirement until their 19th birthday.

2. The Financial Independence Requirement: Students cannot be approved for residency if they are financially dependent on their parents or legal guardian who are nonresidents of New Mexico. At the time the student applies for residency (if under 23 years of age), a copy of his/her parents' or guardian's 1040 or 1040A U.S. income tax form for the previous year may be required.

3. The Written Declaration of Intent Requirement: The student must sign a written declaration of intent to relinquish residency in another state and establish it in New Mexico.

4. The Overt Act Requirement: Residency regulations require the completion of several overt acts which support the student's declaration of intent to become a permanent resident. Examples of such acts are securing a New Mexico driver's license or automobile registration and registering to vote in New Mexico.

**NOTE:** Any act considered inconsistent with being a New Mexico resident—such as voting, securing and/or maintaining a driver's license and automobile registration in another state—will cause the request to be denied.

**OTHER RESIDENCY REGULATIONS:** Persons and their dependents who move to New Mexico to work full-time, practice a profession or conduct a business full-time (and who can provide appropriate evidence) are not required to complete the 12-month residence requirement before applying for resident status. They must, however, satisfy the other requirements of residency.

Members of the armed forces stationed on active duty in New Mexico, their spouses and dependents are eligible for resident student rates. A certification form is required for all new and returning students.

Noncitizens who are lawfully in the United States and have obtained permanent status from the INS or noncitizens who serve on active duty in the armed forces of the United States may establish residency by meeting the durational and intent requirements. Any noncitizens on other visas (student, diplomatic, visitor or visiting scholar visa including spouses and dependents) are nonresidents for tuition purposes.

Persons, their spouses and dependents, who move to New Mexico for retirement and who provide evidence of formal retirement shall not be required to complete the 12-month durational requirement. They must, however, satisfy the other requirements of residency.

An individual married to a legal resident of New Mexico who provides evidence of marriage shall not be required to complete the 12-month durational requirement but must satisfy all other requirements.

All enrolled members of the Navajo Tribe who reside on the Navajo reservation, as certified by the Navajo Department of Higher Education, will be assessed in-state tuition rates.

A brochure explaining all requirements for establishing New Mexico residency for tuition purposes is available on the Records Office or from any admissions counselor.

# Tuition and Fees

Tuition is charged according to a student's residence and the number of credit hours carried. Some courses have required fees. Audit students pay the same fees as students enrolled for credit.

Upon registering for courses, students receive a registration invoice. In order to complete registration, each student is required to present the invoice to the cashier and pay all charges **by the end of the following workday.** Failure to do so will result in the deletion of unpaid courses from the student's schedule.

Authorized agencies that have agreed to pay a student's training expenses are billed by the Institute.

**REGISTRATION FEE:** There is a $17 registration processing fee required each term.

**TUITION:**

| | RESIDENT | NONRESIDENT |
|---|---|---|
| Arts & Sciences Courses | | |
| 1 to 11 credit hours | $22 per credit hour | $61 per credit hour |
| 12 to 18 credit hours | $264 | $732 |
| More than 18 credit hours | $22 per credit hour | $61 per credit hour |
| Developmental and Occupational Courses | | |
| 1 to 11 credit hours | none | $61 per credit hour |
| 12 to 18 credit hours | none | $732 |
| More than 18 credit hours | none | $61 per credit hour |

*Tuition rates and structure are subject to change without notice.*

**BOOKS:** Students enrolled in Arts & Sciences courses, some associate degree programs and the Practical Nursing program must purchase their textbooks. Books are loaned free to students enrolled in certificate program courses but must be paid for if lost or damaged. Students must pay a $25 textbook deposit when they register for classes. The

deposit is refunded if the student returns all textbooks in good condition and the student applies for the refund within one year. Cost of lost or damaged books is deducted from the deposit, and the student is required to redeposit the $25 before registering for another term.

**EQUIPMENT AND SUPPLY FEES:** Many T-VI programs require students to buy personal equipment, such as uniforms in Health Occupations and tool kits in Trades and Technologies. The equipment is issued early in the program and becomes the student's personal property.

Several programs charge a supply fee to cover the cost of expendable items provided by T-VI. Lab fees are charged for some Arts & Sciences and Health Occupations classes.

*Students may not register for a new term until all previous accounts are paid in full.*

**REFUNDS:** The *registration fee* is a processing charge and is refundable only if T-VI cancels all classes in which a student has registered.

*Tuition* is refundable if T-VI cancels a class or if the student withdraws before the 10th day of classes. Full tuition and fees are required for courses added after the beginning of the term. Tuition refunds after the term begins are prorated as follows:

| | |
|---|---|
| Withdrawal prior to the start of the term | 100% |
| Withdrawal during the first five days of the term | 90% |
| Withdrawal during the second five days of the term | 80% |

*Supply and lab fees* are not refundable after the term begins.

*Equipment fees* are not refundable after equipment is issued.

**All divisions of T-VI accept the following in payment of fees or book purchases: cash, money orders, cashier's checks, personal checks (in the amount of fees and book purchases only), and VISA and MasterCard credit cards.**

# Course Fees

## ARTS & SCIENCES COURSES

| | | | |
|---|---|---|---|
| BIO | 115L | $17 | (lab fee) |
| BIO | 121L | $17 | (lab fee) |
| BIO | 122L | $17 | (lab fee) |
| BIO | 124L | $17 | (lab fee) |
| BIO | 139L | $17 | (lab fee) |
| BIO | 200L | $17 | (lab fee) |
| BIO | 223L | $17 | (lab fee) |
| BIO | 224L | $17 | (lab fee) |
| BIO | 239L | $17 | (lab fee) |
| BIO | 247L | $17 | (lab fee) |
| BIO | 248L | $17 | (lab fee) |
| CHEM | 112L | $17 | (lab fee) |
| CHEM | 121L | $17 | (lab fee) |
| CHEM | 122L | $17 | (lab fee) |
| PHYS | 153L | $17 | (lab fee) |
| PHYS | 154L | $17 | (lab fee) |
| PHYS | 163L | $17 | (lab fee) |

## BUSINESS OCCUPATIONS COURSES

| | | | |
|---|---|---|---|
| ACCT | 101L | $15 | (supply fee) |
| ACCT | 102L | $15 | (supply fee) |
| ACCT | 201L | $15 | (supply fee) |
| ACCT | 202L | $15 | (supply fee) |
| BA | 222L | $15 | (supply fee) |
| BA | 284L | $15 | (supply fee) |
| CASH | 101L | $15 | (supply fee) |
| CR | 101L | $15 | (supply fee) |
| CR | 102L | $15 | (supply fee) |
| CR | 201L | $15 | (supply fee) |
| CR | 202L | $15 | (supply fee) |
| CR | 203L | $15 | (supply fee) |
| ENTR | 101L | $15 | (supply fee) |
| LAS | 101 | $15 | (supply fee) |
| LAS | 102 | $15 | (supply fee) |
| LAS | 203 | $15 | (supply fee) |
| LAS | 221 | $15 | (supply fee) |
| LAS | 230 | $15 | (supply fee) |
| SS | 101L | $15 | (supply fee) |
| SS | 102L | $15 | (supply fee) |
| SS | 201L | $15 | (supply fee) |
| SS | 202L | $15 | (supply fee) |
| SS | 203L | $15 | (supply fee) |
| SS | 204L | $15 | (supply fee) |
| SS | 205L | $15 | (supply fee) |
| SS | 298L | $15 | (supply fee) |

## HEALTH OCCUPATIONS COURSES

| | | | |
|---|---|---|---|
| HUC | 121C | $30 | (equipment fee) |
| LPNR | 155L | $15 | (supply fee) |
| MLT | 110L | $55 | (equipment and lab fees) |
| MLT | 112L | $15 | (lab fee) |
| MLT | 201L | $15 | (lab fee) |
| MLT | 202L | $15 | (lab fee) |
| MLT | 203L | $15 | (lab fee) |
| NA | 110L | $30 | (equipment fee) |
| NURS | 121C | $80 | (equipment fee) |
| NURS | 221C | $10 | (equipment fee) |
| PHLB | 101L | $45 | (equipment fee) |
| PRNS | 255L | $25 | (supply fee) |
| RNR | 255L | $15 | (supply fee) |
| RTT | 121C | $75 | (equipment fee) |

## TECHNOLOGIES COURSES

| | | | |
|---|---|---|---|
| ARDR | 101L | $55 | (equipment fee) |
| ARDR | 201L | $40 | (equipment fee) |
| C&S | 101L | $45 | (equipment fee) |
| C&S | 111 | $40 | (equipment fee) |
| DP | 101L | $10 | (supply fee) |
| DP | 111L | $10 | (supply fee) |
| DP | 201L | $10 | (supply fee) |
| DP | 205L | $10 | (supply fee) |
| DP | 208L | $10 | (supply fee) |
| DP | 215L | $10 | (supply fee) |
| ELEC | 116 | $10 | (supply fee) |

## TRADES COURSES

| | | | |
|---|---|---|---|
| ACHR | 101L | $90 | (equipment fee) |
| ACHR | 111L | $70 | (equipment fee) |
| ACHR | 201L | $70 | (equipment fee) |
| AUBO | 101L | $100 | (equipment fee) |
| AUBO | 111L | $75 | (equipment fee) |
| AUBO | 201L | $50 | (equipment fee) |
| AUTC | 101L | $100 | (equipment fee) |
| AUTC | 111L | $90 | (equipment fee) |
| AUTC | 201L | $90 | (equipment fee) |
| BKNG | 101L | $100 | (equipment fee) |
| BKNG | 111L | $30 | (equipment fee) |
| CARP | 101L | $100 | (equipment fee) |
| CARP | 111L | $70 | (equipment fee) |
| CMPR | 101L | $30 | (equipment fee) |
| DIME | 101L | $100 | (equipment fee) |
| DIME | 111L | $130 | (equipment fee) |
| DIME | 201L | $130 | (equipment fee) |
| ELTR | 103L | $100 | (equipment fee) |
| ELTR | 111L | $85 | (equipment fee) |
| ELTR | 201L | $50 | (equipment fee) |
| ELTR | 211L | $50 | (equipment fee) |
| MATT | 101L | $100 | (equipment fee) |
| MATT | 111L | $80 | (equipment fee) |
| MATT | 201L | $70 | (equipment fee) |
| PLMB | 101L | $100 | (equipment fee) |
| PLMB | 111L | $70 | (equipment fee) |
| QUFD | 101L | $100 | (equipment fee) |
| QUFD | 111L | $80 | (equipment fee) |
| SCSE | 101L | $100 | (equipment fee) |
| SCSE | 111L | $95 | (equipment fee) |
| SCSE | 201L | $90 | (equipment fee) |
| TRDR | 104L | $100 | (supply fee) |
| WELD | 101L | $100 | (equipment fee) |

# Standards of Progress

**GRADING:** Two grading scales are used to compute cumulative[1] grade point average (GPA):

| Developmental Studies | | | Arts & Sciences Courses and Occupational Courses | | |
|---|---|---|---|---|---|
| | | GPA | | | GPA |
| S | Satisfactory | — | A | 91–100 | 4.0 |
| P | Progress | — | B | 81–90 | 3.0 |
| U | Unsatisfactory | — | C | 71–80 | 2.0 |
| | | | D[2] | 61–70 | 1.0 |
| | | | F[2] | Failing | 0.0 |
| | | | I[3] | Incomplete | — |
| | | | W | Withdrew | — |
| | | | AU[4] | Audit | — |
| | | | TR[5] | Credit | |

*[1]Cumulative GPA is based on all courses except Developmental Studies.*
*[2]A grade of D or F is unsatisfactory and is not considered passing for a course that is a prerequisite for any other course.*
*[3]The "I," incomplete grade, will only be granted by instructors when the student, due to emergency situations during the last two or so weeks of a term, is unable to complete the course. An "I" is not given to avoid a failing grade or to allow extra time to complete work normally expected.*
*[4]An audited course does not earn credit and is not computed in the GPA. The cost is the same as for hours taken for credit.*
*[5]Grade given for credit by challenge or transfer.*

**HONOR ROLL:** A "Vice President's Honor Roll" is compiled each term listing full-time students earning GPAs of 3.6 to 4.0.

**GRADE REPORTS:** Progress reports (grades) are given at midterm. These grades are not a part of the student's permanent record.

Final grades are issued at the end of each term and are reflected on the student's transcript and calculated in both a term GPA and a cumulative GPA. Grades received in Developmental Studies courses, however, are not included in GPA computations.

A student who receives an I (Incomplete), U (Unsatisfactory), D or F as a final grade may not enroll

in any class for which the former is a prerequisite. An I is converted to a grade upon completion of the missing work. It must be removed by the 10th day of the following term or it will be permanently recorded as an F or U.

**REPETITION OF A COURSE:** A student may choose to repeat a course for a better grade. Both grades will appear on the transcript and become a part of the cumulative GPA.

**GRADE APPEAL:** Students may formally appeal only final failing grades. Appeal forms are available from department offices. The following steps must be followed:

- **Step 1:** Appeal must be made to the instructor in writing specifying the student's reasons or substantiation for the requested grade change. The appeal must be made by the end of the first week of classes in the following term. If the matter is not satisfactorily resolved at this level, the student may appeal to the department dean.
- **Step 2:** Appeal to the department dean must be made in writing by the student within five days of the instructor appeal conference. The dean will appoint a board to hear the appeal within one week. *The written decision of the board (two faculty members and one student) is final.*

**ACADEMIC PROBATION AND SUSPENSION:** To remain in good academic standing, a student must have a cumulative GPA of 2.0. All work attempted in the Instructional Division except Developmental Studies courses is used in computing a GPA. Students with a GPA below 2.0 are placed on *warning, probation* or *suspension* as indicated below.

- **Warning:** A student whose cumulative GPA is between 1.50 and 1.99 in a given term will receive a warning.
- **Probation:** A student whose cumulative GPA falls below 1.50 in a given term will be placed on probation effective with the following term.
- **Suspension:** After two consecutive terms of probation, a student will be suspended from T-VI. The duration of the initial suspension is one term; for subsequent suspensions, one full year. A student may be eligible to enroll in Developmental Studies during the suspension period. A student who has been suspended must have department dean approval for readmission to the same program or major.

# Attendance Policies

Students enrolled for credit or audit are expected to attend all class sessions. Instructors will take attendance. Students with excessive absences (15% of total class hours) may be dropped from the class.

Absences do not relieve students of the responsibility for missed assignments and exams. Students must take the initiative in arranging with their instructors to make up missed work.

See the Health Occupations student handbook for specific rules in those programs.

**READMISSION:** A student dropped for attendance reasons may apply to renter T-VI the following term.

# Graduation Policies

**GENERAL REQUIREMENTS:** To graduate from T-VI, a student must have a 2.0 cumulative GPA. Degree and certificate students must satisfactorily complete all course requirements by graduation. A student's last term of coursework must be completed at T-VI.

**DEGREE REQUIREMENTS:** In addition to the general requirements listed above, students enrolled in degree programs must also earn a minimum of 60 credit hours (most programs require more), and a minimum of 15 credit hours in residency after a degree becomes available.

**DEGREES AND CERTIFICATES:** Students enrolled in degree programs will receive an Associate in Arts (AA), Associate in Science (AS) or Associate in Applied Science (AAS) degree upon completion of all requirements. Students in degree programs who complete all certificate requirements may apply for a certificate without changing their status. Certificates are awarded *en route* to the degree, if applicable.

**APPLICATION FOR GRADUATION:** Students in associate degree programs or certificate programs of three or more terms must complete an "application for graduation" form by the tenth day of the graduation term. Students in certificate programs of one or two terms do not have to complete the form.

Failure to apply for graduation may delay graduation. Students who have completed all course requirements but have failed to apply for graduation must pay the $17 registration fee, apply for graduation and, if approved, receive their certificate or degree at the end of the term in which they apply.

Application forms are available in the department counselors' offices and must be returned there. If a student is determined ineligible for graduation, a copy of the form with reasons for ineligibility will be returned to the student.

**CHOICE OF CATALOG:** The application form for a degree or certificate requires a student to specify the catalog year listing degree or certificate requirements. Students may choose to graduate under the catalog which was in effect when they entered the program or any subsequent catalog, provided the selected catalog is not more than five years old when the degree or certificate requirements are completed and provided the student has been in continuous enrollment. Those whose enrollment is discontinuous graduate under the catalog that is current upon their return.

**CONTINUOUS ENROLLMENT:** In order to maintain continuous enrollment for graduation purposes, a student must be registered for courses past the tenth day of the term (not including Saturdays) each successive term. No record is kept of a student's enrollment if he/she withdraws prior to that date.

A student who has interrupted his/her attendance by not enrolling past the tenth day of the term has discontinued enrollment at T-VI, must be readmitted to the institution and must enter under the terms of the catalog in effect at the time of re-admission.

**GRADUATION WITH HONORS:** Students earning cumulative GPAs of 4.0 graduate "with highest honors." Students with cumulative GPAs of 3.6 to 3.9 graduate "with honors." Degrees and certificates note these awards.

# Student Records

Permanent records are kept for each Instructional Division student. The transcript shows all courses taken, hours and credits for the courses, final grades and supervised work experiences.

At admission, students authorize T-VI to provide confidential copies of transcripts to employers and other educational institutions. Students not wanting this service may so indicate on the transcript at any time by making a request in writing to the Main Campus Records Office or the Student Services Center at the Montoya Campus.

Students may examine any documents in their cumulative records. Free copies of transcripts are provided to students and former students on request at the Records Office. All other uses of student records are in accordance with the Federal Family Educational Rights and Privacy Act of 1974 and its amendments. Copies of the law are available for examination upon request in the Records Office at Main Campus and the Student Services Center at Montoya Campus.

# Financial Aid

Although responsibility for educational costs rests primarily with the student and his or her family, T-VI is dedicated to helping each student acquire a quality education. The U.S. government, the state of New Mexico and T-VI all contribute money to help students pursue a higher education.

A student does not have to be accepted for admission to T-VI before applying for financial aid. Students are encouraged to apply as early as possible, since processing may take up to 10 weeks.

Financial aid applications are available at T-VI's two financial aid offices: One is located in the C Building at the Main Campus and is open 8 a.m. to 5 p.m. Monday through Friday. The other is located in Student Services, G Building, on the Joseph M. Montoya Campus and is open from 7:30 a.m. to 4:30 p.m. Monday through Friday.

Students at T-VI can receive aid through grants, loans and work study programs, most of which are based on financial need. Students may receive aid through one of these programs or a combination of the three.

Transfer students applying for financial aid must provide financial aid transcripts from every post-secondary school they have previously attended, even though they may not have received any financial aid from these institutions.

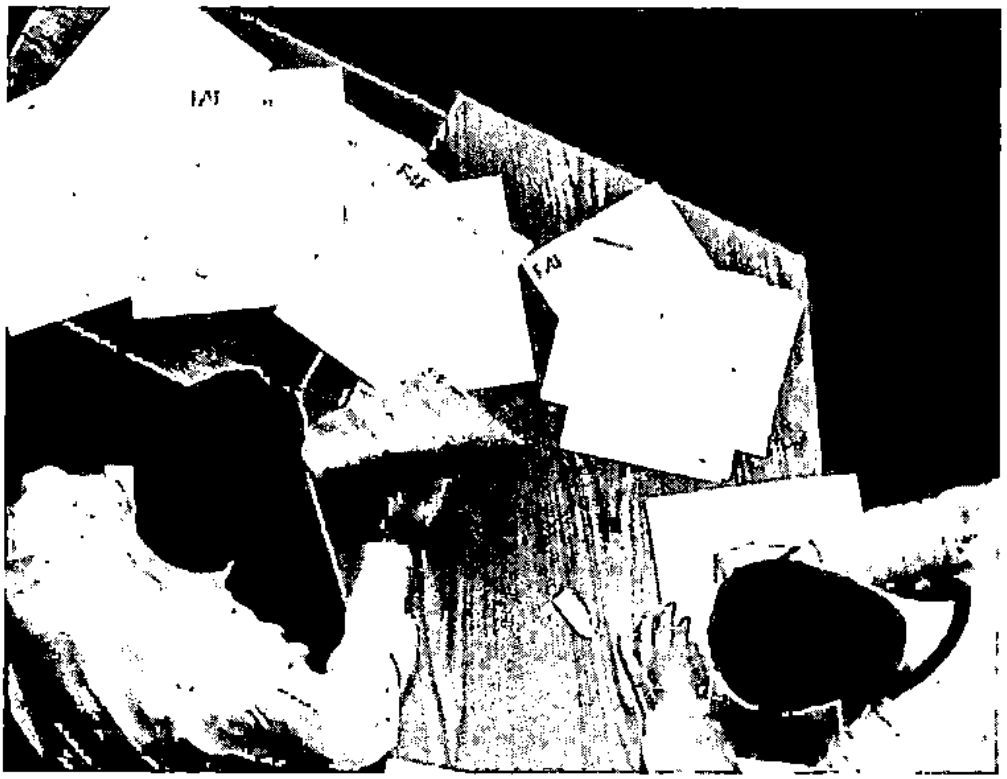
Students should refer to the 1990–91 T-VI Student Financial Aid Guidebook for more detailed information.

**Students applying for the following programs must complete a Financial Aid Form. A student must have need to receive aid from the grants, loans and other programs listed below. The need of each student is determined by a needs analysis based on the information the student provided on the Financial Aid Form.**

**Most checks are distributed by the Financial Aid Office in conjunction with the Business Office, Room M-101, between 8 a.m. and 4:30 p.m. Monday through Friday. Loan recipients are generally paid on the first business day after the 10th day of class in the west atrium of the C Building. Otherwise, loan checks will arrive four to six weeks after a student has submitted an application. On these occasions, checks are released by the Business Office.**

**PELL GRANT:** This program provides federal grants, or gift aid, to undergraduate students. To be eligible for a Pell Grant a student must be a U.S. citizen or an eligible non-citizen and be enrolled in an eligible program. The student cannot have a bachelor's degree.

Pell Grant awards currently range from $200 to



$2,300 per year, depending on a student's enrollment status and Pell Grant Index.

Students may pick up their Pell Grant checks on the last class day of the first month of each term. Supplemental distributions are scheduled on the last class day of each month for students whose Pell file was not complete by the regular distribution date.

**SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT (SEOG):** SEOG provides federal grants to needy students to help pay for their postsecondary education. This federal money is limited and available only to students with exceptional financial need. Students with exceptional financial need are those who receive a Pell Grant, have the lowest expected family contribution and have unmet financial need.

SEOG awards at T-VI range from $100 to $300 a year, and the checks are usually distributed in the middle of each term.

**NEW MEXICO STUDENT INCENTIVE GRANT (NMSIG or SSIG):** New Mexico residents who are full-time students, have received a Pell Grant and have the highest unmet financial need are eligible for SSIG awards. If funds are available, part-time students may also be eligible. Awards at T-VI range from $250 to $750 per year. Checks are generally distributed in the middle of the term.

**STAFFORD LOAN (FORMERLY GSL):** Since loan eligibility is based on need, students must apply for a Pell Grant before filling out a Stafford Loan application. Students must be enrolled half time in an eligible program and they must remain in good standing to receive a Stafford Loan.

Students may borrow up to $2,625 per year, but they will not receive the full amount of their Stafford Loan until one half of their loan term has expired.

A list of participating lenders is available at the Financial Aid Office.

The current interest rate is 8 percent. Students must begin to repay the loan when they leave school or when they drop below half-time status. The minimum monthly payment is $50 per month.

**SUPPLEMENTAL LOANS FOR STUDENTS (SLS):** Since loan eligibility is based on need, students must apply for a Pell Grant and Stafford Loan before applying for an SLS. Only self-supporting students can apply for an SLS and only after they have exhausted all other resources.

To apply for an SLS students must have either a high school diploma or GED (General Educational Development) certificate. Therefore, students admitted under ability to benefit are not eligible to receive an SLS.

All first-year students at T-VI, whether they have a degree or not, must wait 30 days after the term begins before they can receive their check.

Students enrolled in a program three terms or longer may borrow up to $4,000 per academic year. A student enrolled in a two-term program may only borrow up to $2,500. Students enrolled in a one-term program may only borrow up to $1,500.

The interest rate for SLS varies, but it will not exceed 12 percent. Students must begin repaying these loans 60 days after they received their last check. The minimum monthly payment is $50 per month.

**PARENT LOANS FOR UNDERGRADUATE STUDENTS (PLUS):** Students must apply for a Pell Grant and a Stafford Loan before their parents can apply for PLUS. PLUS is designed to help the parents of dependent students who need additional funding after a student has exhausted all other resources.

All first-year students at T-VI, whether they have a degree or not, must wait 30 days after the term begins before they can receive their check.

The interest rate for PLUS varies, but it will not exceed 12 percent. The most a parent may borrow is $4,000 per year per student. The parent must begin repaying the loan 60 days after the student received his/her last check. The minimum monthly payment is $50 per month.

**NEW MEXICO NURSING STUDENT LOAN (NMNSL):** New Mexico residents enrolled in either a Licensed Practical Nurse or an Associate Degree in Nursing program may apply for a New Mexico Nursing Student Loan. The most a student can borrow is $2,500 per year. Loan recipients must agree to repay the loan with service in an underserved area in New Mexico.

**PERKINS LOAN:** T-VI does not participate in the Perkins Loan Program.

**COLLEGE WORK STUDY (CWS):** College Work Study helps needy, eligible students with jobs at T-VI. The student employee may work up to 40 hours per pay period (two weeks). CWS students are paid $4.25 per hour.

**NEW MEXICO WORK STUDY (NMWS):** This program helps students pay for their education by providing jobs at the Institute. An eligible student does not have to show financial need to participate in the program. The student employee may work up to 40 hours per pay period (two weeks). New Mexico Work Study students are paid $4.25 per hour.

**T-VI WORK STUDY:** To participate in this program an eligible student does not have to show financial need. The student must be enrolled at least half time in the Instructional Division and have at least a 2.0 grade point average. Students may work up to 40 hours per pay period (two weeks), and they are paid $4.25 per hour.

**Students interested in receiving financial aid from the following programs must apply directly with the agency.**

**Veterans Administration:** The Veterans Administration approves most full-time programs at T-VI. Students planning to apply for VA benefits must have their class schedule approved and their enrollment certified by a T-VI VA representative. Students who fail to complete a course during a term in which they have received VA benefits must repay the full amount unless they can prove mitigating circumstances.

Veterans transferring from other institutions of higher learning must provide official academic transcripts from every postsecondary school they have previously attended.

Information on eligibility is available at any Veterans Administration office. The Albuquerque office is located at 500 Gold SW, 766-3361.

**New Mexico Division of Vocational Rehabilitation (DVR):** Disabled persons may be eligible for educational and training benefits from DVR. The Albuquerque offices include: 300 San Mateo NE, 841-4560; 2720 Isleta Blvd. SW, 841-8800; 2221 Rio Grande Blvd. NW, 841-8752.

**Job Training Partnership Act:** This agency helps students with education and training if they are unemployed, underemployed or economically disadvantaged. Students should contact the New Mexico Employment Security Department at 841-9362, the Albuquerque Job Corps Center at 842-6500 or Work Unlimited at 768-6060 for information on eligibility. Native Americans should contact the National Indian Youth Council (NIYC) Employment and Training Project at 247-2251 or their tribal offices for the same information.

**Stay in School:** Stay in School is a federal program designed to help needy students pay for their education by placing them in government jobs. Most of the jobs are located at Kirtland Air Force Base or the U.S. Forest Service. The student may work up to 20 hours per week, and the pay depends on the job assignment. Many positions pay more than minimum wage.

Eligible students must be at least 16 years old, prove economic hardship and enroll in an eligible program consisting of at least 15 clock hours of instruction per week. Interested students may pick up application information from the Financial Aid Office at either campus.

**Standards for Satisfactory Academic Progress for Financial Aid Purposes:** Academic transcripts are reviewed each term. The academic progress of all students applying for financial aid is reviewed, even those who have never received financial aid. Students will be placed on financial aid probation or suspension if they do not meet the following standards:

- Students must maintain a cumulative grade point average of at least 2.0 (a C average). Grade point values for financial aid eligibility are: A = 4.0, B = 3.0, C = 2.0, D = 1.0, F = 0, S = 3.0, P = 2.0, U = 0, I = 0. W, AU, and TR are not counted. W stands for withdrawal, AU for auditing, and TR for grades given for credit by challenge exam or transfer. The average is computed by multiplying each final grade point value by the number of credit hours, totaling all grade points, and dividing the total points by the total number of credit hours for which there are final grades for the last five years.
- Students may not change their major a second time unless they have completed (graduated from) a program they have attempted.
- Students must complete their program within a reasonable number of terms.
- Students must complete a minimum number of credit hours each term.
- For satisfactory academic progress one term is the equivalent of full-time enrollment (12 credit hours or more per term).

**Financial Aid Probation and Suspension:** If students do not meet the above requirements, the Financial Aid Office will place them on paid probation for one term. Paid probation does not apply to those students who have exceeded the maximum allowable terms in a program, changed their major a second time, or were not making satisfactory progress at the time they applied for aid. These students may appeal, however, if there are mitigating circumstances.

Students on financial aid probation who fail to meet the above requirements during probation will be suspended from receiving further financial aid. Financial aid will be reinstated if the student completes one term meeting all of the above requirements. Terms spent on financial aid probation or suspension are counted in the maximum allowable time a student has to complete his or her degree or certificate.

A student who has been suspended from financial aid may appeal that decision. Reinstatement by the Director of Financial Aid will be based on mitigating circumstances that contributed to the student's deficient academic performance.

**The Appeal Process:** The following steps are required for the appeal process:

The student must obtain and fill out an appeal form from the Financial Aid Office, attaching all required supporting documentation.

The Director of Financial Aid will review the appeal and approve or disapprove reinstatement of financial aid.

The Financial Aid Office will notify students of the results of their appeal within ten working days from the date the appeal was submitted.

**Student Loans:** In addition to the above standards, students participating in Stafford Loan, Parent Loans for Undergraduate Students, Supplemental Loans for Students and New Mexico Nursing Student Loan programs must adhere to the following standards:

Students must complete each term within their loan period in at least half-time status (6 credit hours). Failure do so results in the automatic cancellation of all future disbursements covered in the loan period. The decision to cancel the loan is final and cannot be appealed.

Students who withdraw from all their classes during a term in which they received a loan must successfully complete a term (at least six credit hours) before they may apply for another loan.

**Deferments:** Students awarded enough financial aid to cover their tuition and other costs may defer those costs until their financial aid check arrives. If the student's financial aid cannot meet all the costs, the balance is the student's responsibility. For those who deferred their costs, T-VI deducts what they owe from their check when it arrives. The student receives the difference.

It is also a student's responsibility to pay for tuition, equipment fees, textbooks and/or any other T-VI charges if his or her financial aid check does not arrive or is canceled for any reason. If a student's balance is not paid on or before midterm, a hold will be placed on the student's registration and academic records and his or her account may be turned over for collection.

To apply for Financial Aid deferment, students should contact the Financial Aid Office.

**Refunds:** A student who withdraws from school may be due a refund depending on when he or she withdrew. If the student received Title IV funds, the Financial Aid Office must return a portion of that refund to the applicable Title IV programs. (Title IV programs include Pell Grant, SEOG, College Work Study, Stafford Loan, SLS and PLUS.)

T-VI uses the following formula to determine the portion of the refund to be returned to Title IV programs. College Work Study is excluded from the calculation.

### Refund Formula

$$\text{Amount of Overpayment} \times \frac{\text{Total Title IV Funds}}{\text{Total Financial Aid}} = \text{Amount to be Returned to Title IV Programs}$$

**Repayment of Cash Disbursements:** If a student who received cash for living expenses withdraws from school and the cash received is greater than the cost of living expenses up to the withdrawal date, the student must repay a portion of the amount received. Living expenses are calculated in increments of one month.

T-VI uses the following formula to determine the portion of the repayment to be returned to the applicable Title IV program(s). College Work Study, Stafford Loan, SLS and PLUS programs are excluded from the calculation.

### Repayment Formula

$$\text{Amount of Overpayment} \times \frac{\text{Total Title IV Funds}}{\text{Total Financial Aid}} = \text{Amount to be Returned to Title IV Programs}$$

**Distribution Policy:** The Financial Aid Office distributes an assigned portion of a student's refund or repayment in equal amounts to each of the applicable Title IV programs.* The allocated portion will not exceed the amount that the student received from a program. In the case of SLS, PLUS or Stafford Loan programs, assigned portions will be returned to the student's lender.

# ARTS & SCIENCES DEPARTMENT

Arts & Sciences, one of six instructional departments at T-VI, provides liberal arts courses to support degree programs, and offers an associate in arts degree. All courses are transferable as freshman and sophomore electives or requirements at other degree-granting institutions.

All Arts & Sciences courses have a tuition charge. Science courses also have lab fees (see page 16). Some courses carry prerequisites or corequisites.

## Associate in Arts Degree in Liberal Arts

This degree is designed to meet diverse educational interests. It provides the general curriculum of the first two years of baccalaureate study for transfer purposes or as an end in itself.

Fulfillment of the degree requirements listed below and institutional requirements listed on page 18 of the catalog is required for graduation.

Some disciplines and courses not offered by the Arts & Sciences Department may be accepted in transfer toward the degree requirements. For information about transfer work, contact the Arts & Sciences Office.

### LIBERAL ARTS DEGREE PROGRAM

| | Cr Hrs |
|---|---|
| *Communications* | |
| English writing courses (must include ENG 102) | 6 |
| Communication Studies | 3 |
| *Computer Science* | |
| Computer Science 101 or equivalent | 3 |
| *Social and Behavioral Sciences* | |
| Anthropology<br>Economics<br>Geography<br>Political Science<br>Psychology<br>Sociology | |
| No more than 6 credits from any one discipline | 9 |
| *Biological and Physical Science* | |
| Astronomy<br>Biology<br>Chemistry<br>Geology<br>Physics | |
| 2–3 courses (must include one lab course) | 7–8 |
| *Humanities* | |
| General Honors<br>History<br>Humanities<br>Literature (English, foreign or comparative)<br>Philosophy | |
| No more than 6 credits from any one discipline | 9 |
| *Mathematics* | |
| One course numbered above Math 120 | 2–3 |
| *Fine Arts and Foreign Languages* | |
| (Fine Arts courses must be in history, appreciation or criticism) | |
| Any two courses | 6 |
| *Electives* | |
| Any Arts & Sciences courses | 17–19 |
| Total | 64 |

### COURSE DESCRIPTIONS

#### BIOLOGICAL AND PHYSICAL SCIENCE

**BIO 111—Environmental Science (3 cr)**
This course surveys environmental problems and the role of man in the environment. Topics include the functions of the biosphere and its ecosystems, and solutions to problems.

**BIO 115L—Biophysical Science (4 cr)**
This is an introduction to the natural sciences of biology, chemistry and physics, and emphasizes their application to the human organism. Laboratory complements lecture by focusing on laboratory procedures and techniques. Three hours of lecture and one three-hour lab are taken concurrently. Familiarity with college algebra is recommended.

**BIO 121L—Principles of Biology I (4 cr)**
This course emphasizes the development of concepts. Topics include impact biology, biological chemistry, Mendelian inheritance, molecular genetics and embryology. Three hours of lecture and one three-hour lab are taken concurrently. Familiarity with college algebra is recommended.

**BIO 122L—Principles of Biology II (4 cr)**
(*Prerequisite: BIO 121L*) Emphasizing the development of concepts, topics include population genetics, evolution, ecology, behavior, plant and animal physiology, and the diversity of organisms. Three hours of lecture and one three-hour lab are taken concurrently.

**BIO 123—Biology for Health Sciences (3 cr)**
(*Corequisite: BIO 124L*) Principles of cell biology, cell chemistry, genetics and organismic biology are studied with an emphasis on human systems. Familiarity with college algebra is recommended.

**BIO 124L—Biology Lab for Health Sciences (1 cr)**
(*Corequisite: BIO 123*) Laboratory exercises, demonstrations and dissections related to cell biology, organ systems and genetics are conducted.

**BIO 136—Human Anatomy and Physiology for Non-Majors (3 cr)**
(*Corequisite: BIO 139L*) The relationship of structure to function at the cellular and gross anatomical levels are among the fundamental concepts covered in this course.

**BIO 139L—Human Anatomy and Physiology Lab for Non-Majors (1 cr)**
(*Corequisite: BIO 136*) Exercises in anatomy and physiology, including demonstrations and dissections, are covered in this course.

**BIO 200L—General Ecology (4 cr)**
(*Prerequisite: BIO 122L*) Students are introduced to the interrelationships of organisms to their environment through the study of populations, communities, ecosystems and the biosphere. Three hours of lecture and one three-hour lab are taken concurrently.

**BIO 221—Introductory Genetics (3 cr)**
(*Prerequisite: BIO 122L or permission of the instructor; corequisite: BIO 223L*) Emphasis is placed on the structure, function and transmission of hereditary factors.

**BIO 223L—Introductory Genetics Lab (1 cr)**
(*Corequisite: BIO 221*) Lab exercises using fruit flies and lower organisms illustrate the principles introduced in the lecture corequisite.

**BIO 224L—Southwestern Natural History (4 cr)**
Three hours of lecture and three hours of lab or field trips (one or more overnight) present the natural history and identification of southwestern flora and fauna.

**BIO 237—Human Anatomy and Physiology I (3 cr)**
(*Prerequisites: BIO 115L or a combination of BIO 123/124L or BIO 121L and CHEM 111/112L or CHEM 121L; corequisite: BIO 247L*) This course is an integrated study of human structure and function that covers the integumentary, skeletal, muscular and nervous systems.

**BIO 238—Human Anatomy and Physiology II (3 cr)**
(*Prerequisites: BIO 237/247L; corequisite: BIO 248L*) This course continues BIO 237 and covers the structure and function of the cardiovascular, respiratory, digestive, urinary, reproductive and endocrine systems.

**BIO 239—Microbiology for Health Sciences (3 cr)**
(*Prerequisites: BIO 115L or a combination of BIO 123/124L or BIO 121L and CHEM 111/112L or CHEM 121L; corequisite: BIO 239L*) The concepts of microbiology, host-parasite relationships, infection and immunity are introduced.

**BIO 239L—Microbiology Lab for Health Sciences (1 cr)**
(*Prerequisites: BIO 115L or a combination of BIO 123/124L or BIO 121L and CHEM 111/112L or CHEM 121L; corequisite: BIO 239*) In three-hour-per-week laboratory sessions, students study laboratory techniques with microorganisms and observe the growth of microorganisms, control and sanitation.

**BIO 247L—Human Anatomy and Physiology Lab I (1 cr)**
(*Prerequisites: BIO 115L or a combination of BIO 123/124L or BIO 121L and CHEM 111/112L or CHEM 121L; corequisite: BIO 237*) This course provides anatomical and physiological laboratory exercises coordinated with the topics covered in BIO 237. Specimen dissection and cadaver study are included.

**BIO 248L—Human Anatomy and Physiology Lab II (1 cr)**
(*Prerequisites: BIO 115L or a combination of either BIO 123/124L or BIO 121L and CHEM 111/112L or CHEM 121L; corequisite: BIO 238*) This course provides anatomical and physiological laboratory exercises coordinated with the topics covered in BIO 238. Specimen dissection and cadaver study are included.

**BIO 296—Topics in Biology (1–3 cr)**
Various topics in biology are presented.

**CHEM 111—Introduction to Chemistry (3 cr)**
(*Corequisite: CHEM 112L*) This course is designed for nonscience majors in the health sciences. Instruction is provided in the basic concepts of chemistry.

**CHEM 112L—Introduction to Chemistry Lab (1 cr)**
(*Corequisite: CHEM 111*) Laboratory instruction, demonstration and experimentation are the focus of this course.

**CHEM 121L—General Chemistry I (4 cr)**
(*Prerequisite: MATH 121 or MATH 150 with a minimum grade of C*) Students are introduced to the chemical and physical behavior of matter through lecture and laboratory instruction. Three hours of lecture and one three-hour lab are taken concurrently.

**CHEM 122L—General Chemistry II (4 cr)**
(*Prerequisite: CHEM 121L*) In this continuation of CHEM 121L, students meet for three hours of lecture and one three-hour lab per week.

**CHEM 212—Organic Chemistry and Biochemistry (4 cr)**
(*Prerequisite: CHEM 111/112L or CHEM 121L*) Surveying the interrelationships between organic chemistry and biochemistry, this course is of interest to students in the health fields.

**CHEM 296—Topics in Chemistry (1–3 cr)**
Various topics in chemistry will be offered.

**PHYS 102—Introduction to Physics (3 cr)**
This general-interest course for nonscience or science majors introduces the basic concepts and phenomena of physics. In conjunction with practical demonstrations and applications, the

. course is descriptive. Students need only a minimum of elementary mathematics.

**PHYS 151—Physics I (3 cr)**
(*Prerequisite: Any of the following courses with a minimum grade of C—MATH 121 or MATH 150 or MATH 180*) Through lectures and demonstrations, this course is a study of mechanics, sound and heat. This is a noncalculus-based course which satisfies premedical, predental, preoptometry, and certain technologies requirements.

**PHYS 152—Physics II (3 cr)**
(*Prerequisite: PHYS 151*) Using lecture and demonstration, this course presents the areas of electricity, magnetism and optics.

**PHYS 153L—Physics I Lab (1 cr)**
(*Pre- or corequisite: PHYS 151*) Experimental technique and demonstration of the principles and phenomena of physics are the focus of experiments in mechanics, heat and sound.

**PHYS 154L—Physics II Lab (1 cr)**
(*Pre- or corequisite: PHYS 152*) This laboratory course features experiments in electricity, magnetism and optics.

**PHYS 157—Problems in Physics I (1 cr)**
(*Corequisite: PHYS 151; offered on an audit basis only*) Recitation and problem-solving are handled in relation to PHYS 151.

**PHYS 158—Problems in Physics II (1 cr)**
(*Corequisite: PHYS 152; offered on an audit basis only*) Recitation and problem-solving are handled in relation to PHYS 152.

**PHYS 160—General Physics I (4 cr)**
(*Pre- or corequisite: MATH 162*) A study of mechanics and sound waves is offered in this course. Topics and demonstrations include Newton's law of motion, force, moments, friction, work, energy, power, momentum and longitudinal wave properties.

**PHYS 161—General Physics II (4 cr)**
(*Prerequisite: PHYS 160; pre- or corequisite: MATH 163*) Lectures in heat, electricity and magnetism are supplemented by demonstrations.

**PHYS 163L—General Physics Lab (1 cr)**
(*Pre- or corequisite: PHYS 160*) Topics introduced in the corequisite course are explored in the laboratory.

**PHYS 167—Problems in General Physics I (1 cr)**
(*Corequisite: PHYS 160; offered on an audit basis only*) Recitation and problem-solving are handled in matters relating to PHYS 151 and PHYS 160.

**PHYS 168—Problems in General Physics II (1 cr)**
(*Corequisite: PHYS 161; offered on an audit basis only*) Recitation and problem-solving are handled in matters relating to PHYS 152 or PHYS 161.

**PHYS 262—General Physics III (4 cr)**
(*Prerequisite: PHYS 161; pre- or corequisite: MATH 264*) This course is the third in the calculus-based sequence for science and engineering students. It is a study of optics and topics in modern physics.

**PHYS 267—Problems in General Physics III (1 cr)**
(*Corequisite: PHYS 262; offered on an audit basis only*) Recitation and problem-solving are related to topics in PHYS 262.

## COMMUNICATIONS

**COMM 110—Mass Media and Society (3 cr)**
Newspapers, TV, magazines and radio play a significant role in American society. This course examines that role and its effect on other forms of communication, from interpersonal to public, and introduces the economic and developmental history of mass media.

**COMM 130—Public Speaking (3 cr)**
This class blends theory and practical application. Students prepare, present and critique speeches of their own and critique speeches of others. Knowledge and skills gained in this course will assist students in meeting professional and personal goals.

**COMM 221—Interpersonal Communication (3 cr)**
Through group activities, discussion and lecture, this course introduces concepts of perception, emotions, nonverbal communication, listening, defensiveness and relational conflict. Students develop awareness of communication styles and skills to enhance their interpersonal effectiveness in professional and personal relationships.

**COMM 232—Business and Professional Speaking (3 cr)**
This class is a practical introduction to the principles and skills needed to communicate effectively for on-the-job success in business and professional settings. Emphasis is on developing, organizing and supporting ideas in interpersonal business encounters, groups and meetings, and platform presentations.

**COMM 240—Organizational Communication (3 cr)**
This course provides an introduction to communication and organizational theory. Communication networks, power and authority, manager/employee relationships and leadership are examined. Emphasis on communication patterns and practices makes this an important course for all who work in organizations.

**COMM 270—Communication for Teachers (3 cr)**
This course emphasizes a systems approach to classroom communication at any level and provides teachers with a means to analyze, develop and facilitate effective communication in the classroom. The course includes application of theory in relational development, nonverbal communication, small groups, communication barriers and presentations.

**COMM 293—Topics in Communication Studies (1–3 cr)**
Topic offerings vary from term to term.

**ENG 101—Writing with Readings in Exposition (3 cr)**
(*Prerequisite: One of the following—ACT [see p. 12 for scores], ENG 100, or passing first-day qualifying exam*) This course stresses expository writing and reading. It concentrates on organizing and supporting ideas in essay writing.

**ENG 102—Analytic Writing (3 cr)**
(*Prerequisite: ENG 101 with a minimum grade of C or a minimum ACT score of 25 if taken before November 1989, or 29 if taken after November 1989*) Students undergo intensive practice writing essays that analyze expository and literary readings.

**ENG 119—Technical Communications (3 cr)**
(*Prerequisite: ENG 101 with a minimum grade of C or a minimum ACT score of 25 if taken before November 1989, or 29 if taken after November 1989*) This is an introductory study of written and verbal communications. Topics covered include descriptive and process analysis, informal reports and proposals, short logs/reports for lab and field work, basic production of graphics, letter writing and oral presentation.

**ENG 219—Technical Writing (3 cr)**
(*Prerequisite: ENG 102*) A study of the most common types of writing in industry, research laboratories, business and other professional settings. Instruction includes correspondence and memos, abstracts, proposals, bibliographies and reviews, and various formal and informal reports presented orally and in writing.

**ENG 220—Expository Writing (3 cr)**
(*Prerequisite: ENG 102*) This study of advanced composition concentrates on expository, analytic and argumentative writing.

**ENG 221—Creative Writing: Fiction (3 cr)**
(*Prerequisite: ENG 101 or permission of instructor*) Student work is supplemented by texts and discussion on writing as a creative process.

**ENG 222—Creative Writing: Poetry (3 cr)**
(*Prerequisite: ENG 101 or permission of instructor*) Student poetry is supplemented by texts and discussion on writing as a creative process.

**ENG 240—Traditional Grammar (3 cr)**
This course presents a study of traditional grammar, emphasizing basic analysis of English sentences. Students are introduced to terminology and methods for identifying parts of speech, functional units of sentences and basic sentence patterns.

## COMPUTER SCIENCE

**CSCI 101—Computer Literacy (3 cr)**
This introductory course provides lecture and laboratory instruction in the use of computers. Lecture topics emphasize understanding how computers work. Lab time covers the basics of software application.

**CSCI 150—Computing for Business Students (3 cr)**
(*Prerequisite: MATH 120 with a minimum grade of C*) Using personal computers, students will learn the use of a word processor, a spreadsheet and simple database management system. Programming in BASIC is also introduced.

**CSCI 155L—Introduction to Computer Programming (4 cr)**
(*Prerequisite: MATH 121 with a minimum grade of B or MATH 150 with a minimum grade of C*) This course is an introduction to the skill of computer programming. Understanding the relationship between programming and problem solving, using programs written in Pascal, is the main objective.

## FINE ARTS AND LANGUAGES

**ART 101—Introduction to Art (3 cr)**
Students are introduced to the fundamental concepts of visual arts as well as the language of form and media of artistic expression. Instruction centers around readings and slide presentations. Some museum exhibition attendance may be required.

**ART 151—Art of the American Southwest (3 cr)**
Emphasizing major forms of expression—pottery, textiles, jewelry, architecture, painting and photography—the interrelationships of three southwestern cultures are explored in slide lectures and field trips.

**ART 201—History of Art I (3 cr)**
A survey of Near Eastern, Egyptian, Greek, Roman, early Christian, Byzantine, early Medieval, Romanesque and Gothic art and architecture, this course's lectures are supplemented by slides.

**ART 260—Architectural History: Ancient through Modern (3 cr)**
Supplemented by slides, lectures survey the history of Western architecture from the pyramid to the post-Modernist house.

**FREN 101—Elementary French I (3 cr)**
Beginning French for students with no previous exposure to the language, this course develops all four language skills, with emphasis on listening comprehension and speaking.

**FREN 102—Elementary French II (3 cr)**
(*Prerequisite: FREN 101 or permission of the instructor*) This course continues developing the skills introduced in FREN 101.

**MUS 139—Music Appreciation I (3 cr)**
Through the study of basic musical elements and their development from early Greece to the Classical period, students expand their abilities to listen actively. This course is nontechnical and requires attendance at live musical performances.

**MUS 140—Music Appreciation II (3 cr)**
Through the study of symphonic music, chamber music and vocal literature from the Romantic period to the 20th century,

students will expand their abilities to listen actively. The course content is entirely different from MUS 139. Students will be required to attend live musical performances.

**SPAN 101—Elementary Spanish I (3 cr)**
Designed for students with no previous exposure to Spanish, this course develops all four language skills. Emphasis is on listening, comprehension and grammar.

**SPAN 102—Elementary Spanish II (3 cr)**
(*Prerequisite: SPAN 101 or permission of instructor*) Students continue development of listening and grammar skills. More emphasis is placed on speaking.

**SPAN 103—Elementary Spanish I Conversation (1 cr)**
(*Pre- or corequisite: SPAN 101 or permission of instructor; offered on an audit basis only*) Supplementing SPAN 101, this course provides additional practice in speaking. It does not provide instruction in grammar.

**SPAN 104—Elementary Spanish II Conversation (1 cr)**
(*Pre- or corequisite: SPAN 102 or permission of instructor; offered on an audit basis only*) Supplementing SPAN 102, this course provides additional practice in speaking. It does not provide instruction in grammar.

**SPAN 201—Intermediate Spanish I (3 cr)**
(*Prerequisite: SPAN 102 or permission of instructor*) Students review grammar and expand conversational skills while further developing reading proficiency.

**SPAN 202—Intermediate Spanish II (3 cr)**
(*Prerequisite: SPAN 201 or permission of instructor*) A continuation of SPAN 201, this course provides more conversational activities and more emphasis on writing skills.

**SPAN 203—Intermediate Spanish Conversation (3 cr)**
(*Pre- or corequisite: SPAN 201 or 202 or permission of instructor*) This course is designed to increase skills in speaking Spanish for those students who have previously completed or are currently enrolled in SPAN 201 or SPAN 202. Not for fluent speakers.

**SPAN 296—Topics in Spanish (1–3 cr)**
Various topics in Spanish language and literature will be presented.

## HUMANITIES

**ENG 150—Study of Literature (3 cr)**
(*Prerequisite: ENG 101 or permission of instructor*) An introduction to the study and appreciation of literature, this course shows how understanding writers' techniques increases reading enjoyment and relates these techniques to literary conventions.

**ENG 210—Film as Literature (3 cr)**
(*Prerequisite: ENG 101 or permission of instructor*) Screenings and critical study of major films supplement this course's analyses of film as literature. Students also survey major trends in the history of film.

**ENG 211—Topics in Literature (1–3 cr)**
Specific types or areas of literature are surveyed. Topic variations include the American novel, the short story, quest romances, Native American literature and women's fiction.

**ENG 270—Modern Literature (3 cr)**
(*Prerequisite: ENG 101 or permission of instructor*) American and European literature of the 20th century is introduced. Works by Eliot, Faulkner, Fitzgerald, Yeats, Joyce, Ibsen, Camus and Chekhov are emphasized.

**ENG 282—Modern Latin American Literature (3 cr)**
(*Prerequisite: ENG 101 or permission of instructor*) Chronicles, diaries, drama, poetry, essays and fiction of Latin America will be surveyed, with emphasis on cross-cultural relations between life and literature.

**ENG 296—American Literature (3 cr)**
(*Prerequisite: ENG 101 or permission of instructor*) Students survey literature from colonial to present times. Short stories, poetry, drama and nonfiction are emphasized.

**GNHN 121A—General Honors: The Ancient Legacy (3 cr)**
(*Prerequisite: permission of instructor; see Arts & Sciences counselor for information and application*) A survey of major writers from Homer to Dante, this class will focus on the ideas basic to the intellectual, historic and artistic tradition of Western culture.

**GNHN 121M—General Honors: The Modern Legacy (3 cr)**
(*Prerequisite: permission of the instructor; see Arts & Sciences counselor for information and application*) This course focuses on a later core of readings primary to the understanding of Western thought and society. Students will explore concepts such as free will, social contract, Protestant ethics, humanism, reason, human nature, romanticism and materialism.

**HIST 101—Western Civilization I (3 cr)**
Events, personalities, issues, rises and falls are the focus of this course which covers ancient times through 1648.

**HIST 102—Western Civilization II (3 cr)**
This course explores people and events in their various contexts, such as colonialism; the age of revolutions, expansionism and the Great Wars, from 1648 to the present.

**HIST 161—History of the United States I (3 cr)**
This course is a survey of the economic, political, intellectual and social development of the United States from 1492 to 1877.

**HIST 162—History of the United States II (3 cr)**
A continuation of HIST 161, this course covers the period from 1865 to the present.

**HIST 230—U.S.S.R. Today: People, Politics, Culture (3 cr)**
From economic disintegration and ethnic unrest to rock music and fast food, this course examines major issues of Soviet life as they relate to their historical roots.

**HIST 260—History of New Mexico (3 cr)**
This course explores New Mexico's history from 1500 to the present. The contributions of and interactions among Native Americans, Hispanics, Anglos and others receive special attention.

**HIST 281—Colonial Latin American History (3 cr)**
This course surveys the history of Latin America from pre-Columbian civilizations through the final independence movements of the 1820s.

**HIST 282—Modern Latin American History (3 cr)**
This course examines Latin American history from the beginning of the revolutionary period in 1810 to the present.

**HIST 296—Topics in History (1–3 cr)**
Various topics in the field of history are covered.

**HUM 107—Living World Religions (3 cr)**
Major living world religions are introduced. Students study Buddhism, Christianity, Hinduism, Islam and Judaism.

**HUM 111—Comparative Civilizations I (3 cr)**
The student is given a comparative introduction to the development of human civilizations from their beginnings through the Middle Ages.

**HUM 112—Comparative Civilizations II (3 cr)**
Students are given a comparative introduction to the development of human civilization from the Renaissance through contemporary times.

**HUM 247—Topics in Humanities (1–3 cr)**
A variety of topics of an interdisciplinary nature are explored.

**PHIL 110—Introduction to Philosophical Thought (3 cr)**
This course surveys philosophical issues addressed by great thinkers of the Western tradition. Problems concerning values, knowledge, reality, society, politics and religion are introduced. Some time is given to a comparison of Western philosophical systems with those of Asia.

**PHIL 156—Logic and Critical Thinking (3 cr)**
This course provides the tools of reason which are helpful in everyday decision-making. It also introduces skills for argument analyses and effective communication of ideas. Informal fallacies and formal deductive systems are surveyed.

**PHIL 241—Topics in Philosophy (1–3 cr)**
Topics vary. Students explore a major philosophic issue or give special attention to a great philosopher's works.

**PHIL 245B—Business Ethics (3 cr)**
Ethical problems associated with the field of business are examined. Moral issues such as insider trading, conflicts of interest, employer/employee relations and "whistle-blowing" are viewed from widely different moral perspectives.

**PHIL 245M—Biomedical Ethics (3 cr)**
This course examines ethical problems associated with the fields of medicine and bio-research. Moral issues such as euthanasia, genetic experimentation, informed consent and abortion are viewed from widely different moral perspectives.

**PHIL 245T—Ethics of Technology (3 cr)**
Issues dealing with engineering and environmental ethics, morality and bio-research, the technological revolution, the ethics of experimentation, agricultural ethics, "disasters" and moral responsibility, and nuclear energy and waste disposal will be examined.

## MATHEMATICS

**MATH 111—Mathematics for Elementary and Middle School Teachers I (3 cr)**
Prospective and current teachers of mathematics will be introduced to the intuitive and logical background of arithmetic, properties of sets, algorithms of arithmetic and other bases, properties of the integers, mathematical terminology, elements of number theory and problem solving.

**MATH 112—Mathematics for Elementary and Middle School Teachers II (3 cr)**
*(Prerequisite: MATH 111 with a minimum grade of C)* The properties of the rational number system, extension to irrationals, decimal and fractional representation of real numbers, and intuitive geometry and measurement are introduced.

**MATH 120—Intermediate Algebra (3 cr)**
*(Prerequisite: One of the following—ACT [see p. 12 for scores], MATH 100 or passing first-day qualifying exam)* Topics covered include linear equations and inequalities, polynomials, factoring, exponents and radicals, fractional expressions and equations, and quadratic equations.

**MATH 121—College Algebra (3 cr)**
*(Prerequisite: MATH 120 with minimum grade of C or math placement exam or a minimum ACT score of 25 if taken before November 1989 or 26 if taken after November 1989)* This course includes the study of equations, inequalities and systems of equations. Functions and their graphs are introduced including polynomial, rational, exponential and logarithmic.

**MATH 123—Trigonometry (2 cr)**
*(Pre- or corequisite: MATH 121 or MATH 150 with a minimum grade of C or math placement exam or a minimum ACT score of 25 if taken before November 1989 or 26 if taken after November 1989)* Trigonometric functions, radian and degree measure, graphs, basic trigonometric identities and inverse trigonometric functions are covered.

**MATH 129—The Art of Mathematics (3 cr)**
*(Prerequisite: Math 120 or math placement exam or a minimum ACT score of 25 if taken before November 1989 or 26 if taken after November 1989)* An introduction to the art of mathematics and an investigation of the process of mathematical discovery, this course is aimed at students who do not feel mathematically inclined. Readings will include accounts of working mathematicians and a survey of modern mathematics.

**MATH 145—Introduction to Probability and Statistics (3 cr)**
*(Prerequisite: MATH 120 with a minimum grade of C or math placement exam or a minimum ACT score of 25 if taken before November 1989 or 26 if taken after November 1989)*

This course provides an introduction to basic concepts in probability and statistics—analysis of numerical data and descriptive statistics, probability and basic probability models, sampling and statistical inference with applications from a variety of fields.

**MATH 150—Advanced Algebra (3 cr)**
(*Prerequisite: MATH 120 with a minimum grade of B or MATH 121 with a minimum grade of C or math placement exam or a minimum ACT score of 25 if taken before November 1989 or 26 if taken after November 1989*) This course emphasizes polynomial, rational, exponential and logarithmic functions, as well as the graphs of these functions. The course includes an introduction of sequences and series.

**MATH 162—Calculus I (4 cr)**
(*Prerequisite: MATH 121 with a minimum grade of B or MATH 150 with a minimum grade of C or math placement exam; pre- or corequisite: MATH 123 or math placement exam*) This course includes a study of derivatives, formal differentiation, the concept of continuity, applications of the derivative, such as curve sketching, maxima and minima and integration.

**MATH 163—Calculus II (4 cr)**
(*Prerequisite: MATH 162 with a minimum grade of C*) This course covers differentiation and integration techniques with applications involving transcendental functions, numerical integration techniques, solving simple differential equations, improper integrals and application of the mean value theorem.

**MATH 180—Elements of Calculus I (3 cr)**
(*Prerequisite: MATH 121 with a minimum grade of B or MATH 150 with a minimum grade of C*) Students briefly review functions and their graphs. New topics introduced include limits, derivatives as a rate of change, applications to graphing, maxima, minima and motion, integral as antiderivative and applications, and exponential and logarithmic functions.

**MATH 181—Elements of Calculus II (3 cr)**
(*Prerequisite: MATH 180 with a minimum grade of C and some knowledge of trigonometry or MATH 123. MATH 123 can be taken concurrently with MATH 181*) A continuation of MATH 180, this course covers the definite integral, multivariate calculus, simple differential equations, and a basic review of trigonometry and its relation to calculus.

**MATH 264—Calculus III (4 cr)**
(*Prerequisite: MATH 163 with a minimum grade of C*) This continuation of MATH 163 covers vector representation of curves and surfaces, partial derivatives, gradient, tangent planes, directional derivative, multiple integrals, cylindrical and spherical coordinates, and applications.

**MATH 296—Topics in Mathematics (1–3 cr)**
Various topics will be offered.

## SOCIAL AND BEHAVIORAL SCIENCE

**ANTH 120—Archaeology: Discovering Our Past (3 cr)**
This introductory course presents students with an overview of archaeological theory and methods including data from selected archaeological sites in various geographical areas and from different time periods.

**ANTH 130—Cultures of the World (3 cr)**
This course introduces students to basic concepts of cultural anthropology. Lectures include a survey of the variety of existing human cultures in their native environments and the relationships of the cultural components. One societal example is studied in detail.

**ANTH 150—Evolutionary Anthropology (3 cr)**
An introduction to the world of biological anthropology and the concepts of organic evolution, this course emphasizes the fossil history of primates and prehistoric man with a consideration of their paleoecological context. Modern primate behavior is considered in terms of its relevance to human evolution.

**ANTH 222—Ancient Mesoamerica (3 cr)**
Mesoamerican archaeology is traced from the earliest inhabitants through the Aztec period. Special emphasis is placed on cultural processes and the dynamics of cultural evolution.

**ANTH 255—Southwestern Anthropology (3 cr)**
The archaeology of the southwest is presented from the earliest inhabitants through the early 1600s.

**ANTH 296—Topics in Anthropology (1–3 cr)**
Topics vary. Students explore an issue in anthropology or the works of an influential anthropologist.

**ECON 101—Introduction to Economics (3 cr)**
Students are introduced to basic economic concepts and developments. Elementary economic theory is used to supplement a materialistic view of recent western history. Topics include the origins of capitalism, transplantation and adaptation in the New World, and new institutions of the 1800s and 1900s.

**ECON 200—Macroeconomics (3 cr)**
This course serves as an introduction to the theories and problems of economic policy. Topics include the contrast of the Classical and Keynesian Models, money and banking, inflation, unemployment and economic growth.

**ECON 201—Microeconomics (3 cr)**
Students are introduced to the laws of demand and supply, and the workings of the price system in a free market. Basic economic theory is applied to problems of production, monopoly, taxation, consumer welfare and the environment.

**ECON 296—Topics in Economics (1–3 cr)**
Topics concerning economic theory, research or statistical analysis, and economists will be offered.

**GEOG 101—Physical Geography (3 cr)**
Emphasizing the physical elements of world geography, this course provides a systematic analysis of world climates, vegetation, soils and landforms, and their distribution, interrelation and significance to humans.

**GEOG 102—Human Geography (3 cr)**
Emphasizing the human elements of world geography, this course provides a systematic analysis of world population, demographic factors, ethnic groups, predominant economies and political units, and their interrelation and interaction with the physical earth.

**GEOG 201—World Regional Geography (3 cr)**
Physical and human aspects of regions of the world are studied, along with current economic and political problems.

**PSCI 110—The Political World (3 cr)**
This introduction to politics emphasizes how people can understand their own political systems and those of others.

**PSCI 200—U.S. Politics (3 cr)**
This course is a survey of American politics, including the theory of democracy and political institutions, the electorate, and American governmental branches and their bureaucracies.

**PSCI 210—State and Local Politics (3 cr)**
Analysis of the workings of politics at the state and local levels is the emphasis of this course. New Mexico is one of many states used as examples.

**PSCI 220—Comparative Government and Politics (3 cr)**
By considering European, developing and communist regimes and systems, students gain insights into the political history, socioeconomic structure, and contemporary political institutions and behaviors of governments and "the body politic."

**PSCI 240—International Politics (3 cr)**
Students analyze various significant factors in international politics. Topics include nationalism, ideology, deterrence, balance of power, international law and international conflict and collaboration.

**PSCI 260—Political Ideas (3 cr)**
Discussion of classical and contemporary political ideas and ideologies supplements an introduction to many of the enduring political issues which are presented in descriptive, analytical and normative terms.

**PSY 101—General Psychology I (3 cr)**
An introduction to basic processes underlying behavior, this course focuses on principles of learning, memory and motivation, language, states of awareness and biological bases of behavior.

**PSY 102—General Psychology II (3 cr)**
An introduction to patterns of human behavior, this course focuses on human growth and development, intelligence, personality, social psychology, abnormal behavior and therapy.

**PSY 220—Developmental Psychology (3 cr)**
(*Prerequisite: PSY 101 or PSY 102*) This course is a study of the stages and processes of the development of physical, social, emotional and intellectual aspects of human personality starting from conception and leading to old age. Emphasis is on pertinent research and practical applications.

**PSY 230—Psychology of Adjustment (3 cr)**
(*Prerequisite: PSY 101 or PSY 102*) Emphasizing processes of normal human adjustment and coping in personal and interpersonal areas, this course presents topics in the applications of psychology to stress and mood management, self-esteem, social adjustment, communication and relationships.

**PSY 231—Human Sexuality (3 cr)**
The physiological, cultural, social and individual factors that influence sexual behavior, sex roles and sex identity are explored in this course.

**PSY 232—Clinical Psychology (3 cr)**
(*Prerequisite: PSY 101 or 102*) This course introduces students to clinical psychology as a profession and area of research. Topics include psychometrics and assessment, systems of prevention and therapy, forensic psychology, program evaluation and professional and ethical issues.

**PSY 240—Brain and Behavior (3 cr)**
(*Prerequisite: PSY 101 or 102 or BIO 121L*) While emphasizing the role of the central nervous system, the biological foundations of behavior, cognition and memory, as well as their implications for psychology, are surveyed.

**PSY 260—Psychology of Learning and Memory (3 cr)**
(*Prerequisite: PSY 101 or PSY 102*) This course surveys the variety of laboratory learning situations, emphasizing applications to practical situations and ranging from simple processes such as conditioning to complex ones such as transfer, memory and concept formation.

**PSY 271—Social Psychology (3 cr)**
(*Prerequisite: PSY 101 or PSY 102*) This course presents topics on social interaction—communication, perception of oneself and others, attitudes and leadership.

**PSY 296—Topics in Psychology (1–3 cr)**
Topics vary, concentrating on the work of an influential psychologist, a school of psychology, or an area in psychology.

**SOC 101—Introduction to Sociology (3 cr)**
This course covers the basic concepts, topics and theories of contemporary sociology.

**SOC 111—Criminal Justice System (3 cr)**
An overview of the criminal justice processes is provided, including an exploration of law, law enforcement, prosecution, defense, trial and sentencing.

**SOC 211—Social Problems (3 cr)**
(*Prerequisite: SOC 101*) This course provides an analysis of a range of social problems in contemporary U.S. society, such as racism and prejudice, crime and delinquency, mental disorders, family changes, poverty, and substance abuse, from a sociological perspective.

**SOC 212—Juvenile Delinquency (3 cr)**
(*Prerequisite: SOC 101*) Topics covered in this course include the characteristics of the delinquent youth under the age of criminal adulthood, theories of causation and related empirical research.

**SOC 213—Deviant Behavior (3 cr)**
(*Prerequisite: SOC 101*) Students focus on the theory and research of deviant behavior and types of individual and subcultural deviance.

**SOC 214—Sociology of Corrections (3 cr)**
(*Prerequisite: SOC 101*) This course covers the theory, practice and legal basis for the investigation, treatment and supervision of offenders in custody and on probation or parole. Included are the history of penology and its relationship to various penal philosophies.

**SOC 215—Criminology (3 cr)**
(*Prerequisite: SOC 101*) The causes of crime are covered with emphasis on sociological factors, the various faces of crime, the criminal, and past and present criminology theory.

**SOC 216—Ethnic and Minority Groups (3 cr)**
(*Prerequisite: SOC 101*) This course is the study of ethnic and racial groups, conflict and adjustment, cultural differences, theories of prejudice and current trends and problems in our global society.

**SOC 221—Sociology of Rich and Poor Nations (3 cr)**
(*Prerequisite: SOC 101*) Topics covered include patterns of development and change in nations/states, relationships between Third World and industrial nations, and the impact of class conflict, war, revolution, reform and colonialism on national development.

**SOC 225—Marriage and the Family (3 cr)**
(*Prerequisite: SOC 101*) Emphasizing influences between large-scale social changes and changes in family composition and interaction, this course analyzes contemporary family and household forms.

**SOC 230—Society and Personality (3 cr)**
(*Prerequisite: SOC 101*) This course introduces topics in social psychology such as personality theories, concepts of self, human relationships, small group dynamics and organizational theories.

**SOC 280—Social Science Research (3 cr)**
(*Prerequisite: SOC 101*) The methodology of experimental science is applied to the social sciences in this course. Topics include the study of methodologies of data collection and analysis. Library resources, including legal citations, are used.

**SOC 296—Topics in Sociology (1–3 cr)**
Topics vary. Students explore an issue in sociology or the works of an influential sociologist.

### GENERAL ELECTIVES

**NUTR 125—Nutrition (3 cr)**
An introduction to nutrition as it affects normal body functions, this course's topics include consumer concerns, food selections, food safety, fitness and the impact of nutrition on the life cycle. A self-dietary and activity analysis is a course requirement.

## GENERAL HONORS COURSES

General Honors courses, by offering intensive interdisciplinary study, are designed to increase opportunities for liberal arts education. Participation in these courses is by application only; however, any student interested in the challenge these courses offer is encouraged to apply. Academic potential (ACT scores), record of previous academic work, and intellectual motivation are the main criteria used to select students. Taught in a small seminar format, General Honors courses emphasize discussion, student participation and self-expression. For more information and an application, interested students should see the Arts & Sciences Department counselor.

## CREDIT BY EXAMINATION

Students may earn a maximum of 30 credit hours toward Arts & Sciences requirements through the following:

- Advanced Placement (AP)
- College Level Examination Program (CLEP) (subjects exams only)
- T-VI Challenge Exams
- Correspondence Courses

AP and CLEP exams and scores are as follows:

### 1) Advanced Placement

| T-VI Course | AP | Minimum Score | Cr |
|---|---|---|---|
| ART 101 | Art History | 4 | 3 |
| BIO 121L/122L | Biology | 3 | 8 |
| CHEM 121L/122L | Chemistry | 3 | 8 |
| CSCI | Computer Science | 4 | 4 |
| ENG 101 & 102 | English Language & Composition | 3 | 6 |
| ENG 101 & 102 | English Literature & Composition | 3 | 6 |
| HIST 101 & 102 | European History | 4 | 6 |
| HIST 161 & 162 | American History | 4 | 6 |
| MATH 162 | Calculus AB | 3 | 4 |
| MATH 162 & 163 | Calculus BC | 3 | 8 |
| PHYS 151/153L | Physics B | 4 | 4 |
| PHYS 160/163L | Physics C | 4 | 4 |
| SPAN 101 & 102 and | Spanish Language | 3 | 6 |
| SPAN 201 & 202 | Spanish Language | 4 | 12 |

### 2) College Level Examination Program

| T-VI Course | CLEP | Minimum Score | Cr |
|---|---|---|---|
| CHEM 121L/122L | General Chemistry | 52 | 8 |
| ECON 200 | Introduction to Macroeconomics | 55 | 3 |
| ECON 201 | Introduction to Microeconomics | 55 | 3 |
| ENG 101 | Freshman English* | 51 | 3 |
| ENG 102 | College Composition* | 57 | 3 |
| ENG 150 | Analysis & Interpretation of Literature* | 55 | 3 |
| ENG 296 | American Literature* | 50 | 3 |
| HIST 101 & 102 | Western Civilization I & II | 50 | 6 |
| MATH 121 | College Algebra | 56 | 3 |
| MATH 123 | Trigonometry | 61 | 2 |
| MATH 162 | Calculus with Elementary Functions* | 60 | 4 |
| PSCI 200 | American Government | 55 | 3 |
| PSY 101 & 102 | General Psychology | 55 | 6 |
| PSY 220 | Human Growth & Development | 52 | 3 |
| SOC 101 | Introduction to Sociology | 52 | 3 |
| SPAN 101 | College Spanish | 40 | 3 |
| SPAN 101 & 102 | College Spanish | 45 | 6 |
| SPAN 101, 102, 201 & 202 | College Spanish | 54 | 12 |

*Both the objective and essay or problem portions must be completed.

Scores on CLEP and AP must be forwarded to the T-VI Records Office. Scores are considered *official* if they are:

- Sent directly from the Testing Center, or are
- AP scores included on high school or college transcripts as part of the student's permanent record.

The student's T-VI transcript will reflect a grade of TR (credit) for those courses with acceptable CLEP or AP scores. The transcript also will show the credits were obtained by examination. *TR grades are not computed in the student's GPA. Credits count toward graduation but not the residency requirement.*

### 3) Challenge Exams

The Arts & Sciences Department has developed challenge examinations for some of its courses. Exams are scheduled during the last week of each term.

Courses that may be challenged are:

BIO 121L Principles of Biology I
BIO 122L Principles of Biology II
BIO 123 Biology for Health Sciences
BIO 124L Biology Lab for Health Sciences (*must be challenged together*)
BIO 237 Anatomy and Physiology I (lecture)
BIO 247L Anatomy and Physiology I (lab) (*must be challenged together*)
BIO 238 Anatomy and Physiology II (lecture)
BIO 248L Anatomy and Physiology II (lab) (*must be challenged together*)
CSCI 101 Computer Literacy
MATH 120 Intermediate Algebra
MATH 121 College Algebra
NUTR 125 Nutrition
PSY 101 General Psychology I
PSY 102 General Psychology II

To challenge a course, a student must:

- Obtain a "challenge exam form" and approval from an admissions advisor or a departmental counselor. Approval will be given after verification that restrictions listed below do not apply.
- Pay a $10 per-credit-hour fee at the Cashier's Office.
- Submit the form and schedule the exam through the Arts & Sciences Office, A-102 on Main Campus.
- Present a picture I.D. at exam site.

The following restrictions apply:

- A student may attempt a challenge only once per course.
- A student may not use the challenge exam to improve a previously recorded grade and may not take the exam if previously enrolled in the course beyond the second week of a term at any post-secondary institution.
- A student's transcript will reflect a grade of TR (credit) for those courses successfully challenged. *TR grades are not computed in the student's GPA. Courses successfully challenged may count toward graduation but not the residency requirement.*
- Challenge exam credit might not be accepted by other post-secondary institutions.

### 4) Correspondence Courses

Credit for Arts & Sciences courses may be granted for a maximum of three courses completed by correspondence through a regionally accredited institution.

# DEVELOPMENTAL STUDIES DEPARTMENT

## Preparatory Program

**1 or 2 Terms, Main and Montoya Campuses**

This department offers courses designed to help students meet admission requirements for certificate and associate degree programs and for transfer to other degree-granting institutions. Courses may also be used by students for reviewing material with which they may have lost familiarity.

Certain courses described in this section are designed to help students acquire skills which are needed in the first term of occupational programs leading to the certificate. College preparatory courses are English 100, Reading 100, Math 100A and Science 100A. These courses enable students to meet admission requirements for degree programs. Students may elect to enroll in a combination of courses offered in this department, depending upon their needs. Students who are interested in financial aid, however, should inquire from counselors whether their intended program in Developmental Studies qualifies them for financial assistance. Students enrolled in certificate and associate degree programs may simultaneously enroll in courses in this department.

A student who wishes to enroll in Developmental Studies *and* to receive financial aid as a full-time student must enroll for at least 12 credit hours. However, a normal recommended course load is 15 credits.

Courses in this department are graded S, P or U. These courses are not credited toward a certificate or degree program at T-VI, nor do they transfer to other degree-granting institutions. However, grades are recorded in students' permanent records. Students are not permitted to audit preparatory courses.

The Developmental Studies Department offers courses at both campuses. Several courses are also scheduled at night at both campuses. More information concerning course offerings in this department is available from counselors at either the Main or Montoya Campus.

### PREPARATORY PROGRAM

| *Recommended Schedule for Certificate Programs* | *Cr Hrs* |
|---|---|
| Mathematics | 4 |
| Study Skills | 3 |
| Reading | 3 |
| Survey class | 3 |

Students with low reading test scores should take one of the following courses instead of Reading 100:

| | | | |
|---|---|---|---|
| RDG | 099 | Reading Improvement | 3 |
| ENG | 094 | Language Development | 6 |

Students who seek admission to an associate degree program or who wish to transfer to another college or university and who have not scored well on the ACT* should enroll in those courses listed below in which greater proficiency is desired. Similarly, students who are enrolled in a certificate program which requires satisfactory completion of the ACT* should enroll in courses for which further preparation is needed.

| | | | |
|---|---|---|---|
| ENG | 100 | Writing Standard English | 3 |
| MATH | 100A | Elementary Algebra for College Students | 4 |
| RDG | 100 | College Preparatory Reading | 3 |
| SCIE | 100 | Scientific Reasoning | 3 |

### COURSE DESCRIPTIONS

#### MATHEMATICS

Preparatory students are placed in math courses that best meet their needs, interests and abilities. Students' scores on the ACT* and/or a math advisement test are used to assist in determining in which classes students should enroll.

**MATH 092—Introduction to the Scientific Calculator (2 cr)**
This 7½-week course, offered twice each term, introduces the student to scientific and technical operations on Sharp, Casio and Hewlett-Packard calculators. Designed primarily for students enrolled in or preparing for Technologies or Trades, the course includes algebraic operating method, reverse operating logic, introduction to programming, hexadecimal/decimal conversions, trigonometric functions and coordinate systems, logarithms, multiple memory problems and applications for mathematics, physics, electronics and mechanics. Class meets one hour per day and requires strong basic math skills. *This course is not eligible for support by the Veterans Administration.*

**MATH 099—Basic College Mathematics (4 cr)**
This course is offered for students entering programs of study in Business Occupations, Health Occupations, Technologies or Trades. A review of subject matter in this course will also be helpful to students wishing to continue studying math and preparing for Elementary Algebra.

This course begins with an overview of basic mathematics and includes special or advanced topics needed for the student's selected major, such as calculator usage, ratio and proportion, data representation, geometric concepts, measurement (U.S. and metric), real number system concepts, signed numbers and

linear equations in one variable. The course is offered in both self-paced and lecture formats. MATH 099 satisfies prerequisite requirements for MATH 100.

**MATH 099L—Lab for Basic College Mathematics (0 cr)**
(*Corequisite: MATH 099*) Computer assisted/tutorial laboratory exercises in basic mathematics, as well as special topics needed for the student's selected occupational major. This lab meets two hours per week.

**MATH 100A—Elementary Algebra for College Students (4 cr)**
This course is for students who are not prepared to enter Intermediate Algebra. The course begins with a brief review of basic math and progresses to operations involving numbers, polynomials, linear equations, factoring, formulas, graphing and word problems. The course is offered in both self-paced and lecture formats. MATH 100 meets prerequisite requirements for MATH 120. Successful completion of MATH 100 is required of any student whose score on the ACT* is below 16.

**MATH 100L—Lab for Elementary Algebra for College Students (0 cr)**
(*Corequisite: MATH 100*) Computer assisted/tutorial laboratory exercises to cover a variety of beginning Algebra topics. This lab meets two hours per week.

## READING

Courses in reading are offered to any student who wishes to improve his/her reading comprehension and speed. RDG 100 is also offered for students seeking admission to a degree program and for which a score of 18 or above is required on the ACT.*

**RDG 092—English Reading Skills (3 cr)**
This course complements ENG 092 and may be taken simultaneously. Students with limited English proficiency develop effective reading and writing skills which help them become successful participants in T-VI preparatory reading courses. This course meets daily for one hour.

**RDG 099—Reading Improvement (3 cr)**
This course focuses on reading as a thinking process, helping students recognize that what they bring to the reading task is as important as the print which they expect to decode and comprehend. Successful completion of this course is required for any student whose score on the ACT* is below 18. This course meets daily for one hour.

**RDG 099L—Lab for Reading Improvement (0 cr)**
(*Corequisite: RDG 099*) Computer assisted/tutorial laboratory exercises to help the student improve reading, vocabulary and comprehension skills. This lab meets one hour per week.

**RDG 100—College Preparatory Reading (3 cr)**
This course provides instruction in reading skills necessary for success in college level courses. The course emphasizes study skills and vocabulary development, and places special emphasis on comprehension skills. Students entering this course should possess at least high school level reading abilities. Selected topics in social science are used as vehicles to develop reading proficiency. This course meets daily for one hour.

**RDG 100L—Lab for College Preparatory Reading (0 cr)**
(*Corequisite: RDG 100*) Computer assisted/tutorial laboratory exercises in reading and study skills and strategies to prepare students for success in college level courses. This lab meets one hour per week.

## ENGLISH

**ENG 092—English Language Skills (6 cr)**
This is an intensive course in English. Students with limited English proficiency acquire effective speaking and listening skills necessary for successful participation in T-VI preparatory courses. Class meets two hours per day.

**ENG 094—Language Development (6 cr)**
This class helps students improve basic communications skills—speaking, listening, reading and writing. It helps them to follow oral and written instructions accurately and to write, spell and use English correctly. Class meets two hours per day.

**ENG 099—Writing Lab (3 cr)**
This course focuses on the writing of narrative and descriptive paragraphs, the use of a variety of sentence structures in writing, and the grammar, spelling and mechanics of standard American English. This course meets daily for one hour.

**ENG 099L—Lab for Writing Lab (0 cr)**
(*Corequisite: ENG 099*) Computer assisted/tutorial laboratory exercises in the four communication skills: speaking, listening, reading and writing. This lab meets one hour per week.

**ENG 100—Writing Standard English (3 cr)**
Intensive study of grammar, syntax, punctuation and usage is included, with concentrated practice in writing paragraphs. A student may be required to complete satisfactorily courses in Language Development or Writing Lab, depending on his/her reading and writing ability. Satisfactory completion of ENG 100 meets prerequisite requirements for ENG 101. Successful completion of ENG 100 is required of any student whose score on the ACT* is below 19. This course meets daily for one hour.

*Effective November 1989 (see page 12)

**ENG 100L—Lab for Writing Standard English (0 cr)**
(*Corequisite: ENG 100*) Computer assisted/tutorial laboratory exercises in grammar, syntax, punctuation and usage, with concentrated practice in writing paragraphs. This lab meets one hour per week.

## LANGUAGE SKILLS

**LANG 100—Spanish for Beginners (3 cr)**
Conversational Spanish for non-Spanish speaking students who will be working in a bilingual society is taught in this class. Information about the Spanish culture and an appreciation of its customs and traditions are included. *This course is not eligible for support by Veterans Administration benefits.* This course meets daily for one hour.

## SCIENCE

**SCIE 100A—Scientific Reasoning (3 cr)**
This course will help the student to become a more independent learner by developing effective study and critical thinking skills. A variety of problems in science which require critical thinking will be analyzed and solved as a means to sharpen students' abilities. Skills practiced in this class will aid the developing student in any future science or technology course. Successful completion of SCIE 100 is required for any student whose score on the ACT* is below 19.

**SCIE 100L—Lab for Scientific Reasoning (0 cr)**
(*Corequisite: SCIE 100*) Computer assisted/tutorial laboratory exercises in basic study and critical thinking skills to prepare students for entry into any future science or technology course. This lab meets one hour per week.

## STUDY SKILLS

**SSKL 100—Thinking Strategies (3 cr)**
This course is for students who wish to improve their general thinking abilities. Several thought processes are explored and applied to general problem-solving situations, including math and word problems, standardized testing, and group processes. The course is especially recommended for students preparing for Accounting, Data Processing, Electronics and other majors dealing with troubleshooting, and for students who are weak in math. This course meets daily for one hour.

**CMTC 100—Communications for Technology (3 cr)**
In this course, students improve speaking, listening, reading and writing skills as related to their field of study in Technologies. They also learn reference and study skills. This course meets daily for one hour.

**CMTR 100—Communications for Trades (3 cr)**
In this course, students improve speaking, listening, reading and writing as related to their field of study in Trades. They also learn reference and study skills. This course meets daily for one hour.

**CMBO 100—Communications for Business Occupations (3 cr)**
In this course, students improve speaking, listening, reading and writing as related to their field of study in Business Occupations. They also learn reference and study skills. This course meets daily for one hour.

**CMHO 100—Communications for Health Occupations (3 cr)**
In this course, students improve speaking, listening, reading and writing as related to their field of study in Health. They also learn reference and study skills. This course meets daily for one hour.

## SURVEY COURSES

Courses listed below provide a survey of majors in Business Occupations, Health Occupations or Technologies as indicated by the course title. Students learn more about the majors which they have selected with regard to job availability, job expectations, and methods, materials, and operations of each field. *These courses are not eligible for support by Veterans Administration benefits.*

**ACCT 100—Introduction to Accounting (3 cr)**
This course is designed to provide the student with knowledge of the basic accounting cycle. Additional topics such as payroll and taxes will be covered as time permits. This class will prepare students for upper-level accounting courses. This course meets daily for one hour.

**SS 100—Introduction to Typing (3 cr)**
This course is for students who either need or wish to learn typewriting or general keyboarding skills. Students in Business Occupations who have unique difficulties in learning typewriting are encouraged to enroll. The course is also recommended for students preparing for Data Processing and other majors requiring keyboard skills. This course meets daily for one hour.

**HLTH 100—Introduction to Health Occupations (3 cr)**
This course offers an introduction to various health careers through class discussions, tours and speakers. It also introduces the student to anatomy and physiology of selected body systems. Diseases and treatments are discussed in relation to these body systems. This course meets daily for one hour.

**DP 100—Introduction to Data Processing (3 cr)**
This course provides preparation for the first term in data processing technology. Course objectives include programming in BASIC on microcomputers, programming in COBOL on mainframe computers, flowcharting, data processing concepts and computer career information. Satisfactory completion of this course indicates that the student is prepared to enter DP 101L and DP 102. This course meets daily for one hour.

**ELEC 100—Introduction to Electronics (3 cr)**
This course includes intensive study of introductory concepts of electronics theory including the atom, Ohm's Law, Kirchoff's Law, DC and AC circuit principles, and the necessary thinking skills and techniques which are required for further study in electronics. Also included are concepts in magnetism, inductance and capacitance. Satisfactory completion of ELEC 100 signifies that the student is prepared to enter ELEC 103L. (Students may step back to this course from ELEC 103L if the level of difficulty in the course is too great.) This course meets daily for one hour.

**DRFT 100—Introduction to Drafting (3 cr)**
This course includes intensive study of introductory concepts of drafting including line weights, orthographic projection, pictorials and basic drafting skills as applied to major areas. Freehand sketching, geometric constructions, lettering, occupational information and the use of math in drafting are also included.

*Effective November 1989 (see page 12)

This course helps to prepare the student for entry into ARDR 101L, C&S 101L or DDET 101L. (Students may also step back to DRFT 100 if the level of difficulty in these courses is too great.) This course meets daily for one hour.

# Special Services

## Main Campus

The Special Services program is designed to meet the needs of handicapped students enrolled at T-VI. Services are provided to prepare the handicapped student for participation in the world of work and higher education.

At the Developmental Studies level, career counseling, individual program planning, vocational assessment, ancillary services, coordination with community support agencies, and individualized instruction are provided. For students enrolled in certificate and associate degree programs, limited curriculum adjustments are made to accommodate handicapping conditions. Follow-up services, such as counseling, tutoring and job-seeking help, are provided.

Handicapped students entering T-VI through Developmental Studies take regular preparatory courses and are eligible for placement in specially designed support courses.

Referral to Special Services can be arranged through the student's department counselor/advisor, support agency, admissions counselor/advisor, or directly by the interested student.

| *Support Courses* | *Cr Hrs* |
|---|---|
| Mathematics | 6 |
| Language | 6 |
| Spelling | 3 |
| Targeted Instruction | 3 |
| Employability Skills | 3 |

## COURSE DESCRIPTIONS

**MATH 090—Introductory Mathematics (6 cr)**
This course provides small group instruction in basic mathematics skills—whole numbers, common fractions, decimal fractions, percents and conversions. The student is placed in a self-paced, individualized, programmed math unit. Students who make sufficient progress are moved into regular preparatory courses. The class meets two hours each day.

**ENG 090—Introductory Language Skills (6 cr)**
Small group instruction is provided in basic communication skills—spelling, reading, writing, speaking and listening. The course helps students follow oral and written instructions accurately and write and use English correctly. Students who make sufficient progress are transferred to regular preparatory courses. The class meets two hours per day.

**LANG 090—Spelling (3 cr)**
This course provides diagnosis and remediation for specific spelling deficiencies. Word structure and the principles and rules of spelling are emphasized. Students making sufficient progress are transferred to regular preparatory courses. The class meets daily for one hour.

**SPSV 089—Targeted Instruction (3 cr)**
This course provides intensive, individualized instruction to students who have potential for participation in certificate majors or academic programs but need concentrated help to complete the Preparatory Program. Students receive daily, individualized tutoring in a classroom setting.

**SPSV 090—Employability Skills (3 cr)**
This course is designed to make the student job-conscious, self-assured and well-prepared for employment. Units include self-assessment, résumé writing, applications, interviewing techniques, on-the-job training, work samples, business vocabularies, writing and composing letters, career exploration, human relations, community resources and job market information. The class meets daily for one hour.

# BUSINESS OCCUPATIONS DEPARTMENT

## Business Occupations Learning Centers

**Self-Paced, Open-Entry Courses**
**Main and Montoya Campuses**

The BOLCs serve members of the public and T-VI students who want to review or learn a particular subject or skill individually.

Individuals may begin using these centers at any time during a term and stop when requirements have been met. A certificate is granted upon completion of a course. Instruction is offered on new equipment including electronic typewriters, electronic calculators, transcribing machines, microcomputers and audiovisual training aids. Hours are arranged to suit individual needs and as equipment is available.

The Main Campus center is located in Room B-210. The Montoya Campus center is in Room H-127. Hours at both centers are 7:30 a.m. to 9 p.m. Monday through Thursday, 7:30 a.m. to 5 p.m. on Friday, and 9 a.m. to 1 p.m. on Saturday. The fee is $20 per course.

### BOLC SUBJECT/SKILL AREAS

Typing I
Typing II
Keyboarding
Typewriting Skillbuilding
Alphabetic Shorthand I
Gregg Shorthand I
Gregg Shorthand II
Shorthand Review (Century 21, Forkner, ABC and Gregg)
Shorthand Speedbuilding
English Review
Spelling
Business Mathematics Fundamentals
Electronic Calculators
Accounting Fundamentals
Machine Transcription
Medical Transcription
Medical Terminology
Introduction to Microcomputer Courses
- Introduction to Microcomputers (Apple IIE, Main; IBM, Montoya)
- WordPerfect 5.0
- Lotus 1-2-3

### COURSE DESCRIPTIONS

**Typing I**
Typing I is an excellent audiovisual course for beginners or for those who need a review of basic techniques and business applications. The content emphasizes business letters, reports and tables.

**Typing II**
(*Prerequisite: Typing I or placement test*) This continuation of Typing I emphasizes speed, accuracy and production.

**Keyboarding**
This course is an individualized approach to developing basic keyboarding skills. Goals emphasize mastery of the typewriter or computer keyboard through correct techniques and accuracy. Students will work at their own pace to achieve course objectives.

**Typewriting Skillbuilding**
(*Prerequisite: 30 gross words per minute typing skill*) This course improves typing accuracy and speed using championship methodology.

**Alphabetic Shorthand I**
This shorthand system uses alphabetic characters. Students learn to read, write and transcribe shorthand notes. A writing speed of 50 wpm should be reached upon completion.

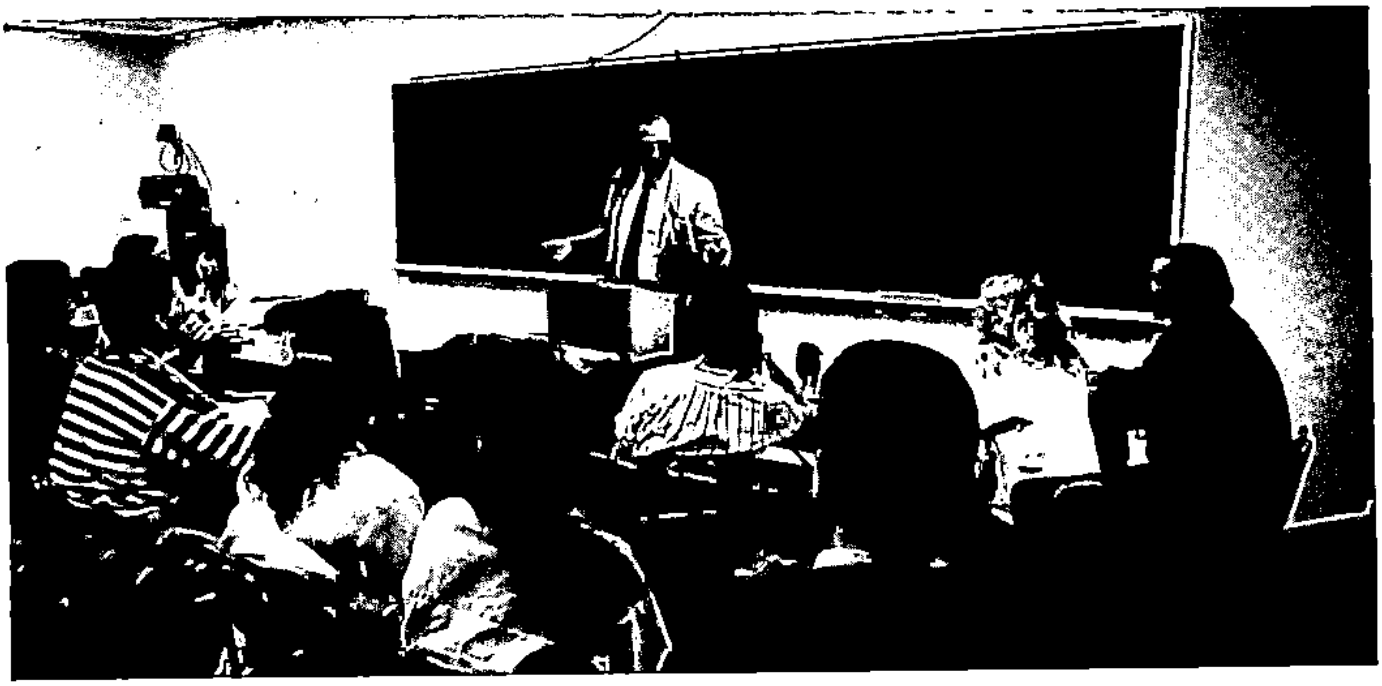
**Gregg Shorthand I**
All theory and brief forms leading to the ability to read, write and transcribe Gregg shorthand are learned. A writing speed of 50 wpm should be reached upon completion.

**Gregg Shorthand II**
(*Prerequisite: Ability to write Gregg shorthand at 50 words per minute and transcribe into mailable form*) Theory and brief forms are reviewed with emphasis on dictation and transcription. A writing speed of 80 wpm should be reached upon completion.

**Shorthand Review**
This course is for students who have typing and shorthand skills but need review and speedbuilding. Materials are available for Century 21, Forkner, ABC and Gregg.

**Shorthand Speedbuilding**
This course is for individuals who have learned a shorthand theory system and want to concentrate on building dictation speed.

**English Review**
Instruction is in grammar, spelling and punctuation.



**Spelling**
This course consists of seven modules. Each modular lesson uses two cassette tapes—one for instruction and one for testing. The student will listen, read, answer questions, work exercises and spell words, and check his or her answers. The course is designed so that a student may go as rapidly or as slowly as he or she desires.

**Business Mathematics Fundamentals**
This course provides a review of the following fundamental arithmetic operations in solving business problems: addition, subtraction, multiplication, division, fractions, decimals, estimating, percentage, business formulas, percent problems, commissions and bank reconciliation.

**Electronic Calculators**
Skill is developed on electronic calculators using the touch method. This course is designed to assist students in acquiring competence in mathematical applications.

**Accounting Fundamentals**
This course gives the student a basic understanding of accounting principles and their application.

**Machine Transcription**
(*Prerequisites: Demonstrated English proficiency and 50 words per minute typing skill/5 errors*) Instruction is provided in the use of transcribing machines to prepare mailable business correspondence.

**Medical Transcription**
(*Prerequisites: Machine Transcription and 50 words per minute typing skill/5 errors*) This course develops familiarity with medical terminology and transcription.

**Medical Terminology**
This course familiarizes students with medical terminology by means of a text and audio presentation. A vocabulary is developed through the learning of medical prefixes, roots and suffixes. Students also are shown various medical reports to learn formatting and emphasize medical terms.

**Introduction to Microcomputer Courses**
Introductory courses available are Introduction to Microcomputers, Keyboarding, Word Processing (WordPerfect 5.0) and Electronic Spreadsheet (Lotus 1-2-3). Computer literacy and a typing speed of 25 wpm are prerequisites for WordPerfect and Lotus. Apple IIe and IBM or IBM-compatible computers are used.

**Introduction to Microcomputers**
This course provides instruction on the Apple IIe or IBM for the first-time user and assumes no technical knowledge on the part of the learner.

**Keyboarding**
See course description on page 38.

**Word Processing (WordPerfect 5.0)**
This course is an individualized approach to learning WordPerfect 5.0. Students will work at their own pace using either an IBM or a Sperry computer.

**Lotus 1-2-3**
Lotus 1-2-3 is a spreadsheet applications program. It is an integrated package combining spreadsheet graphics and databases.

# Small Business Development Center

The Small Business Development Center provides training, consulting and referrals to all community business owners and prospective owners. The center contains resource materials such as business and population census information, reference books, periodicals, and computer hardware and software. Consulting, which includes on-site visitations, is provided to qualified applicants.

The center also acts as a business referral service to help business owners and prospective owners lo-

cate other service providers from both private and public sectors.

Clients who wish ongoing counseling may enroll in the Entrepreneurship class. See page 48 for course description.

The Small Business Development Center is located in the Business Occupations Building, Main Campus, 717 University SE. Hours are Monday through Friday, 8 a.m. to 5 p.m.

# Accounting

**Associate in Applied Science Degree/ Certificate Program**
**4 Terms, Main and Montoya Campuses**

Accounting is an excellent field for persons looking for a challenging career that has good potential for advancement.

Students in this program may earn an associate in applied science degree or certificate. The degree is awarded to students who complete both occupational and Arts & Sciences courses. A certificate is awarded to students who complete the occupational component.

The New Mexico State Board of Public Accountancy accepts many of T-VI's accounting courses for fulfillment of the education requirement for the CPA exam. A bachelor's degree is also a requirement.

Students may select from a number of support courses, at least one of which must be accounting courses. A minimum of 15 students is required for a support course to be offered. A typing skill of 25 words per minute is required of students before they enroll in some second term courses. Typing courses are available in the Developmental Studies Department, Business Occupations Learning Centers and Continuing Education Division.

Many courses are offered by the Continuing Education Division in the evening. Courses with corresponding numbers are approved for substitution. Several courses in this program may be transferred to four-year institutions (see program advisor).

All occupational courses must be passed with a minimum grade of C to qualify for graduation. For students who are undecided about their major, survey courses are available in the Developmental Studies Department.

A student may elect to accept full-time training-related employment during the last term of the program. This option is available after midterm only for occupational courses and if the student is in good academic standing. Students are responsible for completing course requirements and should see the program advisor for details.

Supply fees are charged for some courses (see page 16).

## ACCOUNTING PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| ACCT | 101L | Accounting Principles Lab I | 6 |
| ACCT | 111 | Accounting Math | 3 |
| BA | 113 | Introduction to Business (7½ weeks) | 2 |
| BA | 121 | Business Communications I | 3 |
| BA | 131 | Human Relations (7½ weeks) | 2 |
| | | *Communications Elective | 3 |
| *Term II* | | | |
| ACCT | 102L | Accounting Principles Lab II | 6 |
| BA | 122 | Business Communications II | 3 |
| BA | 133 | Principles of Management | 3 |
| BA | 150 | Introduction to Computer Processing | 3 |
| | | *Social Science/Humanities Elective | 3 |
| *Term III* | | | |
| ACCT | 201L | Intermediate Accounting Lab I | 3 |
| ACCT | 240 | Tax Accounting I | 3 |
| ACCT | 252 | Computer Lab I | 3 |
| ACCT | 260 | Cost Accounting | 3 |
| *MATH | 120 | Intermediate Algebra | 3 |
| | | 'Support Course | 3 |
| *Term IV* | | | |
| ACCT | 202L | Intermediate Accounting Lab II | 3 |
| ACCT | 253 | Computer Lab II | 3 |
| ACCT | 280 | Managerial Accounting | 3 |
| BA | 211 | Business Law | 3 |
| *ENG | 101 | Writing with Readings in Exposition (this course may be taken any term) | 3 |
| *MATH | 145 | Introduction to Probability and Statistics | 3 |
| | | One Accounting Support Course | 3 |
| | | Total | 76 |
| *Accounting Support Courses* | | | |
| ACCT | 241 | Tax Accounting II | 3 |
| ACCT | 270 | Governmental Accounting | 3 |
| ACCT | 271 | Auditing | 3 |
| ACCT | 272 | Accounting Systems Design | 3 |
| *Support Courses* | | | |
| ACCT | 298 | Supervised Work Experience | 6 |
| BA | 215 | Money and Banking | 3 |
| BA | 226 | Principles of Finance | 3 |
| BA | 240 | Investments | 3 |
| *ECON | 200 | Macroeconomics | 3 |

**Arts & Sciences courses (required for associate degree unless listed as a support course). Course descriptions on pages 24–32.*

*'Required for certificate only.*

## COURSE DESCRIPTIONS

**ACCT 101L—Accounting Principles Lab I (6 cr)**
(*Prerequisites: MATH 099, Reading Improvement 099 or equivalent*) This is an introductory course in the theory and practice of accounting. The lab meets for 10 hours per week.

**ACCT 102L—Accounting Principles Lab II (6 cr)**
(*Prerequisites: ACCT 101L, ACCT 111*) Planning of and accounting for the partnership and corporate forms of business organization are covered. A brief introduction to cost accounting also is included. Upon successful completion of this course, the student should be a competent bookkeeper for most small business organizations. The lab meets for 10 hours per week.

**ACCT 111—Accounting Math (3 cr)**
(*Prerequisite: MATH 099 or equivalent*) This course covers basic arithmetic operations, familiarizes the student with a wide range of accounting procedures for which mathematics is required, and develops touch method skills using electronic calculators. This course meets for five hours per week.

**ACCT 201L—Intermediate Accounting Lab I (3 cr)**
(*Prerequisite: ACCT 102L*) This lab emphasizes accounting theory, concepts and their practical application. It focuses attention on the use of accounting data as a basis for decisions by management, stockholders, creditors and other users of financial statements and accounting reports. Emphasis is on the asset side of the balance sheet. This lab meets for five hours per week.

**ACCT 202L—Intermediate Accounting Lab II (3 cr)**
(*Prerequisite: ACCT 201L*) Accounting for current and long-term liabilities, capital stock transactions, dividends, retained earnings, income tax allocation, cash flow statements, and analysis and interpretation of financial statements are covered in this course. This lab meets for five hours per week.

**ACCT 240—Tax Accounting I (3 cr)**
(*Prerequisite: ACCT 101L*) This course primarily examines the fundamental characteristics of federal income taxes as applied to individuals. This course meets for five hours per week.

**ACCT 241—Tax Accounting II (3 cr)**
(*Prerequisite: ACCT 240*) This course examines corporations, estate and gift taxes, fiduciaries, tax planning and tax shelters. This course meets for five hours per week.

**ACCT 252—Computer Lab I (3 cr)**
(*Prerequisites: ACCT 102L, BA 150*) This IBM-compatible microcomputer lab uses LOTUS 1-2-3 for accounting and business applications. This lab meets for five hours per week.

**ACCT 253—Computer Lab II (3 cr)**
(*Prerequisites: ACCT 102L, BA 150*) This microcomputer lab includes payroll, inventory control, accounts payable, and general ledger. Students use prepared integrated business software on microcomputers. This lab meets for five hours per week.

**ACCT 260—Cost Accounting (3 cr)**
(*Prerequisite: ACCT 102L*) This course emphasizes job order and process costing for construction and manufacturing. This course meets for five hours per week.

**ACCT 270—Governmental Accounting (3 cr)**
(*Prerequisite: ACCT 102L*) This course provides the student with training in accounting for governmental and other nonprofit entities. This course meets for five hours per week.

**ACCT 271—Auditing (3 cr)**
(*Prerequisite: ACCT 102L*) Auditing procedure, reports and working papers are studied and analyzed. Audit practices for verification of assets, liabilities, expense and revenue accounts are stressed. Internal control techniques are studied to develop the student's ability to conserve assets. This course meets for five hours per week.

**ACCT 272—Accounting Systems Design (3 cr)**
(*Prerequisite: ACCT 102L*) Students study systems development through the design of a chart of accounts, an accounting manual, flow charts, control and support systems and reports to management. This course meets for five hours per week.

**ACCT 280—Managerial Accounting (3 cr)**
(*Prerequisite: ACCT 102L*) Students learn how accounting data can be interpreted and used by management in planning and controlling business activities. This course meets for five hours per week.

**ACCT 298—Supervised Work Experience (6 cr)**
(*Prerequisite: ACCT 102L*) Students work a minimum of 150 hours at accounting-related supervised work stations. The student trainee is paid by the cooperating firm and supervised jointly by T-VI and the employer.

**BA 113—Introduction to Business (7½ weeks) (2 cr)**
The structure of business, its activities and problems are surveyed in this course. An understanding of the nature of the business world also is provided. This course meets five hours per week.

**BA 121—Business Communications I (3 cr)**
The student learns to communicate effectively through the study of writing fundamentals. Students also have the opportunity to develop oral and listening skills. This course meets five hours per week.

**BA 122—Business Communications II (3 cr)**
(*Prerequisites: BA 121 and 25 words a minute typing skill*) The student learns to write effective business letters, reports

and memoranda. Continued use of oral communication and listening skills is stressed. This course meets five hours per week.

**BA 131—Human Relations (7½ weeks) (2 cr)**
This course deals with employee attitudes toward themselves and others. The importance of interpersonal relationships and the work ethic is stressed. This course meets five hours per week.

**BA 133—Principles of Management (3 cr)**
This introductory course helps the student understand basic management functions including planning, organizing, staffing, directing and controlling. This course meets five hours per week.

**BA 150—Introduction to Computer Processing (3 cr)**
(*Prerequisite: 25 words a minute typing skill*) This course introduces automated information systems, computer hardware, data entry and business software applications. Hands-on experience with microcomputers is provided. This course meets five hours per week.

**BA 211—Business Law (3 cr)**
This course provides a basic knowledge of law as it applies to all business dealings in our society. Particular emphasis is placed on the Uniform Commercial Code. Practical problems in law are considered. This course meets five hours per week.

**BA 215—Money and Banking (3 cr)**
(*Prerequisite: ACCT 102L*) This course covers the history, nature and function of money. Methods of institutional control and theories of monetary policy are included. This course meets five hours a week.

**BA 226—Principles of Finance (3 cr)**
(*Prerequisite: ACCT 102L*) Concepts and theories of finance are covered including the history of money, monetary systems and credit. Forms of business organizations, capital budgeting, source of funds, marketing securities, capital structure, foreign expansion and reorganization of a business firm are examined. This course meets five hours a week.

**BA 240—Investments (3 cr)**
(*Prerequisite: ACCT 102L*) Students study investment analysis, management, objectives, values and risks. This course meets five hours a week.

**BA 255—Desktop Publishing (3 cr)**
(*Prerequisite: BA 150 or CSCI 101 or SS 132 or permission of advisor*) The students will be given hands-on experience in desktop publishing. The course covers the major elements of the publishing process—editing, typesetting, design, graphic production and page makeup using a microcomputer. This course meets five hours a week.

**BA 256—Employment Procedures and Techniques (7½ weeks) (2 cr)**
This course provides the requisite skills for success in obtaining employment. Specific topics include preparation of cover letters and resumes, interviewing skills, telephone use in the job search, test-taking techniques and projecting a positive attitude and self-confidence. This course meets for five hours per week.

# Business Administration

**Associate in Applied Science Degree/ Certificate Program**
**4 Terms, Main and Montoya Campuses**

The Business Administration program is designed to provide students with the skills, knowledge and experience required in today's business. Each student receives a broad overview of business operations and should be prepared for several job options after successful completion of goals.

Emphasis in the first three terms is on written and verbal communications, management and accounting principles. Those students completing all occupational courses in Terms I, II and III receive business administration certificates.

An Associate in Applied Science Degree in Business Administration is awarded to students who complete both the occupational and Arts & Sciences components in the four terms as listed below. Students concentrate in one of four areas—merchandising, small business management, real estate or general business.

A structured sequence for the real estate concentration is necessary early in the program. One or two real estate courses should be taken each term. These courses are offered in the evening through the Continuing Education Division.

A typing skill of 25 words per minute is required before students can enroll in some second-term courses. Typing courses are available in the Developmental Studies Department, Business Occupations Learning Centers and Continuing Education Division.

Students may select from the list of support courses in their specialty to prepare for their employment goals. Not all support courses are offered each term, and a minimum of 15 students is required for a support course to be offered.

Many courses are offered by the Continuing Education Division in the evening. Courses with corresponding numbers are approved for substitution.

Several courses in the program may be transferred to four-year institutions. (See program advisor for details.)

All occupational courses must be passed with a minimum grade of C to qualify for graduation. For students who are undecided about their major, survey courses are available in the Developmental Studies Department.

A student may elect to accept full-time training-related employment during the last term of the program. This option is available after midterm only for occupational courses and if the student is in good academic standing. Students are responsible for

completing course requirements and should see the program advisor for details.

Supply fees are charged for some courses (see page 16).

## BUSINESS ADMINISTRATION PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| ACCT | 101L | Accounting Principles Lab I | 6 |
| ACCT | 111 | Accounting Math | 3 |
| BA | 113 | Introduction to Business (7½ weeks) | 2 |
| BA | 121 | Business Communications I | 3 |
| BA | 131 | Human Relations (7½ weeks) | 2 |
| | | *Communications Elective | 3 |
| *Term II* | | | |
| ACCT | 102L | Accounting Principles Lab II | 6 |
| BA | 122 | Business Communications II | 3 |
| BA | 133 | Principles of Management | 3 |
| BA | 150 | Introduction to Computer Processing | 3 |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| *Term III* | | | |
| ACCT | 252 | Computer Lab I | 3 |
| or | | | |
| ACCT | 260 | Cost Accounting | 3 |
| BA | 211 | Business Law | 3 |
| BA | 222L | Principles of Marketing Lab | 3 |
| [1]BA | 284L | Salesmanship | 3 |
| *MATH | 120 | Intermediate Algebra | 3 |
| | | [2]Support Courses | 3–6 |
| | | *Business Administration Certificate* | |
| *Term IV* | | | |
| | | *SPECIAL CONCENTRATION OPTIONS* | |
| | | MERCHANDISING | |
| BA | 251 | Retail Merchandising Management | 3 |
| BA | 284L | Salesmanship | 3 |
| *ECON | 200 | Macroeconomics | 3 |
| *PHIL | 245B | Business Ethics | 3 |
| | | Approved Support Courses | 3–6 |

SMALL BUSINESS MANAGEMENT

| | | | |
|---|---|---|---|
| BA | 284L | Salesmanship | 3 |
| *ECON | 200 | Macroeconomics | 3 |
| ENTR | 101L | Entrepreneurship | 6 |
| *PHIL | 245B | Business Ethics | 3 |
| | | Approved Support Course | 3 |

REAL ESTATE

*All real estate courses are offered evenings through the Continuing Education Division and should be interspersed throughout the entire program.*

| | | | |
|---|---|---|---|
| BA | 270 | Real Estate Law | 3 |
| BA | 271 | Real Estate Practice | 3 |
| | | Approved Support Course (1) | 3 |
| BA | 272 | Real Estate Appraisal | 3 |
| or | | | |
| BA | 273 | Real Estate Finance | 3 |
| or | | | |
| BA | 274 | Real Estate Investment | 3 |
| or | | | |
| BA | 275 | Property Management | 3 |
| or | | | |
| BA | 276 | Land Use Planning | 3 |
| or | | | |
| BA | 277 | Real Estate Comprehensive Contracts | 3 |
| or | | | |
| BA | 278 | Real Estate and Taxes | 3 |
| BA | 284L | Salesmanship | 3 |
| *ECON | 200 | Macroeconomics | 3 |
| *PHIL | 245B | Business Ethics | 3 |

GENERAL BUSINESS

| | | | |
|---|---|---|---|
| BA | 284L | Salesmanship | 3 |
| BA | 298 | Supervised Work Experience | 6 |
| *ECON | 200 | Macroeconomics | 3 |
| *PHIL | 245B | Business Ethics | 3 |
| | | Approved Support Courses | 3–6 |
| | | Total | 67–76 |

*Support Courses*

| | | | |
|---|---|---|---|
| ACCT | 240 | Tax Accounting I | 3 |
| ACCT | 252 | Computer Lab I | 3 |
| ACCT | 253 | Computer Lab II | 3 |
| ACCT | 260 | Cost Accounting | 3 |
| ACCT | 272 | Accounting Systems Design | 3 |
| ACCT | 280 | Managerial Accounting | 3 |
| BA | 111 | Communications (7½ weeks) | 2 |
| BA | 215 | Money and Banking | 3 |
| BA | 226 | Principles of Finance | 3 |
| BA | 240 | Investments | 3 |
| BA | 251 | Retail Merchandising Management | 3 |
| BA | 255 | Desktop Publishing | 3 |
| BA | 256 | Employment Procedures and Techniques (7½ weeks) | 2 |
| BA | 260 | Purchasing | 3 |
| BA | 285 | Fashion Concepts and Merchandising (Continuing Education) | 3 |
| BA | 286 | Advertising | 3 |
| BA | 287 | Delta Epsilon Chi Competition | 1 |
| BA | 298 | Supervised Work Experience | 6 |
| ENTR | 101L | Entrepreneurship Lab | 6 |

**Arts & Sciences courses required for associate degrees. Course descriptions on pages 24–32.*

*[1]For certificate students only. Degree students take BA 284L during Term IV.*

*[2]Certificate students may take 3–6 credit hours in support courses. Degree students take 3 credit hours in support courses.*

## COURSE DESCRIPTIONS

**ACCT 101L—Accounting Principles Lab I (6 cr)**
(*Prerequisites: MATH 099, Reading Improvement 099 or equivalent*) This is an introductory course in the theory and practice of accounting. This course meets 10 hours each week.

**ACCT 102L—Accounting Principles Lab II (6 cr)**
(*Prerequisites: ACCT 101L, ACCT 111*) This is a continuation of ACCT 101L. Planning and accounting for the partnership and corporate forms of business organization are covered. A brief introduction to cost accounting also is included. Upon successful completion of this course, the student—with minimal supervision—should be a competent bookkeeper for most small business organizations. This lab meets 10 hours each week.

**ACCT 111—Accounting Math (3 cr)**
(*Prerequisite: MATH 099 or equivalent*) This course covers basic arithmetic operations, familiarizes the student with a wide range of business applications for which math is required, and develops touch method skills using electronic calculators. This course meets five hours each week.

**ACCT 240—Tax Accounting I (3 cr)**
(*Prerequisites: ACCT 101L*) This course primarily examines the fundamental characteristics of federal income taxes as applied to individuals. This course meets five hours each week.

**ACCT 252—Computer Lab I (3 cr)**
(*Prerequisites: ACCT 102L, BA 150*) This IBM-compatible microcomputer lab uses LOTUS 1-2-3 for accounting and business applications. This lab meets five hours each week.

**ACCT 253—Computer Lab II (3 cr)**
(*Prerequisites: ACCT 102L, BA 150*) This microcomputer lab includes payroll, inventory control, accounts payable, accounts receivable and general ledger. Students use prepared integrated business software on microcomputers. This lab meets five hours each week.

**ACCT 260—Cost Accounting (3 cr)**
(*Prerequisite: ACCT 102L*) This course emphasizes construction and manufacturing as compared to merchandising or service businesses. The student performs the accounting operations for estimating and bidding. Labor and overhead factors of production are studied, and reports are prepared. This course meets five hours each week.

**ACCT 272—Accounting Systems Design (3 cr)**
(*Prerequisite: ACCT 102L*) Students study systems development through the design of a chart of accounts, an accounting manual, flow charts, control and support systems and reports to management. This course meets five hours each week.

**ACCT 280—Managerial Accounting (3 cr)**
(*Prerequisites: ACCT 102L*) Students learn how accounting data can be interpreted and used by management in planning and controlling business activities. This course meets five hours each week.

**BA 111—Communications (7½ weeks) (2 cr)**
(*Offered for Trades and Technologies students only*) The primary focus of this course is to develop effective communications skills. Course content includes fundamentals of grammar, punctuation and word usage. Effective expression in basic technical writing is stressed. This course meets five hours each week.

**BA 113—Introduction to Business (7½ weeks) (2 cr)**
The structure of business, its activities and problems are surveyed in this course. An understanding of the nature of the business world and its career opportunities also is provided. This course meets five hours each week.

**BA 121—Business Communications I (3 cr)**
The student learns to communicate effectively through the study of writing fundamentals. Students also have the opportunity to develop oral and listening skills. This course meets five hours each week.

**BA 122—Business Communications II (3 cr)**
(*Prerequisites: BA 121 and 25 words a minute typing skill*) The student learns to write effective business letters, reports and memoranda. Continued use of oral communication and listening skills is stressed. This course meets five hours each week.

**BA 131—Human Relations (7½ weeks) (2 cr)**
(*Available also for Trades and Technologies students*) This course deals with employee attitudes toward themselves and others. The importance of interpersonal relationships and work ethics is stressed. This course meets five hours each week.

**BA 133—Principles of Management (3 cr)**
This introductory course helps the student understand basic management functions including planning, organizing, staffing, directing and controlling. This course meets five hours each week.

**BA 150—Introduction to Computer Processing (3 cr)**
(*Prerequisite: 25 words a minute typing skill*) This course covers automated information systems, computer hardware, data entry and business software applications. Hands-on experience with microcomputers is provided. This course meets five hours each week.

**BA 211—Business Law (3 cr)**
This course provides a basic knowledge of law as it applies to all business dealings in our society. Particular emphasis is on the Uniform Commercial Code. Practical problems in law are considered. This course meets five hours each week.

**BA 215—Money and Banking (3 cr)**
(*Prerequisite: ACCT 102L*) This course covers the history, nature and function of money. Methods of institutional control and theories of monetary policy are included. This course meets five hours each week.

**BA 222L—Principles of Marketing Lab (3 cr)**
(*Prerequisite: ACCT 101L, BA 133 or permission of advisor*) This course is designed to study total marketing concepts—from the creation of the product, pricing and promotion to the distribution network—from a management point of view. A computer simulation project is included. This course meets five hours each week.

**BA 226—Principles of Finance (3 cr)**
(*Prerequisite: ACCT 102L*) Concepts and theories of finance are covered including the history of money, monetary systems and credit. Forms of business organizations, capital budgeting, source of funds, marketing securities, capital structure, foreign expansion and reorganization of a business firm are examined. This course meets five hours each week.

**BA 240—Investments (3 cr)**
(*Prerequisite: ACCT 102L*) Students study investment analysis, management, objectives, values and risks. This course meets five hours each week.

**BA 251—Retail Merchandising Management (3 cr)**
(*Generally offered fall term; prerequisite or corequisite BA 222L or permission of advisor*) Students study methods and practice of retail merchandising including target market decisions, buying, pricing, store locations and strategic planning. Computer lab assignments are included. This course meets five hours each week.

**BA 255—Desktop Publishing (3 cr)**
(*Prerequisite: BA 150 or CSCI 101 or SS 132 or permission of advisor*) The students will be given hands-on experience in desktop publishing. The course covers the major elements of the publishing process—editing, typesetting, design, graphic production and page makeup using a microcomputer. This course meets five hours each week.

**BA 256—Employment Procedures and Techniques (7½ weeks) (2 cr)**
This course provides the requisite skills for success in obtaining employment. Specific topics include preparation of cover letters and resumés, interviewing skills, telephone use in the job search, test-taking techniques and projection of a positive attitude and self-confidence. This course meets five hours each week.

**BA 260—Purchasing (3 cr)**
(*Generally offered summer term*) This course covers problems involved in public and private sector purchasing. Topics include value analysis, solicitation process and negotiation techniques, vendor selection, purchasing law, transportation considerations and inventory control practices. This course meets five hours each week.

**BA 284L—Salesmanship (3 cr)**
Personal selling skills are accented along with how to promote oneself, goods and services. This course meets five hours each week.

**BA 285—Fashion Concepts and Merchandising (3 cr)**
This introductory class covers fashion terminology, elements of design, apparel sizing and styling, basic construction and current trends in the fashion industry. This course meets five hours each week.

**BA 286—Advertising (3 cr)**
(*Generally offered winter term*) This class gives the student a basic understanding of the many elements of advertising. The advertising plan, media selection and schedule, budget, design and production, and advertising effectiveness are included. This course meets five hours each week.

**BA 287—Delta Epsilon Chi Competition (1 cr)**
This course prepares students to compete at state and national career development conferences. Students use sample written tests, role-playing case problems and classroom assignments that involve salesmanship, marketing, problem solving and human relations. This course meets two hours each week.

**BA 298—Supervised Work Experience (6 cr)**
(*Prerequisites: ACCT 102L and advisor's permission*) Students work a minimum of 150 hours at business/training-related supervised work stations. The student-trainee is paid by the cooperating firm and supervised jointly by T-VI and the employer.

**ENTR 101L—Entrepreneurship Lab (6 cr)**
During the first few days of the term, the instructor meets with each student to determine specific goals, problems or needs. Programs are then tailored to the individual. Daily tasks/activities are accomplished through lecture, group activities and independent work. Special workshop or seminar-type activities are scheduled throughout the term to deal with common areas of concern. This lab meets 10 hours each week.

# Cashier-Sales

## Certificate Program
## 1 Term, Main Campus

Persons who want to learn a skill quickly and find a job as soon as possible should consider this cashier-sales program.

It is a course for those preparing for entry-level jobs in retail and service occupations. It also will benefit students who want to explore sales as a possible career.

The cashier-sales laboratory teaches the skills of salesmanship, the cash register touch system and human relations. Students work with various makes and models of electromechanical and electronic cash registers and a computerized cash register/scanner.

The 15-week program provides up to 225 hours of classroom instruction and a minimum of 150 hours of paid supervised work experience with an approved cooperating employer. Students who complete the course receive certificates.

*This program does not qualify students for Veterans Administration training benefits or other student financial aid.*

There is a $15 supply fee for CASH 101L.

### CASHIER-SALES PROGRAM

| *Course Requirements* | | | *Cr Hrs* |
|---|---|---|---|
| CASH | 101L | Cashier-Sales Lab | 9 |
| CASH | 198 | Supervised Work Experience | 6 |
| | | Total | 15 |

### COURSE DESCRIPTIONS

**CASH 101L—Cashier-Sales Lab (9 cr)**
(*Prerequisite: Placement test*) Fundamentals of cashiering, merchandising math and retail salesmanship are taught in this course. Human and customer relations are covered extensively. This course meets 15 hours per week.

**CASH 198—Supervised Work Experience (6 cr)**
Students work a minimum of 150 hours at retailing-related, teacher-approved work stations. The student trainee is paid by the cooperating employer and supervised jointly by T-VI and the employer. There are times when it is impossible to place all students in work stations because of local employment requirements.

# Court Reporting

**Associate in Applied Science Degree/ Certificate Program**
**5 Terms, Main Campus**

The program trains qualified men and women for entry into the court reporting profession. The field is experiencing steady growth and offers many employment opportunities.

Court reporters are skilled professionals with machine shorthand and transcription skills who produce verbatim transcripts of proceedings. Their main responsibilities include preparing accurate transcripts of trials and hearings and taking depositions. Reporters are employed in many settings, including court proceedings, depositions, corporate meetings, arbitration hearings, conventions and legislative sessions.

The court reporting student has four options for successful completion of training goals:

Certificate Programs

Three terms ..... Text Processor/Scopist
Four terms ..... Rapid Text Writer
Five terms ..... Court Reporter

Associate Degree Program

Five terms ... Associate in Applied Science Degree in Court Reporting

To earn an associate degree, a student must successfully complete 55 hours of court reporting courses and labs and 15 hours of Arts & Sciences courses. The program takes approximately 75 weeks to complete.

Students in the certificate program acquire an employable skill as a text processor/scopist upon successful completion of the third term. If a student leaves the program at this point, a departmental certificate is awarded when requested within 12 months of the exit date.

Students in the certificate program acquire another employable skill as rapid text writer upon successful completion of the fourth term, and a departmental certificate is available.

A court reporter certificate may be earned when the student successfully completes program requirements of 57 credit hours of court reporting core courses and three credit hours in Arts & Sciences. The certificate program's total of 60 credit hours takes approximately 75 weeks (five terms) to complete. All occupational courses must be passed with a minimum grade of C to qualify for graduation.

One of the main goals of the certificate and degree programs is to prepare students to pass the state certification test.

### COURT REPORTING PROGRAM

| | | | *Cr Hrs* |
|---|---|---|---|
| *Term I* | | | |
| CR | 101L | Machine Shorthand Theory and Transcription | 6 |
| BA | 121 | Business Communications I | 3 |
| SS | 132 | Information Processing Concepts (7½ weeks) | 2 |
| CR | 121 | Introduction to Court Reporting (7½ weeks) | 2 |
| SS | 240 | Legal Terminology/Procedures | 3 |
| | | | 16 |
| *Term II* | | | |
| CR | 102L | Machine Shorthand I and Transcription (60–80–100) | 3 |
| SS | 102L | Typing Lab II | 6 |
| CR | 132 | Medical Terminology/Anatomy | 3 |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| | | | 12–15 |
| *Term III* | | | |
| CR | 201L | Machine Shorthand II and Transcription (120–140) | 3 |
| SS | 133 | Word Processing | 3 |
| BA | 211 | Business Law | 3 |
| *COMM | 221 | Interpersonal Communications | 3 |
| *ENG | 119 | Technical Communications | |
| or | | | |
| *ENG | 240 | Traditional Grammar | |
| | | or | |
| | | *Social Science Elective | 3 |
| †ENG | 240 | Traditional Grammar | 3 |
| | | | 12–15 |

*Term IV*

| | | | |
|---|---|---|---|
| CR | 202L | Machine Shorthand III and Transcription (160–180) | 3 |
| CR | 250 | Computer-Aided Transcription | 3 |
| * | | Math or Biological and Physical Science Elective | 3 |
| * | | Social Science Elective | 3 |
| | BA 131 | Human Relations (7½ weeks) | 2 |
| | | | 8–14 |

*Term V*

| | | | |
|---|---|---|---|
| CR | 203L | Machine Shorthand IV and Transcription (200–225) | 3 |
| CR | 260 | Court Reporting Procedures | 3 |
| CR | 298 | Supervised Work Experience | 6 |
| | | | 12 |
| | | Total for Degree | 70 |
| | | Total for Certificate | 60 |

*Suggested Social Science Courses*

| | | |
|---|---|---|
| *PSCI | 200 | U.S. Politics |
| *PSCI | 210 | State and Local Politics |
| *PSCI | 220 | Comparative Government and Politics |
| *PSY | 101 | General Psychology I |
| *PSY | 102 | General Psychology II |
| *SOC | 101 | Introduction to Sociology |
| *SOC | 111 | Criminal Justice System |

*Arts & Sciences course descriptions are on pages 24–32.*
*[1]Required for certificate.*

## COURSE DESCRIPTIONS

**BA 121—Business Communications I (3 cr)**
The student learns to communicate effectively through the study of writing fundamentals. Students also have the opportunity to develop oral and listening skills. This course meets five hours each week.

**BA 131—Human Relations (7½ weeks) (2 cr)**
This course deals with employee attitudes toward themselves and others. Interpersonal relationships and the work ethic are stressed. This course meets five hours each week.

**BA 211—Business Law (3 cr)**
This course provides a basic knowledge of law as it applies to all business dealings in our society. Particular emphasis is on the Uniform Commercial Code. Practical problems in law are considered. This course meets five hours each week.

**CR 101L—Machine Shorthand Theory and Transcription (6 cr)**
(*Prerequisites: Reading Improvement 099 or equivalent and SS 101L or equivalent*) This course introduces the principles of machine shorthand theory. The keyboard is learned, and the minimum speed requirement is 60 wpm. This course meets 10 hours each week.

**CR 102L—Machine Shorthand I and Transcription (60–80–100) (3 cr)**
(*Prerequisite: CR 101L*) Literary, jury charge and testimony materials are introduced. Speed reaches 100 wpm. This course meets 10 hours each week.

**CR 121—Introduction to Court Reporting (7½ weeks) (2 cr)**
This beginning course presents an overview of the court reporting profession. Information is given on the certification process, testing requirements and the NSRA organization. This course meets five hours each week.

**CR 132—Medical Terminology and Anatomy (3 cr)**
This course involves a study in medical terminology, with an emphasis in learning 350 Greek and Latin prefixes, suffixes, word roots and combining forms through the use of video cassettes. A concentrated study of the human anatomy is also included in the course. This course meets five hours each week.

**CR 201L—Machine Shorthand II and Transcription (120–140) (3 cr)**
(*Prerequisite: CR 102L*) Course includes testimony, literary, jury charge and Congressional dictation. Development of machine shorthand skill is 140 wpm. This course meets 10 hours each week.

**CR 202L—Machine Shorthand III and Transcription (160–180) (3 cr)**
(*Prerequisite: CR 201L*) Development of the machine shorthand skill is 180 wpm. Testing includes literary, jury charge, testimony and legal and medical dictation. This course meets 10 hours each week.

**CR 203L—Machine Shorthand IV and Transcription (200–225) (3 cr)**
(*Prerequisite: CR 202L*) Machine shorthand speed requires 225 wpm testimony, 200 wpm jury charge and 180 wpm literary. This course meets 10 hours each week.

**CR 250—Computer-Aided Transcription (CAT) (3 cr)**
(*Prerequisite: CR 201L*) This course provides hands-on training in using the computer to produce transcripts. The student builds a personal dictionary and learns about litigation support, key word indexing, data storage and record keeping. This course meets five hours each week.

**CR 260—Court Reporting Procedures (3 cr)**
(*Prerequisites: CR 202L, CR 250*) Students apply procedures in general courtroom, freelance reporting and transcript format. Instruction includes the reporting of video tape depositions. Writing skills and techniques for computer-aided transcription are reviewed. Students prepare resumés and acquire interviewing skills in this course. This course meets five hours each week.

**CR 298—Supervised Work Experience (6 cr)**
Course requirements are 150 clock hours of practical experience under the supervision of a Certified Shorthand Reporter. The student intern is required to record and to transcribe a minimum of 10 pages of transcript in two hours with 95 percent accuracy.

**SS 102L—Typing Lab II (6 cr)**
(*Prerequisite: SS 101L*) Typing competence of at least 50 words per minute is the goal. Students produce mailable business letters, manuscripts, tables, business forms and other correspondence. This course meets 10 hours each week.

**SS 132—Information Processing Concepts (7½ weeks) (2 cr)**
This course provides the student with an understanding of the computer and the word processor—how they work, how

they process data to produce useful information and how they can be integrated as a tool in the work environment. This course meets five hours each week.

**SS 133—Word Processing (3 cr)**
(*Prerequisites: SS 101L, SS 132 or BA 150*) Students receive instruction in the use of word processing software on the microcomputer. Emphasis is on practical office applications. This course meets five hours each week.

**SS 240—Legal Terminology/Procedures (3 cr)**
(*Prerequisite: SS 102L or corequisite CR 101L*) Meaning and spelling of legal terminology and legal Latin terminology, familiarization with legal procedures and client relationships are included in this course. This course meets five hours each week.

# Entrepreneurship
## (Small Business Start-Up and Operation)

**Main and Montoya Campuses**

The Entrepreneurship program is for persons who plan to open a small business and those who own or manage a business and want further training in principles, operations and/or expansion.

A $15 supply fee is charged for ENTR 101L.

### COURSE DESCRIPTION

**ENTR 101L—Entrepreneurship Lab (6 cr)**
During the term, the instructor meets with each student to determine specific goals, problems or needs. Programs are then tailored to the individual. Daily tasks/activities are accomplished through lecture, group activities and independent work. This course meets 10 hours per week.

# Legal Assistant Studies

**Associate in Applied Science Degree**
**4 Terms, Montoya Campus**

The Legal Assistant Studies program trains qualified men and women for entry into the legal profession.

Legal assistants are skilled professionals who perform tasks and services under the direct supervision of a licensed attorney. Responsibilities include drafting legal documents and correspondence, case management, interviewing and assisting clients and witnesses, data analysis, research and litigation support. Employment opportunities include placement in legal firms, corporate legal departments, insurance companies, real estate and title insurance firms and banks. Public sector opportunities with community legal service programs and federal, state and local government agencies are expected to increase over the next few years.

Students learn substantive and procedural law as well as legal skills. Studies cover the nature and philosophy of fundamental legal theory, the legal system and how that system relates to other disciplines, and the professional responsibilities of the legal assistant. The ethical and moral issues inherent in the practice of the profession are stressed.

To earn an associate degree, a student must successfully complete 63 credit hours of laboratory work, related legal theory and Arts & Sciences courses. All occupational courses must be passed with a minimum grade of C to qualify for graduation.

Supply fees are charged for some courses (see page 16).

### LEGAL ASSISTANT STUDIES PROGRAM

| | | | | *Cr Hrs* |
|---|---|---|---|---|
| *Term I* | | | | |
| *CSCI | 101 | Computer Literacy | | 3 |
| *ENG | 101 | Writing with Readings in Exposition | | 3 |
| LAS | 101 | Introduction to Legal Assistant Studies | | 3 |
| LAS | 123 | Torts | | 3 |
| *PSY | | General Psychology Elective | | 3 |
| *Term II* | | | | |
| *COMM | 221 | Interpersonal Communication | | 3 |
| *ENG | 119 | Technical Communications | | 3 |
| LAS | 102 | Business Organizations | | 3 |
| LAS | 111 | American Law and Ethics | | 3 |
| LAS | 124 | Legal Research and Writing I | | 3 |

*Note: All first- and second-term core courses are prerequisites for third- and fourth-term core courses.*

| | | | | |
|---|---|---|---|---|
| *Term III* | | | | |
| LAS | 201 | Contract Law | | 3 |
| LAS | 203 | Civil Litigation, Investigation and Discovery | | 3 |
| LAS | 204 | Legal Research and Writing II | | 3 |
| *MATH | 120 | Intermediate Algebra | | 3 |
| *PSCI | 200 | U.S. Politics | | 3 |
| *Term IV* | | | | |
| LAS | 222 | Criminal Procedure | | 3 |
| or | | | | |
| LAS | 223 | Domestic Relations | | 3 |
| LAS | 221 | Wills, Probate and Estate Planning | | 3 |
| LAS | 298 | Supervised Work Experience | | 6 |
| *PHIL | 156 | Logic and Critical Thinking | | 3 |
| | | Support Course | | 3 |
| | | | Total | 63 |

*Support Courses*

| | | | |
|---|---|---|---|
| ACCT | 101L | Accounting Principles Lab I | 6 |
| LAS | 211 | Real Estate Law | 3 |
| LAS | 230 | Advanced Civil Litigation | 3 |
| LAS | 232 | Personal Injury: Legal and Medical Aspects | 3 |
| LAS | 234 | Administrative Law | 3 |
| LAS | 236 | Discrimination/Labor/Employer-Employee Relations | 3 |
| LAS | 238 | Law Office Management and Human Relations | 3 |
| LAS | 299 | Topics Course | 3 |

**Arts & Sciences. Course descriptions on pages 24–32.*

## COURSE DESCRIPTIONS

**ACCT 101L—Accounting Principles Lab I (6 cr)**
(*Prerequisites: MATH 099, Reading Improvement 099 or equivalent*) This is an introductory course in the theory and practice of accounting.

**LAS 101—Introduction to Legal Assistant Studies (3 cr)**
(*Prerequisite: Reading Improvement 099 or equivalent*) This course covers the definition and role of the legal assistant, human relations, ethical responsibilities, the legal system, legal analysis and the process of litigation.

**LAS 102—Business Organizations (3 cr)**
(*Prerequisites: LAS 101, LAS 123*) Various types of business entities including sole proprietorships, partnerships and corporations are examined in this course. Also looked at are agency principles, franchising and regulatory requirements.

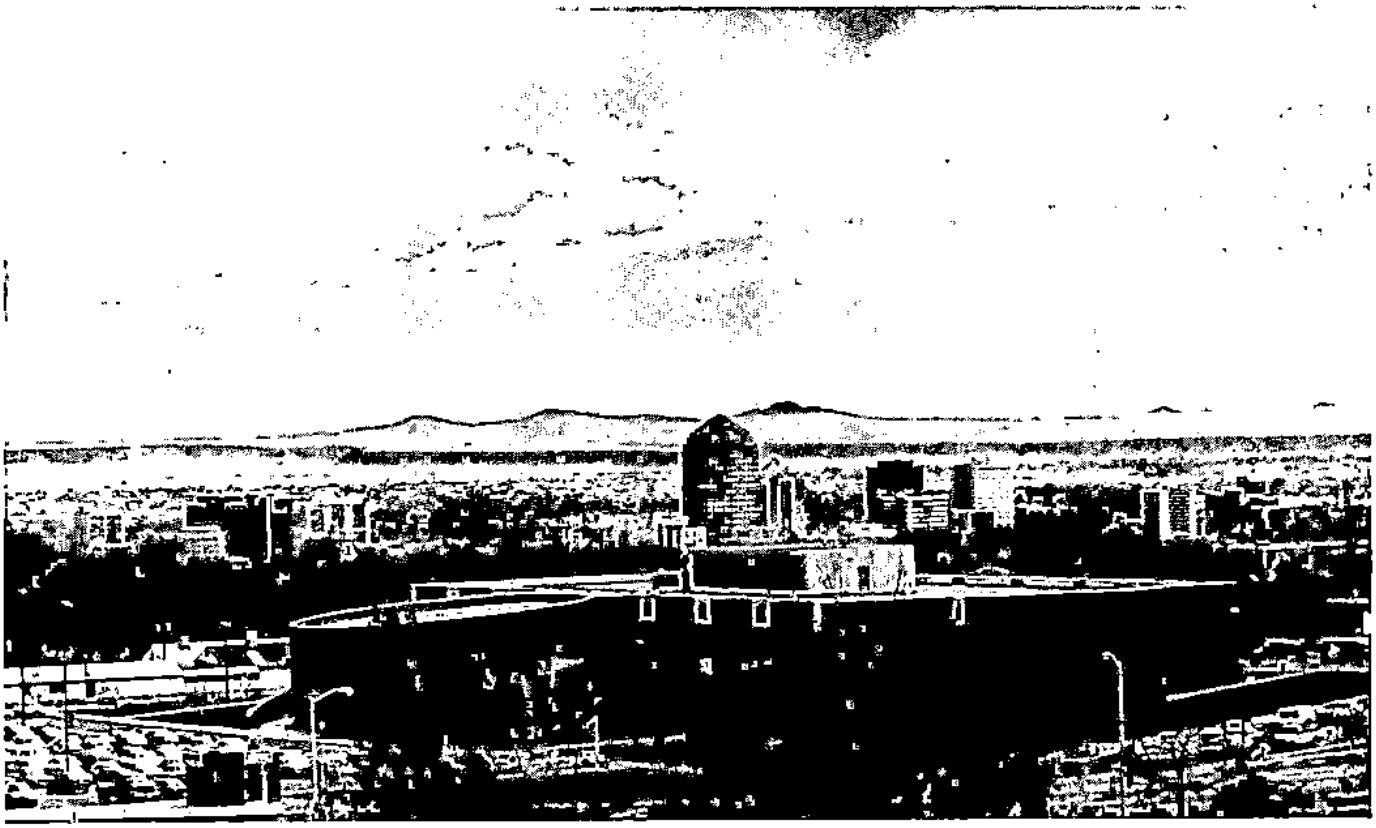
**LAS 111—American Law and Ethics (3 cr)**
(*Prerequisites: LAS 101, LAS 123*) The origins, nature, history and structure of the American judicial system are studied. Students will survey constitutional principles and cases. The rules of professional conduct for lawyers are emphasized.

**LAS 123—Torts (3 cr)**
(*Prerequisite: Reading Improvement 099 or equivalent*) This is a course in substantive tort law, concentrating on negligence, products liability, nonphysical injuries and their remedies and defenses. Students are given an overview of the trial process and draft pleadings and other legal documents.

**LAS 124—Legal Research and Writing I (3 cr)**
(*Prerequisites: CSCI 101, ENG 101, LAS 101, LAS 123*) The student is introduced to the principles and skills of writing case briefs and legal memoranda, with a focus on basic legal research sources and techniques, including Westlaw training. Significant time is spent at the law library.

**LAS 201—Contract Law (3 cr)**
(*Prerequisites: All core courses in first two terms*) This course is an introduction to the law of contracts, rights and responsibilities, consideration, types of contracts, remedies and assignments.

**LAS 203—Civil Litigation, Investigation and Discovery (3 cr)**
(*Prerequisites: All core courses in first two terms*) Client interviewing, investigation, commencement of actions, service of process, arbitration, discovery, settlement, trial and post-trial procedures are discussed in this course. Rules of civil procedure for the various courts, as well as the rules of evidence and appellate procedure are reviewed.



**LAS 204—Legal Research and Writing II (3 cr)**
(*Prerequisites: All core courses in first two terms*) As a continuation of Legal Research and Writing I, this course is designed to provide training in more advanced legal research problems with a focus on analysis and writing. It requires the preparation of sophisticated legal memoranda and documents.

**LAS 211—Real Estate Law (3 cr)**
(*Prerequisites: All core courses in first two terms*) This course is designed to provide knowledge of the fundamental rights of ownership, obligations of the real estate agent regarding contractual encumbrances, transfers, fiduciary rights and obligations owed to the parties represented, and basic contract law.

**LAS 221—Wills, Probate and Estate Planning (3 cr)**
(*Prerequisites: All core courses in first two terms*) This course covers drafting of wills and trusts, administration of estates, formal and informal probate proceedings and estate tax returns.

**LAS 222—Criminal Procedure (3 cr)**
(*Prerequisites: All core courses in first two terms*) This course focuses on criminal procedure including search and seizure law and preparation of cases from both the prosecution and defense perspectives.

**LAS 223—Domestic Relations (3 cr)**
(*Prerequisites: All core courses in first two terms*) Legal issues in family relations are explored in this course, with emphasis on local procedures in the Domestic Relations court.

**LAS 230—Advanced Civil Litigation (3 cr)**
(*Prerequisites: All core courses in the first three terms*) Students become involved in the litigation process by participating in a hypothetical case, completing tasks from client interviewing to preparation for appeal. Emphasis is placed on evidence rules and concepts.

**LAS 232—Personal Injury: Legal and Medical Aspects (3 cr)**
(*Prerequisites: All core courses in the first three terms*) This course deals with documentation of personal injuries and litigation in the areas of tort, workers' compensation and social security.

**LAS 234—Administrative Law (3 cr)**
(*Prerequisites: All core courses in the first three terms*) Studies pertaining to policies, practices and procedures of governmental agencies, and state and local administrations are included in this course.

**LAS 236—Discrimination/Labor/Employer-Employee Relations (3 cr)**
(*Prerequisites: All core courses in the first three terms*) This course includes an overview of hiring and firing, wages, grievance investigations, union and nonunion operations, efficient resolution of problems and controversies, employer preventive programs, discipline, wrongful discharge, employment records maintenance, safety and health, and liability.

**LAS 238—Law Office Management and Human Relations (3 cr)**
(*Prerequisite: CSCI 101*) This two-part course covers the administrative and human dynamics of working in a legal environment.

**LAS 298—Supervised Work Experience (6 cr)**
(*Prerequisites: All core courses in first three terms*) Students work a minimum of 150 hours at legal-assistant-related work stations. The student may be paid by the cooperating firm, and is jointly supervised by T-VI and the employer.

**LAS 299—Topics Course (3 cr)**
(*Prerequisites: All core courses in the first three terms and approval of the academic advisor*) In this course the student will choose an area of study in consultation with an instructor/supervisor. A sophisticated research paper will be completed by the student.

# Secretarial Studies

### Associate in Applied Science Degree/ Certificate Program
### 4 Terms, Main and Montoya Campuses

More and more businesses are actively looking for office workers—both men and women—who have the potential to be promoted to administrative positions. The secretarial graduate has a choice of seeking employment in many fields: legal, medical, governmental, technical, service and educational.

The Secretarial Studies student has four options for successful completion of training goals:

Certificate Programs

First two terms ..... Receptionist Certificate
Three terms ..... Clerical Certificate
Three terms plus
shorthand ..... Secretarial Certificate

Degree Program

Four terms ..... Associate Degree

Students acquire an employable skill upon successful completion of the second term. If a student leaves the program at this point, a departmental receptionist certificate is awarded if requested within 12 months of the exit date.

After successful completion of three terms of the Secretarial Studies program, the student may apply for a Clerical Certificate.

A student who completes three terms of the Secretarial Studies program and demonstrates a shorthand proficiency of 80 words a minute may apply for a Secretarial Certificate.

A student who completes the requirements for the Secretarial Certificate and a fourth term including occupational courses/Arts & Sciences courses may apply for an Associate in Applied Science degree.

In the third term, students may select a lab in one of the following areas: Medical Records Clerk/Receptionist, Electronic Office, Information Processing, and Legal. Some third term labs are not offered

every term, nor are they offered at each campus. Students should see the program counselor or advisor for details.

All occupational courses must be passed with a minimum grade of C to qualify for prerequisite requirements and for certificate or degree requirements. For students who are undecided about their major, survey courses are available in the Developmental Studies Department.

Students who want to enroll in a course "by permission of the academic advisor" may obtain the necessary forms from the department counselor. Permission does not constitute waiver of a course, nor does it grant credit for another course. See the department counselor or the program advisor for more information.

A student may elect to accept full-time training-related employment during the last term of the program. This option is available after midterm only for occupational courses and if the student is in good academic standing. Students are responsible for completing course requirements and should see the program advisor for details.

An entering student with a strong background in clerical or secretarial skills may challenge most courses by examination and substitute a more advanced course or add a support course.

Secretarial Studies associate degree candidates may want to take the Certified Professional Secretary (CPS) review courses as support courses. CPS is the nationally recognized rating for secretarial proficiency. (See pages 122–123 of the catalog for course descriptions.)

Individuals who have already attained a CPS rating may receive a possible 34 credit hours toward the Secretarial Studies associate degree. Contact the program advisor at either campus for more information about advanced placement.

Upon completion of this program, courses may be transferred to the University of New Mexico for credit toward a Bachelor's Degree in Business Education (see Secretarial Studies program advisor). Some Secretarial Studies courses may be taken in the evening through the Continuing Education Division. Courses with corresponding numbers are approved for substitution.

Supply fees are charged for some courses (see page 16).

## SECRETARIAL STUDIES CERTIFICATE (RECEPTIONIST/CLERICAL/ SECRETARIAL)

| | | | *Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| [2]BA | 131 | Human Relations (7½ weeks) | 2 |
| SS | 101L | Typing Lab I | 6 |
| SS | 111 | Business Math/Calculators | 3 |
| SS | 121 | Office Communications I | 3 |
| SS | 132 | Information Processing Concepts (7½ weeks) | 2 |
| SS | 134 | Shorthand I Gregg (optional) | 3 |
| or | | | |
| SS | 135 | Shorthand I Alphabetic (optional) | 3 |
| *Term II* | | | |
| SS | 102L | Typing Lab II | 6 |
| SS | 112 | Secretarial Accounting | 3 |
| SS | 122 | Office Communications II | 3 |
| SS | 133 | Word Processing | 3 |
| SS | 136 | Shorthand II (optional) | 3 |
| *Term III* (for all options except Legal option) | | | |
| SS | 201L | Information Processing Lab | 6 |
| or | | | |
| SS | 202L | Medical Records Clerk/Receptionist Lab | 6 |
| or | | | |
| SS | 206L | Electronic Office Lab | 6 |
| or | | | |
| SS | 298L | Supervised Work Experience | 6 |
| SS | 230 | Office Communications III | 3 |
| SS | 234 | Shorthand III (optional) | 3 |
| SS | 250 | Machine Transcription | 3 |
| SS | 260 | Business Procedures | 3 |
| | | Total | 55 |
| *Term III* (for Legal option only) | | | |
| BA | 211 | Business Law | 3 |
| SS | 234 | Shorthand III (optional) | 3 |
| SS | 204L | Legal Typing I | 3 |
| SS | 240 | Legal Terminology/Procedures | 3 |
| SS | 230 | Office Communications III | 3 |
| SS | 250 | Machine Transcription | 3 |
| | | Total | 55 |

*Note: A shorthand proficiency of 80 wpm is required for a secretarial certificate and a secretarial degree.*

## SECRETARIAL STUDIES ASSOCIATE DEGREE

*The following additional courses are required to earn the Secretarial Studies associate degree for all options except Legal option:*

| | | | *Cr Hrs |
|---|---|---|---|
| [1]BA | 113 | Introduction to Business (7½ weeks) | 2 |
| [1]COMM | 221 | Interpersonal Communication | 3 |
| [1]ENG | 101 | Writing with Readings in Exposition | 3 |
| SS | 134 | Shorthand I (Gregg) | 3 |
| or | | | |
| SS | 135 | Shorthand I (Alphabetic) | 3 |
| SS | 136 | Shorthand II | 3 |
| SS | 234 | Shorthand III | 3 |
| | | *Biological and Physical Science Elective or Math 120 Intermediate Algebra | 3 |
| | | *Arts & Sciences Elective | 3 |
| | | *Social Science/Humanities Elective | 3 |
| | | Total | 72 |

*Associate degree students in Legal option should take the following courses throughout their program:*

| | | | |
|---|---|---|---|
| SS | 134 | Shorthand I (Gregg) | 3 |
| or | | | |
| SS | 135 | Shorthand I (ABC) | 3 |
| SS | 136 | Shorthand II | 3 |
| SS | 234 | Shorthand III | 3 |
| SS | 205L | Legal Typing II | 3 |
| *COMM | 221 | Interpersonal Communications | 3 |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| *ENG | 102 | Analytic Writing | 3 |
| | | *Biological & Physical Science Elective | |
| | | or | |
| | | Math 120 Intermediate Algebra | 3 |
| | | *Social Science/Elective | 3 |
| | | Total | 73 |

*Support Courses*

| | | | |
|---|---|---|---|
| [3]ACCT | 101L | Accounting Principles Lab I | 6 |
| [3]BA | 113 | Introduction to Business (7½ weeks) | 2 |
| [3]BA | 133 | Principles of Management | 3 |
| [3]BA | 150 | Introduction to Computer Processing | 3 |
| BA | 211 | Business Law | 3 |
| [3]BA | 222 | Principles of Marketing | 3 |
| BA | 255 | Desktop Publishing | 3 |
| BA | 256 | Employment Procedures and Techniques (7½ weeks) | 2 |
| [3]COMM | 130 | Public Speaking | 3 |
| [3]COMM | 240 | Organizational Communications | 3 |
| [3]LAS | 123 | Torts | 3 |
| [3]PHIL | 156 | Logic and Critical Thinking | 3 |
| [3]PHIL | 245B | Business Ethics | 3 |
| [3]PSCI | 220 | Comparative Government and Politics | 3 |
| [3]SOC | 111 | Criminal Justice System | 3 |
| [3]SOC | 212 | Juvenile Delinquency | 3 |
| [3]SOC | 213 | Criminology | 3 |
| [3]SS | 113 | Cashiering | 3 |
| SS | 134 | Shorthand I (Gregg) | 3 |
| SS | 135 | Shorthand I (Alphabetic) | 3 |
| SS | 136 | Shorthand II | 3 |
| SS | 204 | Legal Typing I | 3 |
| [3]SS | 234 | Shorthand III | 3 |
| SS | 240 | Legal Terminology and Procedures | 3 |
| SS | 270 | CPS Review, Part I | 3 |
| SS | 271 | CPS Review, Part II | 3 |

**Arts & Sciences. Course descriptions on pages 24–32.*
*[1]To be taken in place of BA 131.*
*[2]Degree students take BA 113 in place of BA 131.*
*[3]Certificate and degree programs with Legal specialty will accept only these support courses.*

## COURSE DESCRIPTIONS

**ACCT 101L—Accounting Principles Lab I (6 cr)**
(*Prerequisites: MATH 099, Reading Improvement 099 or equivalent*) This is an introductory course in the theory and practice of accounting. This course meets 10 hours per week.

**BA 113—Introduction to Business (7½ weeks) (2 cr)**
The structure of business, its activities and problems are surveyed in this course. An understanding of the nature of the business world also is provided. This course meets five hours per week.

**BA 131—Human Relations (7½ weeks) (2 cr)**
This course deals with employee attitudes toward themselves and others. The importance of interpersonal relationships and the work ethic is stressed. Study skills are also covered. This course meets five hours per week.

**BA 133—Principles of Management (3 cr)**
In this introductory course, students develop an understanding of the basic management functions including planning, organizing, staffing, directing and controlling. This course meets five hours per week.

**BA 150—Introduction to Computer Processing (3 cr)**
(*Prerequisite: 25 words a minute typing skill*) This course introduces automated information systems, computer hardware, data entry, business software applications and BASIC programming language. Hands-on experience with microcomputers is provided. This course meets five hours per week.

**BA 211—Business Law (3 cr)**
This course provides a basic knowledge of law as it applies to all business dealings in our society. Particular emphasis is on the Uniform Commercial Code. Practical problems in law are considered. This course meets five hours per week.

**BA 222—Principles of Marketing (3 cr)**
(*Prerequisites: ACCT 101L, BA 133 or permission of advisor*) This course is designed to study total marketing concepts from the production of goods to delivery to the potential customer—from a management point of view. This course meets five hours per week.

**BA 255—Desktop Publishing (3 cr)**
(*Prerequisite: BA 150 or CSCI 101 or SS 132 or permission of advisor*) The students will be given hands-on experience in desktop publishing. The course covers the major elements of

the publishing process—editing, typesetting, design, graphic production and page makeup using a microcomputer. This course meets five hours a week.

**BA 256—Employment Procedures and Techniques (7½ weeks) (2 cr)**
This course provides the requisite skills for success in obtaining employment. Specific topics include preparation of cover letters and resumés, interviewing skills, telephone use in the job search, test-taking techniques and projecting a positive attitude and self-confidence. This course meets five hours a week.

**SS 101L—Typing Lab I (6 cr)**
This course builds the student's skills to a typing proficiency of at least 40 words per minute. The student practices typing of business letters, memos, business forms and reports. This course meets 10 hours per week.

**SS 102L—Typing Lab II (6 cr)**
(*Prerequisite: SS 101L*) Typing competence of at least 50 words per minute is the goal. Students produce mailable business letters, reports, tables, business forms and other correspondence. This course meets 10 hours per week.

**SS 111—Business Mathematics/Calculators (3 cr)**
(*Prerequisite: MATH 099 or equivalent*) This course features a combined approach to teaching business mathematics and calculators. Students receive a thorough review of math fundamentals and their applications in solving business problems. Calculator instruction stresses use of the touch method. This course meets five hours per week.

**SS 112—Secretarial Accounting (3 cr)**
(*Prerequisite: SS 111, SS 132*) This course is a study of the complete bookkeeping cycle including preparation of the balance sheet, income statement and worksheet. Emphasis is on journalizing, posting, accounts payable and accounts receivable. Payroll accounting also is covered. Students work on a computerized package covering accounts receivable, accounts payable and payroll. This course meets five hours per week.

**SS 113—Cashiering (3 cr)**
Operation of the cash register, including the ability to solve procedural problems that occur at a register and checkout station, is developed in this course. Instruction also focuses on bank teller applications, fundamentals of retail sales, and store security. This course meets five hours per week.

**SS 121—Office Communications I (3 cr)**
(*Prerequisite: Reading Improvement 099 or equivalent*) This course is an introduction to oral and written communications with emphasis on vocabulary building, spelling, grammar, punctuation, oral expression and listening skills. This course meets five hours per week.

**SS 122—Office Communications II (3 cr)**
(*Prerequisites: SS 101L, SS 121*) This course is a continuation of SS 121 with greater emphasis on punctuation, and sentence and paragraph construction. Students receive an introduction to telephone techniques. This course meets five hours per week.

**SS 132—Information Processing Concepts (7½ weeks) (2 cr)**
(*Prerequisite: Typing skill of 25 words a minute on a five-minute timed writing; or corequisite: SS 101L*) This course provides the student with an understanding of how the computer processes data to produce useful information. This course meets five hours per week.

**SS 133—Word Processing (3 cr)**
(*Prerequisites: SS 101L, SS 132 or permission of academic advisor*) Students learn word processing software on the microcomputer. Emphasis is on practical office applications. This course meets five hours per week.

**SS 134—Shorthand I (Gregg) (3 cr)**
This introductory course covers the theory and writing of Gregg shorthand. Transcription skills are introduced. This course meets five hours per week.

**SS 135—Shorthand I (Alphabetic) (3 cr)**
Reading and writing of ABC Stenoscript shorthand is learned. Transcription skills are introduced. This course meets five hours per week.

**SS 136—Shorthand II (3 cr)**
(*Prerequisites: SS 134 or SS 135 or knowledge of theory of a shorthand system and a minimum typing skill of 25 words a minute on a five-minute timed writing or SS 101L*) The goal for this course is a minimum dictation speed of 70 words per minute on new materials and transcription at a minimum rate of 14 words per minute. This course meets five hours per week.

**SS 201L—Information Processing Lab (6 cr)**
(*Prerequisites: SS 102L, SS 133*) Advanced instruction is provided in the use of microcomputers. Applications include advanced word processing, electronic spreadsheets and database management. This course meets 10 hours per week.

**SS 202L—Medical Records Clerk/Receptionist Lab (6 cr)**
(*Prerequisites: SS 102L, SS 111, SS 122, SS 133*) Course content includes basic anatomy, medical terminology, transcription, word processing, record keeping, insurance form completion, appointment handling, telephone techniques and medical ethics. This course meets 10 hours per week.

**SS 204L—Legal Typing I (3 cr)**
(*Prerequisite: SS 102L; corequisite: SS 240*) Typing competence of at least 55 words per minute is the goal of this course. Instruction includes the preparation of mailable legal correspondence and forms from audio tape, typed copy and preprinted forms. This course meets five hours per week.

**SS 205L—Legal Typing II**
(*Prerequisite: SS 204L*) Typing competence of at least 60 words per minute is the goal of this course. Students produce mailable documents covering four major fields of law—real estate and property transfer, litigation, wills and probate, and corporate. Machine transcription activities involve language usage and a variety of formats and documents. This course meets five hours per week.

**SS 206L—Electronic Office Lab (6 cr)**
(*Prerequisites: SS 102L, SS 133; prerequisite or corequisite: SS 112*) This lab offers the culmination of clerical applications in a realistic office environment using microcomputers, electronic typewriters, transcribers, calculators and telephones. Students apply advanced word processing and spreadsheet or database management to a variety of activities including office documents, payroll and related accounting procedures, mailing lists and inventory. Time management, decision making and priority setting are emphasized. This course meets 10 hours per week.

**SS 230—Office Communications III (3 cr)**
(*Prerequisites: SS 101L, SS 122*) Principles of writing and composition of business correspondence are covered. Contin-

ued emphasis is on grammar, punctuation, spelling, oral communication and listening skills. This course meets five hours per week.

**SS 234—Shorthand III (3 cr)**
(*Prerequisite: SS 136*) The goal for this course is a minimum dictation speed of 80 words per minute on new materials and transcription at a minimum rate of 20 words per minute. This course meets five hours per week.

**SS 240—Legal Terminology/Procedures (3 cr)**
Meaning and spelling of legal terminology, familiarization with legal procedures, and client relationships are included in this course. This course meets five hours per week.

**SS 250—Machine Transcription (3 cr)**
(*Prerequisites: SS 102L, SS 122*) This course builds speed and accuracy in the transcription of mailable copy at a minimum rate of 20 words per minute. This course meets five hours per week.

**SS 255—Medical Transcription (3 cr)**
(*Prerequisites: Typing skill of 40 words per minute on a five-minute timed writing, competence in grammar and punctuation, and permission of the instructor*) Students learn to transcribe medical records using word processing software. Medical terminology, anatomy/physiology and English skills are also taught. This course meets five hours per week.

**SS 260—Business Procedures (3 cr)**
(*Prerequisites: SS 102L, SS 122*) Office procedures, records management, human relations and job portfolio preparation are included in this course. This course should be taken in the student's final term. This course meets five hours per week.

**SS 270—CPS Review, Part I (3 cr)**
This course prepares individuals for the Certified Professional Secretary examination. Topics covered are behavioral science in business, business law, and economics and management. This course meets three hours per week.

**SS 271—CPS Review, Part II (3 cr)**
This course prepares individuals for the Certified Professional Secretary examination. Topics covered are accounting, office administration and communications, and office technology. This course meets three hours per week.

**SS 298L—Supervised Work Experience (6 cr)**
(*Prerequisites: SS 102L and typing skill of 55 words per minute on a five-minute timed writing and permission of the instructor/academic advisor*) Students work a minimum of 150 hours at office-related supervised work stations. The student trainee is paid by the cooperating firm and supervised jointly by T-VI and the employer. The student and employer determine the weekly contact hours.

# HEALTH OCCUPATIONS DEPARTMENT

T-VI's Health Occupations Department includes the following nursing programs: Associate Degree in Nursing, Nursing Assistant, Nursing Home Attendant, Home Health Attendant, Practical Nurse, Perioperative Registered Nurse Specialist, Licensed Practical Nurse Refresher and Registered Nurse Refresher. Other Health Occupations majors are: Health Unit Clerk, Medical Laboratory Technician, Phlebotomist and Respiratory Therapy Technician. The Practical Nurse and Associate Degree in Nursing programs are cosponsored by T-VI and Presbyterian Hospital Center.

Special topics courses, identified with a 296, are offered on demand and when a sufficient number of people apply. Courses are based on an approved curriculum and follow the same standards as any courses offered in the department. Certificates are awarded upon completion of course requirements.

Classes for most programs are held in the C Building at Main Campus. The Helene Fuld Library and audiovisual collections, part of Main Campus Library Services, provide excellent learning resources.

Learning laboratories are equipped with hospital furnishings and supplies, respiratory therapy machines and life-like models which give students the chance to practice basic skills needed for clinical experiences. Students have supervised patient practicums and observations at different community agencies.

ADMISSION: Applicants for all Health Occupations programs except Nursing Assistant, Nursing Home Attendant and Home Health Attendant must have a high school or General Educational Development (GED) diploma because of licensing or health care employer requirements. There is also a math skill requirement met by making a satisfactory score on a math examination.

Health Unit Clerk is offered winter and summer terms only. Phlebotomist and special topics courses are offered on demand. The Licensed Practical Nurse Refresher is offered in February and the Registered Nurse Refresher in October. Nursing Home Attendant is offered in May and Home Health Attendant in January and September. Contact the Health Occupations Department for information on starting dates and application procedures.

The Practical Nurse, Perioperative Registered Nurse Specialist and Respiratory Therapy Technician programs have beginning groups in the fall term only. The Medical Laboratory Technician program has a beginning group in the winter term only.

Because there are more applicants than training facilities for both the Practical Nurse and Associate Degree Nurse programs, applications are not currently being accepted. Contact the department for more information on when applications will be accepted.

## Health Unit Clerk

**Certificate Program**
**1 Term, Main Campus**

The Health Unit Clerk program trains persons to work in hospitals, elder care centers, outpatient clinics and physicians' offices. Transcribing doctors' written orders, typing, ordering supplies, answering the telephone, working with computers, and communicating with patients, visitors and staff are typical activities.

To be admitted, applicants must have a high school diploma or GED, read at the seventh grade level, pass the admissions math test and type 25 words per minute. Applicants also must be able to write clearly and accurately and have the ability to speak distinctly to others.

There is a $30 personal equipment fee which covers the required uniform top, parking fees and health tests. Neutral-colored slacks or skirts are required, but are not covered by the fee.

The 375-hour program lasts 15 weeks, with nine weeks of classroom theory and six weeks of clinical practice in local hospitals and hospital outpatient clinics. A grade of C or better is required for all coursework. A certificate is awarded upon completion.

Health Unit Clerk is offered in the winter and summer terms only.

### HEALTH UNIT CLERK PROGRAM

| *Course Requirements* | | | *Cr Hrs* |
|---|---|---|---|
| HUC | 101L | Health Unit Clerk Theory and Lab | 8 |
| HUC | 121C | Health Unit Clerk Clinical Practice | 7 |
| | | Total | 15 |

### COURSE DESCRIPTIONS

**HUC 101L—Health Unit Clerk Theory and Lab (8 cr)**
*(Prerequisite: Admission to the program)* This course combines a number of topics including orientation to the hospital,

patient confidentiality and role of the health unit clerk. Presentations and practice of medical terms, anatomy, abbreviations, communications, pharmacological terms, computerized patient information systems, forms and order transcriptions are included. Course meets five hours a day, five days a week for nine weeks.

**HUC 121C—Health Unit Clerk Clinical Practice (7 cr)**
*(Prerequisites: Successful completion of HUC 101L and ability to type 25 wpm)* Supervised clinical experience takes place in local hospitals and hospital out-patient clinics during the last six weeks of the program. Course meets five hours a day, five days a week for six weeks.

# Medical Laboratory Technician

**Associate in Science Degree**
**5 Terms, Main Campus**

The five-term Medical Laboratory Technician program prepares students to perform laboratory procedures which aid the physician and pathologist in the diagnosis and treatment of disease. Medical Laboratory Technicians (MLTs) work in clinics, hospitals, private laboratories and physician office labs collecting blood specimens and performing test procedures in such disciplines as clinical chemistry, hematology, immunohematology, immunology, microbiology and urinalysis under the supervision of a pathologist and medical technologist.

To be admitted, students must have satisfactory ACT scores in math and English. Applicants must also score at least 19 on the ACT in scientific reasoning and meet the following general requirements for admission:

- Submit transcripts of previous education including high school, vocational school or college. College transcripts must be official.
- Score at least 85% on the health occupations basic math entrance test. Applicants may retest once. Applicants with two unsuccessful attempts on the test must successfully complete health math in the Developmental Studies Department before they can be accepted into the program.

Completion of the following prerequisites:

- MATH 121 (completed with a grade of C or better).
- High school chemistry or CHEM 111/112L (completed with a grade of C or better) or a higher level college chemistry course completed with a grade of C or better.
- Call the Health Occupations Department to schedule a personal interview with a program representative. Interviews are scheduled after applicants complete preadmission requirements.

- If selected for the program, submit completed health forms with evidence of current immunizations and a physical examination before beginning the practicum portion.

Applicants will be admitted to the program on a space available basis once all admission requirements are met. The program begins in the winter term of each year and has a capacity of 20 students.

Medical Laboratory Technician students will obtain both academic instruction and practical experience. A grade of C or better must be earned in all courses to progress through the program and graduate with an associate in science degree. The clinical practicum experience at affiliated hospitals and laboratories is designed to provide actual experience in performing laboratory tests under the direction of a supervisor. Students must arrange for their own transportation to the hospitals or labs.

There is an equipment charge of $40 for two lab coats, parking fee and name tag. Each MLT laboratory course also has a $15 fee.

Arts & Sciences courses listed in the curriculum may be taken prior to entering the program. If a student is selected for the program, credit for these courses will be given if a grade of C or better was earned in the course and lab.

**MEDICAL LABORATORY TECHNICIAN PROGRAM**

| *Term 1* | | | *Cr Hrs* |
|---|---|---|---|
| [1]BIO | 123 | Biology for Health Sciences | 3 |
| [1]BIO | 124L | Biology for Health Sciences Lab | 1 |
| [1]ENG | 101 | Writing with Readings in Exposition | 3 |
| [1]CHEM | 121L | General Chemistry | 4 |
| MLT | 110L | Introduction to Medical Technology | 4 |
| | | [2]Communications Elective (not required) | 3 |

| | | | |
|---|---|---|---|
| *Term II* | | | |
| [1]BIO | 136 | Human Anatomy and Physiology for Non-Majors | 3 |
| [1]BIO | 139L | Human Anatomy and Physiology Lab for Non-Majors | 1 |
| [1]CHEM | 122L | General Chemistry II | 4 |
| MLT | 112L | Clinical Immunology | 2 |
| MLT | 151C | Clinical Experience Urinalysis/ Phlebotomy | 4 |
| *Term III* | | | |
| [1]BIO | 239 | Microbiology for Health Sciences | 3 |
| [1]BIO | 239L | Microbiology Lab for Health Sciences | 1 |
| | | [4]Humanities/Social Science Elective | 3 |
| [3]MLT | 201L | Clinical Chemistry | 7 |
| *Term IV* | | | |
| MLT | 202L | Clinical Microbiology | 5 |
| [3]MLT | 203L | Clinical Hematology/Coagulation | 6 |
| [3]MLT | 204L | Clinical Immunohematology | 3 |
| *Term V* | | | |
| MLT | 250C | Clinical Experience | 12 |
| | | Total | 69–72 |

**Arts & Sciences. Course descriptions on pages 24–32.*
*NOTE: Additional college courses may be considered for transfer credit if completed at an accredited college or university with a grade of C or better and equivalent credits. Official transcripts must be sent to the T-VI Records Office for consideration of transfer credit eligibility prior to admission to the program.*
*[2]Communications elective not required for graduation but necessary for transfer to Bachelor's Degree Medical Technology program at UNM.*
*[3]Courses taught by the University of New Mexico faculty at the Medical Laboratory Sciences Building on the UNM campus. Students are charged T-VI tuition rates for these courses.*
*[4]PHIL 245M—Biomedical Ethics strongly recommended.*

## COURSE DESCRIPTIONS

**MLT 110L—Introduction to Medical Technology (4 cr)**
(*Prerequisite: admission to the program*) The student is introduced to basic medical laboratory techniques emphasizing urinalysis. The course includes principles and procedures of the chemical and microscopic analysis of urine, laboratory mathematics, phlebotomy skills and safety procedures. Class meets six hours per week.

**MLT 112L—Clinical Immunology (2 cr)**
(*Prerequisite: MLT 110L*) This course offers a basic study of the body's immune response and serological methods used in testing for immunological reactions. Class meets four hours per week.

**MLT 151C—Clinical Experience Urinalysis/Phlebotomy (4 cr)**
(*Prerequisite: MLT 110L*) This course is designed for students to practice procedures learned in urinalysis and phlebotomy by giving them practical experience at affiliated hospitals. Class meets 12 hours per week.

**MLT 201L—Clinical Chemistry (7 cr)**
(*Prerequisites: CHEM 121L, CHEM 122L, MLT 110L, MLT 112L, MLT 151C*) The basic chemical reactions that occur in normal and disease processes of the body and the principles and methods used in testing for chemical components in blood and other body fluids are studied in this course. It includes basic instrumentation and laboratory experiences for performing the basic procedures used in a clinical chemistry laboratory. Class meets 11 hours per week.

**MLT 202L—Clinical Microbiology (5 cr)**
(*Prerequisites: BIO 239/239L, MLT 110L, MLT 112L*) A comprehensive study of clinical bacteriology, mycology and parasitology is presented including macroscopic and microscopic identification of organisms, antibiotics susceptibility testing, life cycles, and pathology and etiology of various diseases. Virology is introduced. Class meets nine hours per week.

**MLT 203L—Clinical Hematology/Coagulation (6 cr)**
(*Prerequisites: MLT 110L, MLT 112L, MLT 151C, MLT 201L*) A basic study is presented of normal and abnormal blood cell enumeration and morphology, and the coagulation mechanisms. Included are the principles of routine testing methods involved in cell counting, evaluation of coagulation factors and other routine procedures performed in the hematology laboratory. There also is laboratory experience in the performance of basic procedures used in a clinical hematology laboratory. Class meets 10 hours per week.

**MLT 204L—Clinical Immunohematology (3 cr)**
(*Prerequisites: MLT 110L, MLT 112L, MLT 151C, MLT 201L*) This course is a basic study of theory, principles and test methods for determining blood group typing, antibody detection and identification, crossmatching and component therapy. Laboratory experiences are included for practicing the basic procedures to perform in a clinical immunohematology lab. Class meets five hours per week.

**MLT 250C—Clinical Experience (12 cr)**
(*Prerequisites: MLT 110L, MLT 112L, MLT 151C, MLT 201L, MLT 202L, MLT 203L, MLT 204L*) Supervised clinical practice takes place in the clinical laboratories of affiliated hospitals with rotations through hematology/coagulation, microbiology, immunology, chemistry and immunohematology departments. Students practice procedures and apply theory learned in MLT 201L, MLT 202L, MLT 203L, MLT 204L and MLT 112L. Class meets 36 hours per week.

# Phlebotomist

**Certificate Program**
**10 Weeks, Main Campus**

The primary work of a phlebotomist is to draw blood specimens from health care clients for testing. A phlebotomist generally works part time in a medical laboratory under the supervision of a registered technologist.

The job includes establishing a professional relationship with the client, selecting and preparing the skin puncture site, collecting specimens, preparing and maintaining equipment used to obtain blood specimens, caring for the client after specimen collection, entering data into the computer for

the testing process, and performing clerical duties related to laboratory test recordkeeping. The job also requires a lot of walking, bending and standing.

Applicants must have a high school diploma or GED, verbal ability to communicate with clients, basic math skills for calculating dosages and timing tests, and manual dexterity required to handle laboratory equipment. The student must be able to read orders and labels associated with the procedures. To be admitted, applicants must pass the admissions math test and read at the seventh grade level.

To receive a certificate, a student must complete the 10-week program, which includes 250 hours of classroom instruction and clinical experience in local hospitals and/or clinics, with a grade of C or better in all coursework.

A $45 equipment fee covers the cost of a lab coat, health tests, name tags, parking fees and other equipment.

The program is offered on the basis of demand and need. Information on starting dates is available from the Health Occupations Department.

*This program does not qualify students for Veterans Administration benefits or other financial aid.*

### PHLEBOTOMIST PROGRAM

| *Course Requirements* | | | *Cr Hrs* |
|---|---|---|---|
| PHLB | 101L | Phlebotomist Theory and Lab..... | 6 |
| PHLB | 121C | Phlebotomist Clinical Practice ..... | 3 |
| | | Total :..... | 9 |

### COURSE DESCRIPTIONS

**PHLB 101L—Phlebotomist Theory and Lab (6 cr)**
(*Prerequisite: admission to the program; corequisite: PHLB 121C*) Students learn the procedures for collecting blood and other specimens from patients. Interpersonal relationships with patients, peers and staff are stressed. An introduction to the anatomy and physiology of the major body systems, computer processes and laboratory clerical duties also is included. Class meets five hours a day weeks 1–3 and week 10. Weeks 4–9 class meets Mondays and Fridays five hours each day.

**PHLB 121C—Phlebotomist Clinical Practice (3 cr)**
(*Corequisite: PHLB 101L*) Students practice skills and apply the theory learned in class during supervised clinical practice in city hospitals and/or clinics. Class meets five hours per day Tuesday through Thursday weeks 4–9.

# Respiratory Therapy Technician

**Certificate Program**
**3 Terms, Main Campus**

The Respiratory Therapy Technician program teaches the knowledge and skills required for treatment, management, control and care of patients with breathing problems. The one-year program includes classroom and laboratory instruction and supervised clinical experiences at local hospitals and other health care facilities.

Employment opportunities for respiratory therapy technicians are available nationwide in urban and rural health care facilities including veteran and military base hospitals. The newest employment opportunities are with medical equipment suppliers and agencies providing home health care to pulmonary patients.

The program is accredited by the American Medical Association's Committee on Allied Health Education and Accreditation and the Joint Review Committee for Respiratory Therapy Education. Graduates are eligible to take the National Board for Respiratory Care certification exam to obtain Certified Respiratory Therapy Technician credentials. Successful completion of this exam also allows individuals to be recognized as Licensed Respiratory Care Practitioners in New Mexico.

Graduates may wish to continue their training by completing a second year of coursework at the Uni-

versity of New Mexico. This additional training prepares certified technicians to become registered therapists. An Associate of Applied Science Degree is awarded by the UNM School of Medicine/Allied Health Sciences Center upon completion of the required coursework.

Twenty-four qualified applicants will be selected to start Respiratory Therapy Technician coursework each fall term. Additional qualified applicants—if not selected to fill vacancies that occur prior to the start of classes—will be eligible to start coursework the succeeding fall term. Required Arts & Sciences courses may be completed during this waiting period.

*Selection of students is based upon the date by which all entrance requirements have been met and required documents are received in Records Office.*

To meet entrance requirements an applicant must:

- Complete T-VI admissions application form.
- Provide proof of high school or GED diploma.
- Complete the ACT or submit test scores taken within the last five years.

  Minimum ACT scores:

  Composite.....18
  Math.....16
  Scientific Reasoning.....19

  —If the composite score is at least 18 but the math score is less than 16, the applicant must successfully complete a 100-level math course prior to entering the program.

  —If the composite score is at least 18 but the scientific reasoning score is less than 19, the applicant must successfully complete a 100-level course in scientific reasoning prior to entering the program.

  —If the composite score is less than 18, the applicant must either successfully complete 100-level courses in all subjects where scores are deficient prior to entering the program or retake the ACT and achieve minimum scores.

Applicants who have successfully completed 15 credit hours of Arts & Sciences courses, including communications and math, at a regionally accredited college or university need not take the ACT. Official transcripts of college work must be submitted to T-VI. Completion of 100-level courses in all subject areas of the ACT also qualifies applicants without ACT scores. Applicant may qualify also by having a combination of 100-level courses and Arts & Sciences courses which cover subject areas on the ACT.

- Complete a personal interview with a Respiratory Therapy Technician program faculty member after meeting entrance requirements.
- After acceptance into the program, submit a completed physical examination form.

Respiratory therapy students pay a $75 equipment fee when they begin the program to cover the cost of the required uniform, identification badges and parking fees. Additional costs include purchase of a stethoscope, bandage scissors and graduation pin, and the pre-entrance physical exam.

Arts & Sciences courses which are part of the Respiratory Therapy Technician curriculum may be taken prior to entering the program. When a student enters the program, credit will be given for courses with final grades of C or better.

Students admitted to the program must earn a grade of C or better in all courses to progress through the program and graduate.

## RESPIRATORY THERAPY TECHNICIAN PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| *[1]BIO | | Science Requirement—Biology | 4 |
| *[1]MATH | | Mathematics Requirement—Algebra | 3 |
| RTT | 110 | Respiratory Therapy Principles and Practices I | 3 |
| RTT | 115L | Respiratory Therapy Lab I | 1 |
| RTT | 121C | Clinical Experiences I | 5 |
| *Term II* | | | |
| *[1]BIO | | Science Requirement—Anatomy and Physiology | 4 |
| RTT | 111 | Respiratory Therapy Principles and Practices II | 3 |
| RTT | 116L | Respiratory Therapy Lab II | 1 |
| RTT | 122C | Clinical Experiences II | 5 |
| [1]RTT | 131 | Physics of Respiratory Therapy | 3 |
| *Term III* | | | |
| RTT | 112 | Respiratory Therapy Principles and Practices III | 5 |
| RTT | 117L | Respiratory Therapy Lab III | 1 |
| RTT | 123C | Clinical Experiences III | 5 |
| RTT | 132 | Cardiopulmonary Physiology | 3 |
| *[1]SSCI | | Psychology/Sociology Elective | 3 |
| | | Total | 49 |

**Arts & Sciences. Course descriptions on pages 24–32.*

*[1]The following courses at T-VI are recommended to meet these requirements:*

*Science Requirement—Biology*
*BIO 123 and BIO 124L*

*Mathematics Requirement—Algebra*
*MATH 120*

*Science Requirement—Anatomy and Physiology*
*BIO 136 and BIO 139L*

*Physics Requirement*
*RTT 131 is offered as part of the curriculum. A college physics course may be accepted as transfer credit in lieu of RTT 131.*

*Psychology/Sociology Elective*
*PSY 101 or SOC 101*

*NOTE: Additional college courses may be considered for transfer credit if completed at an accredited college or university with a grade of C or better and equivalent credit hours. Official transcripts must be sent to the T-VI Records Office for consideration of transfer credit eligibility prior to admission to the program.*

## COURSE DESCRIPTIONS

**RTT 110—Respiratory Therapy Principles and Practices I (3 cr)**

(*Prerequisite: admission to the program; corequisites: BIO and MATH requirements, RTT 115L, RTT 121C*) This course covers respiratory therapy as a paramedical profession—the personal qualifications, ethics, expectations and opportunities, medical terminology and charting. It also covers practices and procedures of basic respiratory care including cardiopulmonary clinical assessment, medical gas administration, oxygen therapy, principles of microbiology, infection control and equipment maintenance. Class meets three hours a week for 15 weeks.

**RTT 111—Respiratory Therapy Principles and Practices II (3 cr)**

(*Prerequisites: BIO requirement, RTT 110, RTT 115L, RTT 121C; corequisites: A&P requirement, RTT 116L, RTT 122C, RTT 131*) Additional theory of respiratory therapy procedures is presented with emphasis on breathing treatments, chest physiotherapy and airway management. Basic principles of pharmacology are taught along with the procedure of administering medicated aerosol therapy. The concepts and skills required to perform basic pulmonary function testing are included. Class meets three hours a week for 15 weeks.

**RTT 112—Respiratory Therapy Principles and Practices III (5 cr)**

(*Prerequisites: BIO and A&P requirements, RTT 111, RTT 116L, RTT 122C; corequisites: RTT 117L, RTT 123C, RTT 132*) Concepts and principles of critical care are introduced for patients with life threatening diseases. Emphasis is on learning mechanical ventilatory support for neonatal, pediatric and adult patients who need life support maintenance. Concepts and theories of critical care medicine are introduced. Class meets five hours a week for 15 weeks.

**RTT 115L—Respiratory Therapy Lab I (1 cr)**

(*Corequisites: RTT 110, RTT 121C*) Students practice basic respiratory care procedures learned in RTT 110, using state-of-the-art equipment in the learning laboratory and in simulated patient situations. Class meets three hours a week for 15 weeks.

**RTT 116L—Respiratory Therapy Lab II (1 cr)**

(*Corequisites: RTT 111, RTT 122C, RTT 131*) Students practice additional respiratory care procedures learned in RTT 111. Students use equipment in simulated patient situations. Class meets three hours a week for 15 weeks.

**RTT 117L—Respiratory Therapy Lab III (1 cr)**

(*Corequisites: RTT 112, RTT 123C, RTT 132*) Students practice procedures learned in RTT 112. Advanced respiratory therapy procedures are simulated in lab sessions including extensive work with mechanical ventilation devices. Class meets three hours a week for 15 weeks.

**RTT 121C—Clinical Experiences I* (5 cr)**

(*Corequisites: RTT 110, RTT 115L*) Supervised clinical experiences in the hospital setting allow students to apply knowledge and skills learned in classroom and laboratory sessions. Students apply basic respiratory therapy skills in direct patient contact situations supervised by clinical faculty members. Class meets 16 hours a week for 15 weeks.

**RTT 122C—Clinical Experiences II* (5 cr)**

(*Corequisites: RTT 111, RTT 116L, RTT 131*) Supervised clinical experiences continue in area hospitals and health care facilities. Students also visit patients in the home setting, supervised by qualified personnel working with medical equipment supply companies in Albuquerque. Class meets 16 hours a week for 15 weeks.

**RTT 123C—Clinical Experiences III* (5 cr)**

(*Corequisites: RTT 112, RTT 117L, RTT 132*) Supervised clinical experiences in the hospital setting continue. More emphasis is placed on caring for patients in critical care settings with special concentration on maintaining life support systems. Class meets 16 hours a week for 15 weeks.

**RTT 131—Physics of Respiratory Therapy (3 cr)**

(*Prerequisite: MATH requirement; corequisites: RTT 111, RTT 116L, RTT 122C*) The basic concepts of physics as they relate to physiology of the lungs, gas laws, gas flow and mechanics of the breathing process are covered and applied to the operation of respiratory therapy equipment. Class meets three hours a week for 15 weeks.

**RTT 132—Cardiopulmonary Physiology (3 cr)**

(*Prerequisites: BIO and A&P requirements; corequisites: RTT 112, RTT 117L, RTT 123C*) More advanced knowledge of the physiologic processes of the circulatory, pulmonary, renal and nervous systems and their relationships to each other is emphasized. Basic principles of chemistry are covered as they relate to blood chemistry and blood gas analysis. Class meets three hours a week for 15 weeks.

**During clinical experiences, students meet for formal lectures on the pathophysiology of the cardiopulmonary system. The lectures are given by the respiratory therapy program's medical director, one of his associates, or other physicians in the community. Clinical pathologic disorders which require respiratory therapy diagnosis, treatment and care are covered.*

# Advanced Placement
## (Respiratory Therapy Technician)

There are two ways in which advanced standing can be granted to Respiratory Therapy Technician applicants.

The first is through credit for equivalent coursework completed at an accredited technical-vocational school, college or university. Credit may be given when the T-VI Records Office receives official transcripts showing grades of C or better on equivalent courses.

The second, for people with documented respiratory therapy work experience, is through challenge exams. Persons wanting to challenge Term I coursework may apply at the Health Occupations Department during the month of July. Challenge exams will be given in August. A written exam is used to challenge theory courses. A competency test using respiratory therapy equipment under simulated conditions in the learning laboratory is used to challenge lab and clinical coursework.

Applicants also must meet all prerequisites for

admission into the program and have acceptable composite, math and scientific reasoning ACT scores.

Those with previous respiratory therapy work experience under medical supervision must document at least 200 hours to challenge Term I coursework and another 250 hours to challenge Term II coursework. Those taking challenge exams must score at least 71% on each component to receive Term I credit. Challenge exams may be taken only once. Persons given challenge credit for Term I will be admitted in January for Term II on a space-available basis.

Persons successfully completing all Term I requirements may apply to challenge Term II coursework. Term II challenge applications will be accepted during November and tests will be scheduled in December.

Portions of Term III may be challenged depending on prior clinical work experiences which must total at least 700 hours under medical supervision. Dates for challenging Term III coursework will be scheduled on an individual basis.

Challenge and transfer students accepted must submit transcripts of prior education and proof of high school graduation or GED. They must pay required T-VI fees, purchase school uniforms and other needed equipment, and have a physical examination before admission.

# NURSING PROGRAMS

## Nursing Assistant

**Certificate Program**
**1 Term, Main Campus**

This program trains students in nursing skills required for the care and comfort of the sick in hospitals, outpatient clinics, nursing homes, public health agencies, private medical offices and the home. Persons successfully completing the program with grades of C or better in all coursework receive certificates as nursing assistants.

To be admitted, applicants must pass the admissions math test and read at the seventh grade level. Good communication skills and the ability to care for others are necessary for this program. Applicants must have a New Mexico driver's license and a car if students will visit patients' homes. City buses are not adequate for meeting these transportation needs.

The 15-week program includes 308 instructional hours. Nine weeks are spent in the classroom and laboratory, followed by six weeks of extensive supervised clinical training in local hospitals, nursing homes, outpatient clinics and home health care agencies. A student attends an average of 21 hours per week throughout the program.

A $30 equipment fee covers the cost of the required uniform top, stethoscope, health test, parking fees and a transfer belt. A watch with a second hand, uniform slacks, shirt and shoes are required but not covered by the fee.

### NURSING ASSISTANT PROGRAM

| *Course Requirements* | | | *Cr Hrs* |
|---|---|---|---|
| NA | 101 | Nursing Assistant Theory | 4 |
| NA | 110L | Nursing Assistant Lab | 2 |
| NA | 121C | Nursing Assistant Clinical Experiences | 6 |
| NA | 131 | Health Communications | 3 |
| NA | 141 | Mathematics | 1 |
| | | Total | 16 |

## COURSE DESCRIPTIONS

**NA 101—Nursing Assistant Theory (4 cr)**
*(Prerequisite: Admission to the Nursing Assistant Program; corequisites: NA 110L, NA 131)* During the first nine weeks, students attend classes covering basic nursing skills used in health care agencies and homes. Also covered are home management, community resources, purchase and preparation of foods. Class meets five hours a week for five weeks then 15 hours a week for four weeks.

**NA 110L—Nursing Assistant Lab (2 cr)**
*(Corequisites: NA 101, NA 131)* Students practice basic nursing skills in the laboratory. Class meets five hours a week for five weeks.

**NA 121C—Nursing Assistant Clinical Experiences (6 cr)**
*(Prerequisites: Successful completion of NA 101, NA 110L, NA 131, and NA 141)* Four of the last six weeks of the program include supervised practice of nursing skills in hospitals, elder care centers or out-patient clinics throughout the city. The last two weeks are spent in a supervised preceptorship where students learn new skills on an individual basis in a job-like setting. Class meets 21 hours a week for six weeks.

**NA 131—Health Communications (3 cr)**
*(Corequisites: NA 101, NA 110L)* This course includes introductions to medical terminology, anatomy and physiology, and nutrition. The basic structure and normal function of the body systems and some of the health problems which can occur in those systems are covered. Class meets five hours a week for nine weeks.

**NA 141—Mathematics (1 cr)**
*(Corequisites: NA 101, NA 110L, NA 131)* Basic math is reviewed in this course with practice working selected problems. Class meets five hours a week for five weeks.

# Nursing Home Attendant

**Certificate Program**
**10 Weeks, Main Campus**

This 80-hour, ten-week course is designed to teach basic nursing skills to individuals who wish to work or are working in a nursing home as a Nursing Home Attendant. It has been developed for people who would like to become state certified.

Theory classes include geriatrics, simple anatomy and physiology, rehabilitation and residents' rights. Lab experiences focus on personal care, vital signs and mobility skills.

The course is offered each year in the second week of the summer term (May). Interested persons should contact the Health Occupations Department for more information. Twenty-four persons are admitted to each course on a first come, first served basis.

Participants pay the T-VI registration fee and the cost of the required textbook.

## NURSING HOME ATTENDANT PROGRAM

| *Course Requirements* | | | *Cr Hrs* |
|---|---|---|---|
| NANH | 101L | Nursing Home Attendant Theory/ Lab | 5 |

## COURSE DESCRIPTION

**NANH 101L—Nursing Home Attendant Theory/Lab (5 cr)**
Basic nursing skills to work in a nursing home or rehabilitation center giving personal and restorative care are reviewed. Classes are held Monday and Thursday afternoons.

# Home Health Attendant

**Certificate Program**
**10 Weeks, Main Campus**

This 80-hour, ten-week course is designed to teach basic nursing skills to individuals who wish to work or are working in people's homes as a Home Health Attendant. The training is for people who are interested in caring for the elderly, the sick or the dying in their homes. People already working in the field but who are not certified as Home Health Attendants are encouraged to take this course.

Theory classes include geriatrics, simple anatomy and physiology and housekeeping chores. Lab experiences focus on personal care, vital signs and mobility skills.

Classes will begin the second week of the winter term (January) and the second week of the fall term (September). Interested persons should contact the Health Occupations Department for more information. Twenty-four persons are admitted to each course on a first come, first served basis.

Participants pay the T-VI registration fee and the cost of the required textbook.

## HOME HEALTH ATTENDANT PROGRAM

| *Course Requirements* | | | *Cr Hrs* |
|---|---|---|---|
| NAHA | 101L | Home Health Attendant Theory/Lab | 5 |

## COURSE DESCRIPTION

**NAHA 101L—Home Health Attendant Theory/Lab (5 cr)**
Basic nursing skills to work in the home giving personal care and doing light housekeeping are reviewed. Classes are held Monday and Thursday afternoons.

# Practical Nurse

**Certificate Program**
**3 Terms, Main Campus**

This program prepares students to care for patients in a variety of health care facilities under the supervision of registered nurses and physicians. The T-VI/Presbyterian Hospital School of Practical Nursing is accredited by the National League for Nursing and approved by the New Mexico State Board of Nursing (NMSBN). This program is *not* a prerequisite for the Associate Degree Nursing program.

Graduates of this program are eligible to take the licensing examination for practical nurses administered by the NMSBN. Following licensure, LPNs may find employment in long-term care facilities, hospitals, physicians' offices and other health care agencies.

Orientation sessions for T-VI's nursing programs are scheduled regularly. These sessions review levels of nursing, the admission process and program requirements. Individuals interested in nursing are strongly encouraged to attend one of these sessions. Applications are not currently being accepted for the practical nurse program because of the large number of current applicants. Contact the Health Occupations Department for the dates and times of the orientation sessions and to find out when applications will be reopened. In addition, it is recommended strongly that applicants have a personal interview with the Health Occupations counselor or nursing program director.

To be eligible for selection for the Practical Nurse program, an applicant must:

- Provide proof of a high school diploma or GED.
- Earn satisfactory American College Test (ACT) scores: math (13), composite (18).
- Score 85% on the Health Occupations basic math entrance test. Applicants may retest once. Applicants with two unsuccessful attempts on the test must satisfactorily complete health math in the Developmental Studies Department before they can be accepted into the program. Students will be retested on basic math early in the first nursing course.

Students are responsible for meeting the admission requirements and notifying the department counselor when completion occurs. Applicants are admitted to the program on the basis of their application dates after all admission requirements are fulfilled and verified. After admission to the program, students must submit:

- Completed physical examination and health forms with evidence of current immunizations before beginning clinical courses.
- Evidence of current certification in cardiopulmonary resuscitation for health professionals before beginning clinical courses. CPR certification must be kept current throughout the program.

The Practical Nurse program includes Arts & Sciences courses for which college credit is awarded. Those courses must be taken prior to, or as scheduled in, the curriculum plan. Students are encouraged to take some Arts & Sciences courses prior to entering the program. The anatomy and physiology course must be completed within five years from the date of application. A minimum grade of C must be earned in all courses (nursing and Arts & Sciences) to continue in the program and graduate.

Students must attend classes, observations and clinical experiences as scheduled, and arrange for their own transportation to the agencies and hospitals. There may be some required evening clinical hours as well as daytime hours.

There is an $80 personal equipment fee for required uniforms, stethoscope, scissors, parking fees,

transfer belts and identification tags. Students are responsible for the expenses of the physical examination, a watch with a second hand, uniform shoes, cap, graduation pin, textbooks and licensing exam fees.

## PRACTICAL NURSE PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| *[1]BIO | 136 | Human Anatomy and Physiology | 3 |
| *[1]BIO | 139L | Human Anatomy and Physiology Lab | 1 |
| [2]NURS | 110 | Fundamentals of Nursing/Theory | 4 |
| [2]NURS | 121C | Fundamentals of Nursing/Clinical | 3 |
| *NUTR | 125 | Nutrition | 3 |
| *[3]PSY | 102 | General Psychology II | 3 |
| *Term II* | | | |
| *COMM | 221 | Interpersonal Communication | 3 |
| [2]NURS | 111 | Medical-Surgical Nursing/Theory | 4 |
| [2]NURS | 122C | Medical-Surgical Nursing/Clinical | 3 |
| *PHIL | 245 | Biomedical Ethics | 3 |
| [4]PN | 131 | Pharmacology | 3 |
| *Term III* | | | |
| PN | 112 | Maternity-Pediatric-Medical-Surgical Theory | 9 |
| *PN | 123C | Maternity-Pediatric-Medical-Surgical Clinical | 7 |
| | | Total | 49 |

*Arts & Sciences. Course descriptions on pages 24–32.
[1]*BIO 237/247L (if taken before September 1989) or BIO 237/247L and BIO 238/248L (if taken after August 1989) may be substituted.*
[2]*Nursing course descriptions on pages 66–67.*
[3]*PSY 220 may be substituted.*
[4]*NURS 231 may be substituted.*
Note: Students planning to go on for the Associate Degree in Nursing are encouraged to take BIO 237/247L and BIO 238/248L.

## COURSE DESCRIPTIONS

**NURS 110—Fundamentals of Nursing Theory**
(*Corequisites: Admission to the course, BIO 136/139L, NUTR 125, PSY 102, NURS 121C*) Description on page 66.

**NURS 121C—Fundamentals of Nursing Clinical**
(*Corequisite: NURS 110*) Description on page 66.

**NURS 111—Medical-Surgical Nursing Theory**
(*Prerequisite: NURS 110/121C, BIO 136/139L, NUTR 125, PSY 102; corequisite: COMM 221, PHIL 245, NURS 122C, PN 131*) Description on page 66.

**NURS 122C—Medical Surgical Nursing Clinical**
(*Prerequisite: same as NURS 111; corequisite: same as NURS 121C) Description on page 66.*

**PN 112—Maternity-Pediatric-Medical-Surgical Theory (9 cr)**
(*Prerequisites: NURS 111/122C, PN 131; corequisite: PN 123C*) The developmental self-care needs of clients of all ages, emphasizing pediatrics and the child-bearing family, are correlated with the nursing process. The legal/ethical role of the practical nurse is presented.

**PN 123C—Maternity-Pediatric-Medical-Surgical Clinical (7 cr)**
(*Prerequisites: NURS 111/122C; corequisite: PN 112*) Clinical experiences in maternity, pediatric and medical-surgical areas support the theory portion of the course.

**PN 131—Pharmacology (3 cr)**
(*Prerequisites: BIO 136/139L, NURS 110/121C; corequisites: NURS 111/122C*) This course covers effects of commonly used drugs on various body systems. Dosages, application, side effects and/or toxicity, laboratory tests performed to monitor actions, and effects of given drugs are discussed. Nursing implications and responsibilities are integrated.

### Presbyterian Hospital School of Practical Nursing

The Presbyterian Hospital School of Practical Nursing was started in 1956 at Presbyterian Hospital. In 1965, T-VI assumed administrative responsibility for the school. Presbyterian Hospital Center supports the school through financial contributions and by providing clinical facilities for patient care experiences. The Presbyterian Hospital School of Practical Nursing in 1972 became the first practical nursing program in New Mexico to be accredited by the National League for Nursing. The program was reaccredited in 1989. It is also included in T-VI's accreditation from the Commission on Higher Education of North Central Association of Colleges and Schools.

# Advanced Placement
## (Practical Nurse)

There are two ways in which advanced standing can be given to Practical Nurse applicants—credit granted for equivalent coursework and/or successful completion of a challenge exam.

The Arts & Sciences courses required in the Practical Nurse program must be transferred, taken or challenged through the Arts & Sciences Department. These courses include: BIO 136/139L—Human Anatomy and Physiology for Non-Majors, PSY 102—General Psychology II, PHIL 245M—Biomedical Ethics, COMM 221—Interpersonal Communication, and NUTR 125—Nutrition.

The nursing courses must be transferred, taken, or challenged through the Health Occupations Department. Courses that may be challenged include: NURS 110/121C—Fundamentals of Nursing Theory/Clinical, NURS 111/122C and Medical-Surgical Nursing Theory/Clinical. In addition PN 131, Pharmacology, must be taken.

**TRANSFER APPLICATION:** T-VI will grant credit for equivalent coursework completed at an accredited technical-vocational school or college when official transcripts show grades of C or better on equivalent courses. Students desiring to transfer to T-VI's Practical Nurse program should contact the program director.

**CHALLENGE APPLICATION:** Advanced placement by challenge exam is offered to students who meet one of the following criteria:

- Completion of a formal course of study in a health/nursing-related field within a post-secondary educational institution (e.g.; military corpsperson, physician's assistant).
- Performance of basic nursing skills during employment in a health-related setting within the last three years.

Applicants for challenge must submit an application to the Practical Nurse program and meet the program admission requirements. In addition, the applicant must meet the Arts & Sciences course requirements scheduled in the curriculum prior to the desired point of entry. The challenge process includes theory and laboratory exams.

The challenge exam for NURS 110/121C is a comprehensive examination of the theory and laboratory content. The challenge exam for NURS 111/122C is the Nursing Mobility Profile I—Part I published by the National League for Nursing and a laboratory examination.

Challenge exams for the nursing courses are offered three times a year in January, May and September. For specific information, contact the Health Occupations Department.

Applicants who successfully challenge NURS 110/121C and NURS 111/122C must complete PN 131 and an orientation to the program before entering PN 112/123C.

Successful challenge students are admitted to the program on a space-available basis. Challenge students who meet the program objectives are considered full graduates and are eligible to take the licensing examination administered by the New Mexico State Board of Nursing.

# Nursing

**Associate in Science Degree**
**4 Terms, Main Campus**

This program prepares technical nurses who provide nursing care to individuals or groups admitted to health care agencies. The clients have common, well-defined health problems. Graduates work in structured health care settings where they provide and manage client care, teach and promote communication while participating as members of the nursing profession. The Practical Nurse program is *not* a prerequisite for this program.

Orientation sessions for T-VI's nursing programs are scheduled regularly. These sessions review levels of nursing, the admission process and program requirements. Individuals interested in nursing are strongly encouraged to attend one of these sessions. Applications are not currently being accepted for the Associate Degree Nursing program because of the large number of applicants. Contact the Health Occupations Department for the dates and times of the orientation sessions and to find out when applications will be reopened. In addition, it is recommended strongly that applicants have a personal interview with the Health Occupations counselor or the nursing program director.

The associate degree in nursing program is accredited by the National League for Nursing and approved by the New Mexico State Board of Nursing (NMSBN). Graduates are eligible to take the licensing examination for nurses administered by the NMSBN.

In addition to the ACT scores required for math and English listed on page 12, Associate in Science Degree in Nursing applicants must have satisfactory ACT scores of 19 in scientific reasoning and 18 in reading, and must meet the following general requirements for admission:

- Submit transcripts of previous education including high school, vocational school or college. College transcripts must be official.
- Provide proof of meeting the chemistry/biology course requirements. These may be met by:
  —Completion of BIO 123/124L—Biology for Health Sciences, and Chemistry 111/112L—Introduction to Chemistry. This approach is recommended strongly for those students who plan to further their education in nursing.
  —Completion of BIO 115—Biophysical Science. This approach is recommended *only* for those students who *do not* plan to further their nursing education beyond the associate degree.
  —A year of high school chemistry and a year of advanced high school biology. Written approval from the Arts & Sciences Department is required.
- Score 85% on the Health Occupations basic math entrance test. Applicants may retest once. Applicants with two unsuccessful attempts on the test must satisfactorily complete health math in the Developmental Studies Department be-

fore they can be accepted into the nursing program. Students will be re-tested on basic math skills early in the first nursing course.

Students are responsible for meeting the admission requirements and for notifying the department counselor when completed. Once all admission requirements are fulfilled and verified, applicants are admitted to the program on the basis of their application dates. After admission to the program students must submit:

- Completed physical examination and health forms with evidence of current immunizations before beginning clinical courses.
- Evidence of current certification in cardiopulmonary resuscitation before beginning clinical courses. CPR certification must be kept current throughout the program.

Arts & Sciences courses must be taken prior to, or as scheduled in, the curriculum plan. Required biology courses must have been taken within five years of the date of application to the Nursing program. Minimal substitute placement of Arts & Sciences courses may be allowed. Please check with the Health Occupations counselor before substituting.

Students must earn a minimum grade of C in all courses to advance to the next term and graduate. Students must attend classes, observation and clinical experiences as scheduled, and arrange for their own transportation to the agencies and hospitals. There may be some required evening clinical hours as well as daytime hours.

There are equipment fees of $80 the first term for required uniforms, stethoscope, scissors, transfer belts, parking fees and identification tags. There is a $10 fee the third term for equipment and parking fees. Students are responsible for the expenses of the physical examination, a watch with a second hand, uniform shoes, cap, graduation pin and licensing exam fees.

## ASSOCIATE DEGREE IN NURSING PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| *BIO | 237 | Anatomy and Physiology I | 3 |
| *BIO | 247L | Anatomy and Physiology I Lab | 1 |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| NURS | 110 | Fundamentals of Nursing Theory | 4 |
| NURS | 121C | Fundamentals of Nursing Clinical | 3 |
| *PSY | 101 | General Psychology I | 3 |
| or | | | |
| *PSY | 102 | General Psychology II | 3 |
| *Term II* | | | |
| *BIO | 238 | Anatomy and Physiology II | 3 |
| *BIO | 248L | Anatomy and Physiology II Lab | 1 |
| NURS | 111 | Medical-Surgical Nursing Theory | 4 |
| NURS | 122C | Medical-Surgical Nursing Clinical | 3 |
| *NUTR | 125 | Nutrition | 3 |
| *PSY | 220 | Developmental Psychology | 3 |
| *Term III* | | | |
| *BIO | 239 | Microbiology for Health Sciences | 3 |
| *BIO | 239L | Microbiology for Health Sciences Lab | 1 |
| NURS | 210 | Maternity Nursing Theory | 3 |
| NURS | 211 | Psychiatric Nursing Theory | 3 |
| NURS | 221C | Maternity Nursing Clinical | 2 |
| NURS | 222C | Psychiatric Nursing Clinical | 2 |
| NURS | 231 | Pharmacology in Nursing | 3 |
| *Term IV* | | | |
| NURS | 212 | Pediatric-Advanced Medical Surgical Nursing Theory | 5 |
| NURS | 223C | Pediatric-Advanced Medical Surgical Nursing Clinical | 5 |
| NURS | 241 | Nursing Seminar | 1 |
| *PHIL | 245M | Biomedical Ethics | 3 |
| | | *Elective | 3 |
| | | Total | 68 |

**Arts & Sciences. Course descriptions on pages 24–32.*
**May not be a biology course. List of recommended courses available from department counselor.*

## COURSE DESCRIPTIONS

**NURS 110—Fundamentals of Nursing Theory (4 cr)**
*(Prerequisites or corequisites: Admission to the course, BIO 237/247L, ENG 101, PSY 101 or PSY 102; corequisite: NURS 121C)* The conceptual framework of the curriculum and nursing process is introduced. The concepts of the individual, society, health and nursing are developed within the nursing theory of Orem's self-care deficit model. Nursing skills are developed to meet the universal and developmental needs of individuals across cultures, with topics including communication, teaching-learning, health care delivery systems, legal/ethical role of nurses, introduction to pharmacology and medication administration.

**NURS 111—Medical-Surgical Nursing Theory (4 cr)**
*(Prerequisites: BIO 237/247L, NURS 110/121C, ENG 101, PSY 101 or PSY 102; corequisites: NURS 122C, BIO 238/248L, NUTR 125, PSY 220)* This course offers a theoretical study of the nursing process for adult clients. Nursing process including assessment, planning, implementation and evaluation is used to meet self-care deficits of clients unable to meet their own needs due to common illnesses or injuries. The role of the nurse in promoting developmental self-care requirements in adult clients with health problems is presented.

**NURS 121C—Fundamentals of Nursing Clinical (3 cr)**
*(Corequisite: NURS 110)* Laboratory and clinical experiences allow the student to carry out activities required to meet universal, developmental, and health problem self-care requirements.

**NURS 122C—Medical-Surgical Nursing Clinical (3 cr)**
*(Corequisite: NURS 111)* Students have practicum with adult clients in medical-surgical acute-care facilities and with elderly adult clients in long-term care facilities and a variety of well/elderly community agencies. The students apply the theoretical content covered in NURS 111 to the clinical area.

**NURS 210—Maternity Nursing Theory (3 cr)**
*(Prerequisites: BIO 238/248L, NURS 111/122C, ENG 101, NUTR 125, PSY 220; corequisites: NURS 211/222C, NURS 221C)* The study of the childbearing family with universal, developmental and health deviation self-care requirements is presented. Students are able to integrate the nursing process, client education, nursing care systems and assessment skills.

**NURS 211—Psychiatric Nursing Theory (3 cr)**
*(Prerequisites: BIO 238/248L, NURS 111/122C, ENG 101, NUTR 125, PSY 220; corequisites: NURS 210/221C, NURS 222C)* The study of self-care deficits in clients with psychiatric health deviations is presented. The concept of therapeutic communication is developed as a framework for using the nursing process to provide care for clients. The course also presents concepts of various psychotherapeutic approaches used in psychiatric settings.

**NURS 212—Pediatric-Advanced Medical Surgical Nursing Theory (5 cr)**
*(Prerequisites: NURS 210/221C, NURS 211/222C; pre- or corequisites: BIO 239/239L, NURS 231; corequisite: NURS 241)* This course presents a theoretical study of the nursing process using nursing systems as defined by Orem to care for children and adults. The nursing process is used to meet health problems of children and adults unable to meet their own needs due to developmental factors or more complex health conditions. The roles of the professional nurse in working with families are presented.

**NURS 221C—Maternity Nursing Clinical (2 cr)**
*(Corequisite: NURS 210)* This course allows the clinical application of theoretical concepts presented in NURS 210.

**NURS 222C—Psychiatric Nursing Clinical (2 cr)**
*(Corequisite: NURS 211)* Clinical experiences provide the opportunity for students to apply theoretical concepts through establishing therapeutic relationships, participating in groups and interdisciplinary meetings, and visiting community mental health agencies.

**NURS 223C—Pediatric-Advanced Medical Surgical Nursing Clinical (5 cr)**
*(Corequisite: NURS 212)* A clinical practicum provides application of theoretical concepts in the care of children and families in acute-care facilities and in adult clients with more complex health conditions as studied in NURS 212.

**NURS 231—Pharmacology in Nursing (3 cr)**
*(Prerequisites: BIO 238/248L, NURS 111/122C)* This course presents the concepts necessary for judgment in the use of chemical agents and the theoretical base required to administer medications. Information presented includes the role of the nurse in assisting the client with self-administration of medications, history of pharmacology, drugs and their therapeutic use, adverse reactions, precautions, contraindications, food and drug interactions, psychosocial aspects of drug use and drug abuse.

**NURS 241—Nursing Seminar (1 cr)**
*(Prerequisites: NURS 210/221C, NURS 211/222C; corequisites: NURS 212/223C)* Students discuss the role of the registered nurse in relation to trends, legal/ethical issues, professional relationships and health care delivery. The course is designed to develop critical thinking in legal/ethical issues in professional nursing.

# Advanced Placement
## (Associate in Science Degree in Nursing)

To apply for advanced standing in the Associate Degree Nursing program, individuals must meet the admission requirements on page 65.

Orientation sessions for T-VI's nursing programs are scheduled regularly. These sessions review levels of nursing, the admission process and program requirements. Individuals interested in nursing are strongly encouraged to attend one of these sessions. Contact the Health Occupations Department for the dates and times of the sessions. In addition, it is recommended strongly that applicants have a personal interview with the Health Occupations counselor or the nursing program director.

Advanced placement may be granted in three ways:

1. **Challenge**—Challenge exam for students who meet one of the following criteria:
   - Completion of a formal course of study in a health/nursing related field within a post-secondary educational institution (e.g.; military corpsperson, physician's assistant).
   - Performance of basic nursing skills during

employment in a health-related setting within the last three years.

Applicants for challenge must submit an application to the associate degree program and meet the program admission requirements. In addition, the applicant must meet the Arts & Sciences course requirements scheduled in the curriculum prior to the desired point of entry. The challenge process includes theory and laboratory exams.

The challenge exam for NURS 110/121C is a comprehensive examination of the theory and laboratory content. The challenge exam for NURS 111/122C is the Nursing Mobility Profile I—Part I published by the National League for Nursing and a laboratory examination.

Challenge exams for the nursing courses are offered three times a year in January, May and September. For specific information, contact the Health Occupations Department.

Applicants who successfully challenge NURS 110/121C and NURS 111/122C must complete NURS 201 before entering NURS 210/221C and NURS 211/223C.

Successful challenge students are admitted to the program on a space-available basis. Challenge students who meet the program objectives are considered full graduates and are eligible to take the licensing examination administered by the New Mexico State Board of Nursing.

2. **Transfer**—Transfer from an approved associate degree or baccalaureate nursing program with equivalent courses. To apply for transfer, the individual must submit evidence of completion of equivalent courses with minimum grades of C. In addition, students transferring into third or fourth term are required to take NURS 201—Nursing Concepts for LPNs and Transfer Students. Transfer students are required to enroll a minimum of one term and complete 15 credit hours.
3. **LPN Mobility**—Admission of licensed practical nurses. The associate degree program is designed to admit qualified licensed practical nurses into the second year. In addition to meeting the ACT requirements for admission as listed on page 12, applicants must meet the following requirements:
   - Provide proof of meeting the chemistry/biology course requirements. These may be met by:
     —Completion of BIO 123/124L—Biology for Health Sciences, and CHEM 111/112L—Introduction to Chemistry. This approach is recommended strongly for those students who plan to further their education in nursing.
     —Completion of BIO 115L—Biophysical Sciences. This approach is recommended *only* for those students who *do not* plan to further their nursing education beyond the associate degree.
     —A year of high school chemistry and a year of advanced high school biology. Written approval from the Arts & Sciences Department is required.
   - Submit transcripts of previous education including high school, vocational school or college. College transcripts must be official.
   - Provide proof of current LPN license.
   - Provide proof of completion or challenge of the following courses with a minimum grade of C:
     Required biology courses must be taken within five years from the application date.
     —BIO 237/247L—Anatomy and Physiology I
     —BIO 238/248L—Anatomy and Physiology II
   - Complete PSY 101 or 102—General Psychology
   - Complete PSY 220—Developmental Psychology.
   - Complete or challenge NUTR 125—Nutrition.
   - Complete NURS 201 with a minimum grade of C.
   - ENG 101—Writing with Readings in Exposition
   - Take the Nursing Mobility Profile I examination if an approved postsecondary practical nurse program has not been completed. The exam also may be required if the applicant has not been active in nursing during the last five years.

Students are responsible for meeting the admission requirements and notifying the department when completed. After verification that admission requirements have been fulfilled, students are admitted to the program on the basis of their application date. After admission to the program, students must submit:

- Completed physical examination and health forms with evidence of current immunizations before beginning clinical courses.
- Evidence of current certification in cardiopulmonary resuscitation before beginning clinical courses. CPR certification must be kept current throughout the program.

Applicants for advanced standing may complete additional courses required for the associate degree

in nursing before beginning the second year nursing courses. This enables them to complete the program on a part-time basis.

Students pay $10 for equipment and parking. Students also are responsible for the expenses of physical exams, uniforms, transfer belts, shoes, watch with a second hand, stethoscope, bandage scissors, graduation pin and licensing fees.

### COURSE DESCRIPTION

**NURS 201—Nursing Concepts for LPNs and Transfer Students (2 cr)**
*(Prerequisites: BIO 237/247L, PSY 101 or 102, ENG 101)* This course is an introduction to the conceptual framework of the nursing program and an in-depth study of the nursing process. The process of role change from LPN to RN is included. This course is required for LPNs and transfer applicants who seek advanced placement in the associate degree program.

# Perioperative Registered Nurse Specialist

**Certificate Program**
**1 Term, Main Campus**

This 15-week course provides registered nurses with the skills and knowledge to work in hospital operating rooms or free-standing day surgical units. The curriculum offers an introduction to the history, scope and role of the perioperative nurse; the concept of team management and collaboration; the surgical environment; principles of asepsis, sterilization and safety; use and care of basic instruments and equipment; standards of practice and legal, moral and ethical issues; the nursing process; continuity of care; surgical pharmacological agents; wound healing; and management skills. Students have an opportunity to apply theory to practice in hospital operating rooms.

Applicants must be registered nurses with six months' clinical nursing experience within the last two years and be currently certified in cardiopulmonary resuscitation. Applicants also must submit proof of current immunizations, a physical examination within the last year, and a current New Mexico nursing license.

There is a $25 supply fee and students are required to purchase their own textbooks.

Students must make grades of C or better in all coursework to receive a certificate.

This program will be offered in fall term only.

### PERIOPERATIVE REGISTERED NURSE SPECIALIST PROGRAM

| *Course Requirements* | | | *Cr Hrs* |
|---|---|---|---|
| PRNS | 255L | Perioperative Registered Nurse Specialist Theory/Lab..... | 8 |
| PRNS | 265C | Perioperative Registered Nurse Specialist Clinical Experience .... | 6 |
| | | Total..... | 14 |

### COURSE DESCRIPTIONS

**PRNS 255L—Perioperative Registered Nurse Specialist Theory/Lab (8 cr)**
*(Prerequisite: Admission to the program; corequisite: PRNS 265C)* This course content is divided into five units—history and philosophy of perioperative nursing, the surgical environment, perioperative care, intraoperative care and postoperative care. Laboratory experiences in a mock operating room allow practice of skills. Class meets 25 hours a week with varying theory and clinical hours for 15 weeks.

**PRNS 265C—Perioperative Registered Nurse Specialist Clinical Experience (6 cr)**
*(Corequisite: PRNS 255L)* Students apply new and previously learned concepts to perioperative nursing in hospital operating rooms.

# Registered Nurse Refresher

**Certificate Program**
**6 Weeks, Main Campus**

This six-week refresher course meets the requirements of the Nursing Practice Act of New Mexico for registered nurses who have not worked in nursing for the past five years. Theory classes and clin-

ical experiences focus on medical and surgical trends, pharmacology, cardiac care, maternity and other current subjects. Students must receive a grade of C or better in both courses to complete the program.

The refresher course will be offered once a year starting in October. Applicants are admitted on a first-come, first-served basis and enrollment is limited to 32 persons. Interested persons should contact the Health Occupations Department for more information.

Participants pay a $15 registration fee, $15 supply fee, and the cost of required textbooks. White uniform and shoes, a stethoscope and transfer belt are required for clinical practice. There are additional fees payable to the New Mexico State Board of Nursing for licensure endorsement and reinstatement if a nursing license has expired.

*This program does not qualify students for Veterans Administration benefits or other financial aid.*

### REGISTERED NURSE REFRESHER PROGRAM

| *Course Requirements* | | | *Cr Hrs* |
|---|---|---|---|
| RNR | 255L | Refresher Theory/Lab | 6 |
| RNR | 265C | Refresher Clinical Experience | 2 |
| | | Total | 8 |

### COURSE DESCRIPTIONS

**RNR 255L—Refresher Theory/Lab (6 cr)**
(*Prerequisite: Admission to the program; corequisite: RNR 265C*) Trends in medical-surgical, geriatric, maternal-child and psychiatric nursing, pharmacology, and fluid and electrolytes are covered in the course. Classes are Monday through Wednesday, five hours a day. The first week CPR is taught on Thursday.

**RNR 265C—Refresher Clinical Experience (2 cr)**
(*Corequisite: RNR 255L*) Students have supervised medical and surgical clinical experiences including patient care, medication administration, IVs and uses of current equipment. Clinical experiences are eight hour days on Thursdays and Fridays except the first week of classes.

# Licensed Practical Nurse Refresher

**Certificate Program**
**6 Weeks, Main Campus**

This 180 hour, six-week course is designed to renew skills of inactive licensed practical nurses, introduce new trends and procedures, and provide clinical experiences. It meets the New Mexico State Board of Nursing requirements of license renewal for practical nurses who have not worked in nursing for the past five years. Theory classes and clinical experiences focus on medical and surgical nursing care including pharmacology. Students must receive a grade of C or better in both courses to complete the program.

The refresher course will be offered once a year starting in February. Interested persons should contact the Health Occupations Department for more information. Thirty-two people are admitted to each course on a first come, first served basis.

Participants pay a $15 registration fee, $15 supply fee, and the cost of required textbooks. White uniform and shoes, a stethoscope and transfer belt are required for clinical practice. There are additional fees payable to the New Mexico State Board of Nursing for licensure endorsement and reinstatement if a nursing license has expired.

*This program does not qualify students for Veterans Administration benefits or other financial aid.*

### LICENSED PRACTICAL NURSE REFRESHER PROGRAM

| *Course Requirements* | | | *Cr Hrs* |
|---|---|---|---|
| LPNR | 155L | Refresher Theory/Lab | 6 |
| LPNR | 165C | Refresher Clinical Experience | 2 |
| | | Total | 8 |

### COURSE DESCRIPTIONS

**LPNR 155L—Refresher Theory/Lab (6 cr)**
(*Prerequisite: Admission to the course; corequisite: LPNR 165C*) Medical and surgical trends, new procedures and techniques, and pharmacology are covered in the theory portion of the program. Classes are Monday through Wednesday, five hours a day. The first week CPR is taught on Thursday.

**LPNR 165C—Refresher Clinical Experience (2 cr)**
(*Corequisite: LPNR 155L*) Medical and surgical clinical experiences include administration of medications. Clinical experiences are eight hour days Thursdays and Fridays except the first week of classes.

# TECHNOLOGIES DEPARTMENT

Programs in the Technologies Department are among the longest at the Institute. All programs are four terms (16 months) or five terms (20 months). Technologies programs also have the highest math skill entry requirements. All first term math courses have a prerequisite of Math 100 or equivalent.

Students in four programs—Electronics Technology, Instrumentation and Control Technology, Laser Electro-Optic Technology and Architectural/Engineering Drafting Technology—can choose to complete either an associate in applied science degree or a certificate.

Because the Technologies programs are in high demand, interested persons should apply as early as possible.

Electronics Engineering Technology and the third and fourth terms of Laser Electro-Optic Technology are offered at the Montoya Campus only. The Data Processing Technology program is offered at both campuses. Other Technologies programs are offered only at the Main Campus.

There are beginning groups each term in all Technologies majors except Laser Electro-Optics, which starts new groups every other term, and Civil and Surveying Technology and Design Drafting Engineering Technology, which do not begin groups in the summer term. Courses in the Continuing Education Division with matching course numbers will transfer to the Technologies Department.

## SUPPORT COURSES

The optional support courses available to Technologies students are listed below. At least 12 students must sign up for an optional support course before it can be offered, and each student must meet the required prerequisites. Common support courses are:

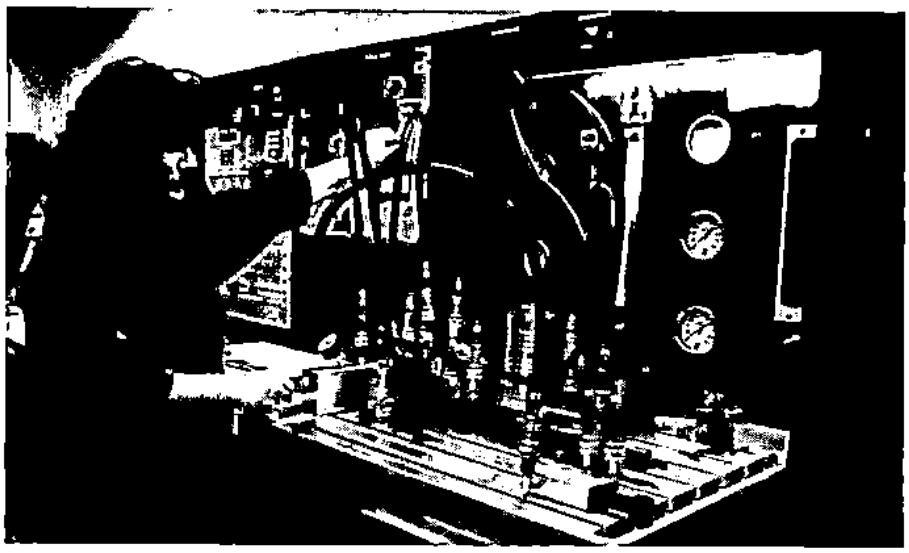
| *Course Title* | | | *Cr Hrs* |
|---|---|---|---|
| BA | 111 | Communications (7½ weeks) | 2 |
| BA | 131 | Human Relations (7½ weeks) | 2 |
| BA | 255 | Desktop Publishing | 3 |
| BA | 256 | Employment Procedures and Techniques (7½ weeks) | 2 |
| DP | 173L | Pascal Programming | 3 |
| DP | 174L | BASIC Language Programming | 3 |
| DP | 175L | C Language Programming | 3 |
| DP | 176L | Introduction to Microcomputers | 3 |

## COURSE DESCRIPTIONS

**BA 111—Communications (7½ weeks) (2 cr)**
(*Offered for Trades and Technologies students only*) The primary focus of this course is to develop effective communications skills. Course content includes fundamentals of grammar, punctuation and word usage. Effective expression in written communications is stressed.

**BA 131—Human Relations (7½ weeks) (2 cr)**
This course deals with employee attitudes toward themselves and others. The importance of interpersonal relationships and the work ethic is stressed.

**BA 255—Desktop Publishing (3 cr)**
(*Prerequisites: BA 150 or SS 132 and SS 133 or academic advisor's permission*) The students will be given hands-on experience in desktop publishing. The course covers the major elements of the publishing process—editing, typesetting, design, graphic production and page makeup using a microcomputer. This course meets five hours a week.



**BA 256—Employment Procedures and Techniques (7½ weeks) (2 cr)**
This course provides the requisite skills for success in obtaining employment. Specific topics include preparation of cover letters and resumés, interviewing skills, telephone use in the job search, test-taking techniques and projecting a positive attitude and self-confidence. This course meets five hours a week.

**DP 172L—FORTRAN Programming (3 cr)**
This is an introductory course in FORTRAN IV computer programming. This course has three hours of lecture and two hours of laboratory per week.

**DP 173L—Pascal Programming (3 cr)**
This class uses microcomputers and covers the Pascal language for personal or mainframe computers. This course has three hours of lecture and two hours of laboratory per week.

**DP 174L—BASIC Language Programming (3 cr) (For non-data processing students)**
This introduction to BASIC includes use of input and output statements, arithmetic operations, comparison and branching commands, use of subroutines and the library functions. Algorithms associated with technological computations are developed. This course has three hours of lecture and two hours of laboratory per week.

**DP 175L—C Language Programming (3 cr)**
(*Prerequisite: A programming language*) This course is an introduction to C programming language using microcomputers. This course has three hours of lecture and two hours of laboratory per week.

**DP 176L—Introduction to Microcomputers (3 cr)**
Instruction is provided in computer vocabulary. Students learn how to use personal computers to perform tasks related to their studies. This course has three hours of lecture and two hours of laboratory per week.

# Architectural/Engineering Drafting Technology

**Associate in Applied Science Degree/ Certificate Program**
**5 Terms, Main Campus**

Drafting is an excellent employment skill for persons who like to draw, have construction experience or have a strong interest in building design or the construction process. The potential for advancement into jobs with increasing responsibility and wider scope can be good.

The Architectural/Engineering Drafting Technology program includes the principles of architectural and engineering graphics and the theory and practice of construction technology. Graduates are prepared for entry level jobs as architectural or engineering drafting technicians in residential and commercial construction, and for estimating and sales positions with contractors, fabricators and suppliers.

Students use computer assisted drafting (CAD) software on microprocessors to do various types of drafting projects that are closely related to the laboratory courses.

The first term math course has a prerequisite of MATH 100 or equivalent. If a student takes MATH 100, it is recommended that the student also take the survey course in drafting from the Developmental Studies Department.

To receive a certificate in Architectural/Engineering Drafting Technology a student must complete all ARDR courses and BA 111 and BA 131. To receive an associate degree in Architectural/Engineering Drafting Technology a student must complete all ARDR courses and the indicated Arts & Sciences courses. A grade of C or better in each ARDR course is required for either a certificate or degree.

Students pay a personal equipment fee of $55 when taking ARDR 105L and another $40 when taking ARDR 205L.

## ARCHITECTURAL/ENGINEERING DRAFTING TECHNOLOGY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| ARDR | 102 | Architectural Mathematics | 3 |
| ARDR | 103 | Residential Materials and Methods | 3 |
| ARDR | 105L | Residential Drafting | 5 |
| ARDR | 106L | Introduction to CAD | 2 |
| *COMM | 221 | Interpersonal Communications | 3 |
| or | | | |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| | | Total | 16 |
| *Term II* | | | |
| ARDR | 112 | Architectural Trigonometry | 3 |
| ARDR | 116 | Non-Residential Materials and Methods | 3 |
| ARDR | 117L | Architectural Drafting | 5 |
| ARDR | 118L | Architectural CAD | 2 |
| *PHYS | 102 | Introduction to Physics | 3 |
| | | Total | 16 |
| *Term III* | | | |
| ARDR | 202 | Structural Mathematics | 3 |
| ARDR | 205L | Structural Drafting | 5 |
| ARDR | 207L | Structural CAD | 2 |
| ARDR | 208 | Energy Systems | 3 |
| | | Total | 13 |
| *Term IV* | | | |
| ARDR | 212L | M/E Systems Drafting | 5 |
| ARDR | 215 | M/E Systems Analysis | 5 |
| ARDR | 218L | M/E Systems CAD | 2 |
| *ART | 260 | Architecture History; Ancient through Modern | 3 |
| | | Total | 15 |

*Term 5—Associate Degree*

| | | | |
|---|---|---|---|
| ARDR | 216L | Structural Detailing | 3 |
| ARDR | 217 | Project Management | 3 |
| *MATH | 120 | Intermediate Algebra | |
| *PHIL | 156 | Logic and Critical Thinking | 3 |
| | | Total | 12 |

*Term 5—Certificate*

| | | | |
|---|---|---|---|
| ARDR | 216L | Structural Detailing | 3 |
| ARDR | 217 | Project Management | 3 |
| | | Support Course | 3 |
| †BA | 111 | Communications (7½ weeks) | 3 |
| or | | | |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| †BA | 131 | Human Relations (7½ weeks) | 3 |
| or | | | |
| *PSY | 101 | General Psychology I | 3 |
| | | Total | 13/15 |
| | | Total—Certificate | 64/66 |
| | | Total—Associate Degree | 72 |

*Support Courses*

| | | | |
|---|---|---|---|
| ARDR | 171 | Architectural Design | 3 |
| ARDR | 172 | Architectural Rendering | 3 |
| ARDR | 173 | Technical Sketching | 3 |
| ARDR | 174 | Housing | 2 |
| ARDR | 175 | General Contractor Preparation | 3 |
| ARDR | 271 | Construction Management | 3 |
| ARDR | 272 | Computer Estimating | 3 |
| ARDR | 295 | CAD for Professional Drafters | 5 |
| ARDR | 296 | Special Problems | 1–3 |
| ARDR | 297 | Supervised Work Experience | 3 |

**Arts & Sciences courses required for associate degree. Course descriptions on pages 24–32.*
*†Course descriptions on page 71.*

## COURSE DESCRIPTIONS

**ARDR 102—Architectural Mathematics (3 cr)**
(*Prerequisite: MATH 100 or equivalent*) This course covers basic concepts of algebra and geometry with emphasis on architectural and engineering applications and calculator usage. This course meets five hours per week.

**ARDR 103—Residential Materials and Methods (3 cr)**
Properties of building materials are related to building design and construction methods. Blueprint reading, zoning, building codes, material estimates, energy conservation, and alternative building technologies are covered. The student learns the City of Albuquerque's requirements for obtaining a building permit. This course meets five hours per week.

**ARDR 105L—Residential Drafting (5 cr)**
(*Corerequisites: ARDR 103, ARDR 106L*) This course introduces general drafting theory and techniques needed to produce working drawings and related contract documents for residential structures. The development of graphic skills is emphasized. The student also learns to use manufacturers' technical data and standard reference works in developing drawings. This course has three hours of lecture and seven hours of laboratory per week.

**ARDR 106L—Introduction to CAD (2 cr)**
(*Corequisite: ARDR 105L*) This course includes an introduction to the microcomputer and the MS-DOS operating system. The basic concepts of computer assisted drafting are introduced. This course has two hours of lecture and three hours of laboratory per week.

**ARDR 112—Architectural Trigonometry (3 cr)**
(*Prerequisite: ARDR 102*) This course uses a calculator approach to trigonometry that includes architectural applications such as site planning. This course meets five hours per week.

**ARDR 116—Non-Residential Materials and Methods (3 cr)**
(*Prerequisite: ARDR 103, ARDR 105L*) This course follows the sequence of critical decisions that take a non-residential project from conceptual design to detailed architectural drawings. These decisions include site development, code compliance, setting vertical dimensions and the selection of wall, floor and ceiling systems. Typical non-residential construction materials and detailing are explained throughout and illustrated with example blueprints and specifications. This course meets five hours per week.

**ARDR 117L—Architectural Drafting (5 cr)**
(*Prerequisite: ARDR 105L; corequisites: ARDR 112, ARDR 118L, ARDR 116*) The students' drafting skills are expanded to include the style and media commonly used in architects' offices. Students produce selected working drawings for light commercial structures using appropriate professional reference materials to solve typical problems. This course has three hours of lecture and seven hours of laboratory per week.

**ARDR 118L—Architectural CAD (2 cr)**
(*Prerequisite: ARDR 106L; corequisite: ARDR 117L*) The student builds on CAD skills developed in Introduction to CAD. Intermediate drawing and editing commands are learned and electronic spreadsheets are introduced. This course has two hours of lecture and three hours of laboratory per week.

**ARDR 171—Architectural Design (3 cr)**
(*It is suggested that ARDR 105L be taken prior to this course.*) The student executes two and three dimensional abstract exercises that teach basic design concepts. These concepts are applied to various built environment circumstances. Sketch drawings and study models are made to develop and explain design concepts in specific applications. This course has two hours of lecture and three hours of laboratory per week.

**ARDR 172—Architectural Rendering (3 cr)**
(*It is suggested that ARDR 173 be taken prior to this course.*) Techniques of rendering and illustration are explored. Students work with planar, axonometric and perspective drawings in a variety of media such as graphite, ink and some color methods. This course has one hour of lecture and four hours of laboratory per week.

**ARDR 173—Technical Sketching (3 cr)**
Students make various drawings to develop visual perception, awareness of their environment, and freehand drawing skills. Students explore basic forms, perspective, still life and figure drawing as applications of drafting problems. Large scale drawings are executed in various black and white media. This course has one hour of lecture and four hours of laboratory per week.

**ARDR 174—Housing (2 cr)**
Design considerations that affect housing forms are studied including U.S. housing styles, site considerations and various arrangements of activity spaces. Drawings and models are made to show the effects of different spatial organizations. This course meets two hours per week.

**ARDR 175—General Contractor Preparation (3 cr)**
This class is designed for persons interested in becoming general contractors in New Mexico. Licensing requirements, rules and regulations, business and law, the Uniform Building Code, construction methods and contract management are covered. This course meets five hours per week.

**ARDR 202—Structural Mathematics (3 cr)**
*(Prerequisites: ARDR 112, ARDR 117L)* The basic principles of physics as they apply to construction and structural analysis are covered. The student is introduced to structural design in wood, steel and concrete. Students learn to set up and solve elementary beam design problems. This course meets five hours per week.

**ARDR 205L—Structural Drafting (5 cr)**
*(Prerequisite: ARDR 117L; corequisites: ARDR 202, ARDR 207L)* Students are introduced to the drafting styles and conventions used in consulting engineers' offices. They develop representative drawings of precast and site cast concrete, structural steel and heavy timber structures. Blueprint reading and the development of appropriate graphic skills using a variety of media are emphasized. This course has three hours of lecture and seven hours of laboratory per week.

**ARDR 207L—Structural CAD (2 cr)**
*(Prerequisite: ARDR 118L; corequisite: ARDR 201L)* Intermediate CAD drawing and editing skills are expanded and structural drafting applications are developed. Three dimensional views are introduced. This course has two hours of lecture and three hours of laboratory per week.

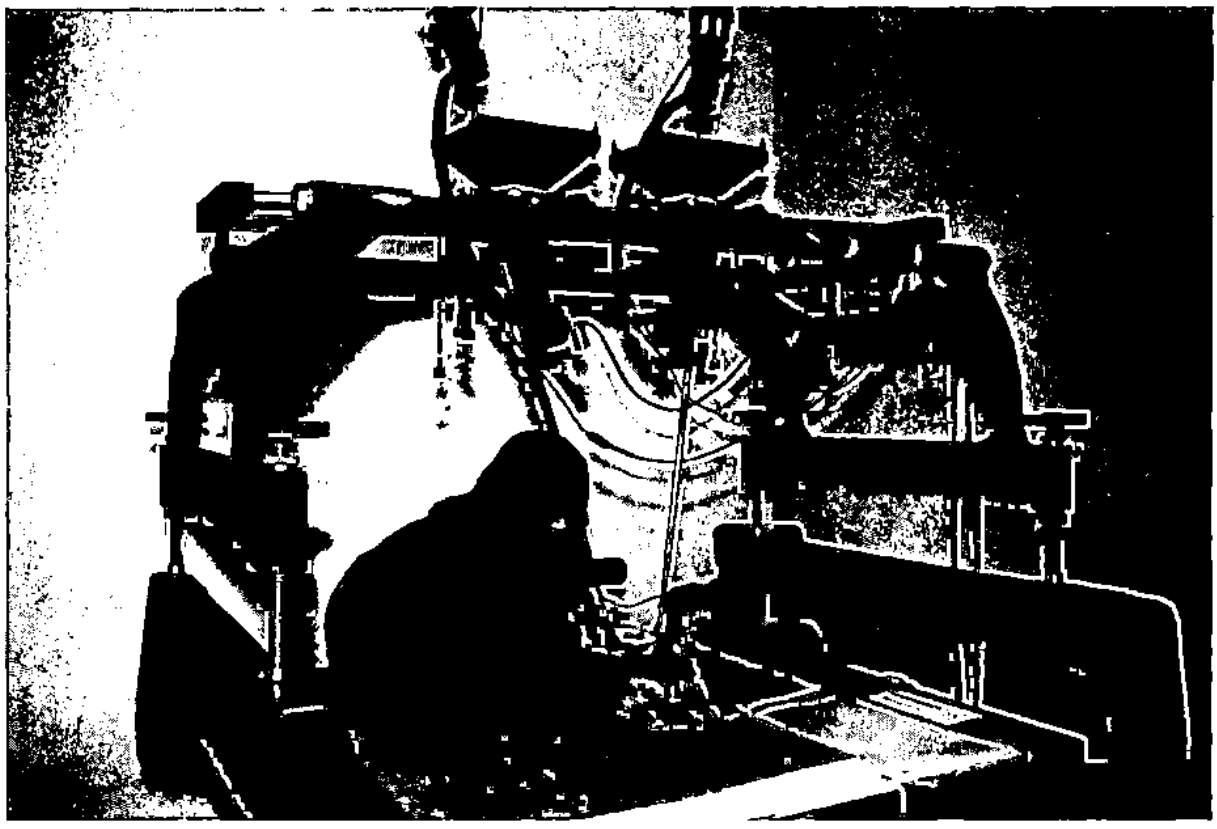
**ARDR 208—Energy Systems (3 cr)**
*(Prerequisites: All first term courses)* This course teaches the use of current energy conservation techniques including passive solar design. Concepts covered include comfort zones, building orientation, heat transfer, thermal mass and overall efficiency calculations. The student applies these techniques to residential designs. This course meets five hours per week.

**ARDR 212L—M/E Systems Drafting (5 cr)**
*(Prerequisite: ARDR 205L; corequisites: ARDR 215, ARDR 218L)* The student learns conventional drafting methods of mechanical and electrical systems. This includes overlaying electrical, heating, ventilation and plumbing systems on architectural views. Engineering drawings are developed and engineering graphic skills are expanded, with some emphasis on inking techniques. This course has three hours of lecture and seven hours of laboratory per week.

**ARDR 215—M/E Systems Analysis (5 cr)**
*(Prerequisites: ARDR 205L, ARDR 208)* General theory and layout information and code requirements for non-residential systems are studied. Topics include lighting, plumbing and air conditioning. Microprocessor software applications may be used to facilitate the calculation process. This course meets 10 hours per week.

**ARDR 216L—Structural Detailing (3 cr)**
*(Corequisite: ARDR 212L)* The students are introduced to typical fabricating shop practices for structural steel, reinforcing steel and precast concrete. Preparation of both erection and production drawings is presented; the notational conventions and graphic standards of shop detailing are emphasized. Blueprint reading and extensive use of industry manuals are required. This course has two hours of lecture and three hours of laboratory per week.

**ARDR 217—Project Management (3 cr)**
*(Corequisite: ARDR 215)* The student is introduced to the knowledge and skills required to manage a building design project. Topics include contracts, fees, cost estimating, bid-



ding, specifications writing, scheduling and drawing coordination. Emphasis is given to the administrative milestones that define the construction phase of a building. This course meets five hours per week.

**ARDR 218L—M/E Systems CAD (2 cr)**
*(Prerequisite: ARDR 207L; corequisites: ARDR 212L, ARDR 215)* The student develops complete engineering drawings of mechanical and/or electrical systems on the computer. Isometric system drawings and installation details are included. This course has one hour of lecture and four hours of laboratory per week.

**ARDR 271—Construction Management (3 cr)**
*(Prerequisite: ARDR 105L; corequisite: ARDR 116)* This course covers basic management systems required for effective project planning and scheduling; cost estimating, budgeting and cost control accounting; quality assurance; materials management; and the interrelationships among each. Students analyze how well and widely these systems are used in industrial, utility and commercial segments of construction. Microcomputer software is used where applicable. This course has four hours of lecture and one hour of laboratory per week.

**ARDR 272—Computer Estimating (3 cr)**
*(Prerequisite: ARDR 105L; corequisite: ARDR 116)* Determination of probable costs of construction projects is emphasized. Topics include making quantity take-offs, determining local unit costs and job scheduling. Microcomputer software is used extensively. This course has two hours of lecture and three hours of laboratory per week.

**ARDR 295—CAD for Professional Drafters (5 cr)**
*(Prerequisite: Completion of a postsecondary architectural drafting program or permission of the academic advisor)* This class assumes professional drafter's skills and knowledge. The student will cover CAD concepts and skills from a beginner's level to an advanced level. This course meets six hours per week and includes six hours of out of class work.

**ARDR 296—Special Problems (1–3 cr)**
*(Prerequisites: Completion of all first term courses and permission of the program academic advisor)* The student is given a problem to investigate and solve. The student then develops and executes a solution using analytical and drafting techniques appropriate to the problem. An oral presentation may be required.

**ARDR 297—Supervised Work Experience (3 cr)**
Supervised work experience is for students who have acquired most of the skills and work attitudes needed to succeed in an entry-level job. Students may apply for this option during the final term.

# Civil and Surveying Technology

## Certificate Program
## 4 Terms, Main Campus

Civil and Surveying Technology provides students with job-entry skills as surveyors, cartographic technicians and design (civil) drafters. Positions are with surveying, mining, engineering and drafting organizations.

The program's labs contain modern drafting machines, drafting stations and stereoplotters. Field equipment includes theodolites, levels, total stations, electronic distance meters and GPS receivers. HP PC386 work stations, each with mouse, graphics CRT and plotter, are provided.

The program requires that instructional hours in the plane surveying course be alternated in Terms II and IV. During those terms, students attend classes up to seven hours two days a week and four hours the remaining days.

Students must pay a $45 personal equipment fee when taking C&S 101L and another $40 when taking C&S 111. A grade of C or better in each Civil and Surveying Technology course is required for a certificate.

Note: Students are required to take 7½-week human relations and communications courses or English 101 and Psychology 101 to fulfill graduation requirements. It is recommended that these courses be taken during Term 1.

### CIVIL AND SURVEYING TECHNOLOGY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| [1]BA | 111 | Communications (7½ weeks) | 2 |
| or | | | |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| [1]BA | 131 | Human Relations (7½ weeks) | 2 |
| or | | | |
| *PSY | 101 | General Psychology I | 3 |
| C&S | 101L | Civil and Surveying Lab/Theory I | 9 |
| C&S | 102 | Civil and Surveying Mathematics I | 6 |
| *Term II* | | | |
| C&S | 111 | Cartographic Techniques Lab/Theory | 9 |
| C&S | 112 | Civil and Surveying Mathematics II | 3 |
| C&S | 113 | Plane Surveying I | 3 |
| *Term III* | | | |
| C&S | 203L | Plane Surveying II | 5 |
| C&S | 204L | Photogrammetric Techniques Lab/ Theory | 1 |
| C&S | 206 | Boundary Law and Public Land Surveys | 3 |
| C&S | 207L | Computer-Assisted Civil Drafting | 3 |
| C&S | 216 | COGO and BASIC Language Programming | 6 |
| *Term IV* | | | |
| C&S | 211L | Civil Design Lab/Theory | 9 |
| C&S | 213L | Plane Surveying III | 3 |
| C&S | 218 | Technical and Legal Communications | 3 |
| | | Total | 69 |
| *Support Courses* | | | |
| C&S | 273 | Introduction to Computer Assisted Drafting | 2 |
| C&S | 296 | Special Problems | 1–3 |

[1]*Course descriptions on page 71.*
**Arts & Sciences courses. Course descriptions on pages 24–32.*

## COURSE DESCRIPTIONS

**C&S 101L—Civil and Surveying Lab/Theory I (9 cr)**
(*Pre- or corequisite: C&S 102*) This course introduces general drafting theory and techniques needed to produce a variety of engineering drawings and survey maps. Emphasis is on development of graphic skills and freehand lettering. The student also learns to trace from rough sketches and manuscripts and develop maps from field notes. This course has three hours of theory and 12 hours of lab per week.

**C&S 102—Civil and Surveying Mathematics I (6 cr)**
(*Prerequisite: MATH 100 or equivalent*) This course applies algebra, geometry and numerical trigonometry concepts to surveying. A computer-related course could be substituted for part of the math course with permission of the program advisor. This course has five hours of theory and five hours of lab per week.

**C&S 111—Cartographic Techniques Lab/Theory (9 cr)**
(*Prerequisite: C&S 101L*) This course includes an introduction to plat and topographic mapping followed by practice in inking lines and lettering on vellum and drafting film. Tracings are made of topographic, geological and plan/profile maps. Format development precedes techniques and practice in negative scribing and preparation and reproduction of mechanical separations. This course has three hours of theory and 12 hours of lab per week.

**C&S 112—Civil and Surveying Mathematics II (3 cr)**
(*Prerequisite: C&S 102*) Trigonometry and analytic geometry are related to surveying problems. The course includes traversing, adjustments, area calculations, intersections and partitioning. This course has three hours of theory and two hours of lab per week.

**C&S 113—Plane Surveying I (3 cr)**
(*Pre- or corequisite: C&S 112*) The student learns basic techniques and equipment used in surveying including tape, level, and theodolite. Notekeeping methods are emphasized. Field work and related computations cover leveling, distance and angle measurement and traversing related to mapping. This course has two hours of theory and four hours of lab per week.

**C&S 203L—Plane Surveying II (5 cr)**
(*Prerequisites: C&S 112, C&S 113; corequisites: C&S 204L, C&S 207L*) Instruction includes theory of errors, instrument calibration and adjustment, and practice in the use of one-second theodolites, EDMs and total stations; practice in precise leveling, stadia surveys, control surveys, computerized surveying systems and computer data reduction is included. Field observations and office calculations for determining azimuth by solar observation are taught and included in a retracement of a U.S. Public Land survey. This course has three hours of theory and six hours of lab per week.

**C&S 204L—Photogrammetric Techniques Lab/Theory (1 cr)**
This course includes theory in aerial photography, geometry of single vertical photographs and overlapping aerial photos, flight planning and establishment of ground control. Students learn the use of modern stereoscopic plotting instruments and map compilation leading to the preparation of maps from aerial photos. This course has one hour of theory and two hours of lab per week.

**C&S 206—Boundary Law and Public Land Surveys (3 cr)**
(*Prerequisite: C&S 112*) A study of modern surveying methods is related to resurveys of U.S. Public Lands, corner restoration and researching GLO plats and field notes. Boundary survey law and techniques are introduced. Extensive practice in the use of the National Geodetic Survey (NGS) Horizontal and Vertical Networks and the New Mexico State Coordinate System is provided along with training in law library use and courthouse record research. This course meets five hours per week.

**C&S 207L—Computer-Assisted Civil Drafting (3 cr)**
(*Corequisites: C&S 203L, C&S 204L*) The student learns how to operate the mouse, plotter and graphics CRT using the PACSOFT system. The input of coordinates, boundary or subdivision points from the keyboard or from COGO output is followed by the creation of label, text and annotation files and drafting sequences for plotted finished drawings. This course has one hour of theory and two hours of lab per week.

**C&S 211L—Civil Design Lab/Theory (9 cr)**
(*Pre- or corequisites: C&S 213L, C&S 218*) Students practice development and calculation techniques to analyze route surveys and produce subdivision and utility plats and profile drawings. An original subdivision, including drainage plans, is designed to subdivision ordinance specifications. This course has three hours of theory and 12 hours of lab per week.

**C&S 213L—Plane Surveying III (3 cr)**
(*Prerequisites: C&S 203L, C&S 206*) Included are grid and radial topographic surveys; GPS theory, GPS field surveys and data reduction; horizontal and vertical curve calculations, design and layout; fluid mechanics; and design of a sanitary sewer system. This course has two hours of theory and four hours of lab per week.

**C&S 216—COGO and BASIC Language Programming (6 cr)**
(*Prerequisite: C&S 112*) This introduction to PACSOFT COGO includes coordinate file generation, traversing, inersing, adjustments, intersection solutions and partitioning. BASIC language instruction includes the use of input and output statements, arithmetic operations, comparison and branching commands, use of subroutines and library functions. Algorithms and programs associated with surveying and engineering computations are developed. This course has four hours of theory and six hours of lab per week.

**C&S 218—Technical and Legal Communications (3 cr)**
(*Prerequisite: C&S 206; corequisite: C&S 211L*) Reading, writing and speaking skills are developed through practice in writing and interpreting land descriptions and interpretation and application of codes and specifications related to subdivision and design ordinances. This course has four hours of theory and one hour of lab per week.

**C&S 273—Introduction to Computer Assisted Drafting (2 cr)**
Microcomputer CAD hardware and software are introduced including format and execution of basic command verbs; creation, editing and saving of drawing files; and generation of hardcopy output. This course has one hour of theory and two hours of lab per week.

**C&S 296—Special Problems (1–3 cr)**
(*Corequisites: All Term IV courses and permission from the academic advisor*) The student is given a problem to investigate and solve. The student then designs the solution using a combination of techniques.

*See also the common support course descriptions on pages 71–72.*

# Data Processing Technology

**Certificate Program**
**4 Terms, Main and Montoya Campuses**

In this program, students learn to solve information and management problems using computer hardware. Graduates are prepared for jobs as business applications programmers, which can be the first step in a career in the computer field.

Computers currently used at T-VI are the IBM 4361, disk drives, tape drives, printers, 3278 CRT displays and IBM PC/XT/PS2 microcomputers and compatibles.

The first and second terms give students a sound background in fundamental skills used on a wide variety of computer and computer-related equipment. The third and fourth terms continue to build computer application skills with emphasis on problem-solving techniques and the man-machine interface. Microprocessor and mainframe environments are used in teaching five widely used programming languages, with a number of computer languages offered as optional courses.

If a student takes Math 100, it is recommended that the student also take the survey course for data processing from the Developmental Studies Department.

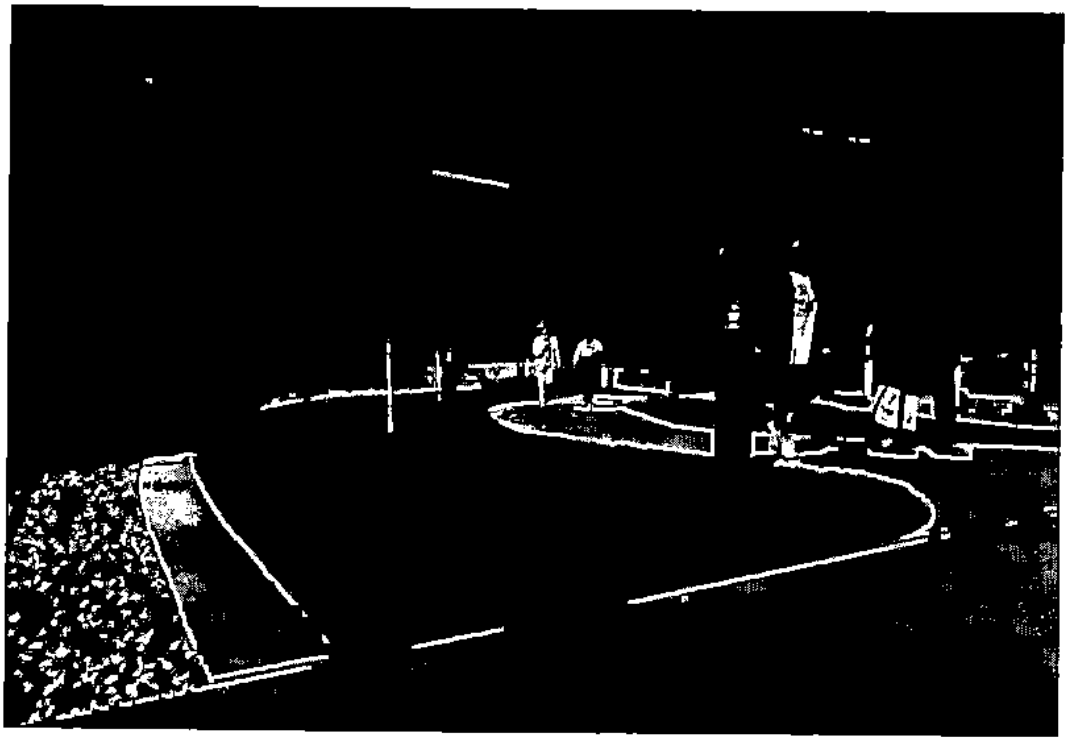
A grade of C or better in each Data Processing Technology course is required for a certificate.

Students must pay a supply fee at the beginning of each term for some courses. (See page 17.)

Note: Students are required to take 7½-week human relations and communications courses or English 101 and Psychology 101 to fulfill graduation requirements. It is recommended that these courses be taken during the first term.

## DATA PROCESSING TECHNOLOGY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| †BA | 111 | Communications (7½ weeks) | 2 |
| or | | | |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| †BA | 131 | Human Relations (7½ weeks) | 2 |
| or | | | |
| *PSY | 101 | General Psychology I | 3 |
| DP | 101L | ANSI COBOL | 6 |
| DP | 102 | Introduction to Computers/JCL | 3 |
| DP | 103 | Computer Mathematics I | 3 |
| DP | 104 | Data Processing Accounting I | 3 |
| *Term II* | | | |
| DP | 111L | Advanced ANSI COBOL | 6 |
| DP | 112L | VSE JCL/VSAM Utilities | 6 |
| DP | 113 | Computer Mathematics II | 3 |
| DP | 114 | Data Processing Accounting II | 3 |
| *Term III* | | | |
| DP | †201L | Programming Techniques | 3 |
| DP | 205L | Assembler Language Programming | 6 |
| DP | 206L | BASIC Language Programming | 3 |
| DP | 207 | Business Systems Analysis and Design | 3 |



*Term IV*

| | | | |
|---|---|---|---|
| DP | 208L | Report Program Generator II | 3 |
| DP | 211L | Programming Projects | 3 |
| DP | 215L | Computer System Software | 3 |
| DP | 218 | Database Concepts | 3 |
| DP | 219L | C Language Programming | 3 |
| | | Total | 67–69 |

*Support Courses*

| | | | |
|---|---|---|---|
| DP | 172L | Fortran Programming | 3 |
| DP | 173L | Pascal Programming | 3 |
| DP | 271 | Operating Systems Design and Implementation | 3 |
| DP | 220 | ADA Language Programming | 3 |
| DP | 296 | Special Problems | 1–3 |
| DP | 297 | Advanced C Language Programming | 3 |

[1]*Course descriptions on page 71.*
[2]*Arts & Sciences courses. Course descriptions on pages 24–32.*

## COURSE DESCRIPTIONS

**DP 101L—ANSI COBOL (6 cr)**
Structured programming projects directly related to business and accounting applications are designed, coded, debugged and executed using a mainframe. This course has five hours of theory and five hours of lab per week.

**DP 102—Introduction to Computers (3 cr)**
Instruction is provided in computer vocabulary, logic and control, and structured programming techniques including hierarchy charts and topdown planning. This course has four hours of theory and one hour of lab per week.

**DP 103—Computer Mathematics I (3 cr)**
(*Prerequisite: MATH 100 or equivalent*) Algebra fundamentals are covered in this course along with selected business and management math applications. Microcomputers are used to assist in the instructional process. This course meets five hours per week.

**DP 104—Data Processing Accounting I (3 cr)**
(*Prerequisite: MATH 100 or equivalent*) Students learn data accounting theory, practice and terms, and their relation to computer data processing. This course meets five hours per week.

**DP 111L—Advanced ANSI COBOL (6 cr)**
(*Prerequisites: DP 101L and DP 102*) This course continues development of programming skills in the ANSI COBOL language with emphasis on indexed file processing, file update and subprogram concepts. Programming is done on mainframes and microcomputers. This course has five hours of theory and five hours of lab per week.

**DP 112L—VSE JCL/VSAM/Utilities (6 cr)**
(*Prerequisites: DP 101L, DP 102*) IBM DOS/VSE Job Control, Editor, Power, Job Entry System, Procedures, Utilities and VSAM File Structures are studied. This course has five hours of theory and five hours of lab per week.

**DP 113—Computer Mathematics II (3 cr)**
(*Prerequisite: DP 103*) This course continues the development of algebra, business math skills and introductory statistics. Elementary BASIC programs are used to teach formulas on microcomputers. This course meets five hours per week.

**DP 114—Data Processing Accounting II (3 cr)**
(*Prerequisite: DP 104*) Students learn the vocabulary and concepts used in manufacturing and corporation accounting. Emphasis is placed on computerized accounting on microcomputers. This course has three hours of theory and two hours of lab per week.

**DP 172L—FORTRAN Programming (3 cr)**
(*Prerequisite: DP 113 or MATH 150*) This is an introductory course in FORTRAN computer programming. This course has three hours of theory and two hours of lab per week.

**DP 173L—Pascal Programming (3 cr)**
(*Prerequisite: DP 113 or MATH 150*) This class uses microcomputers and covers the Pascal language for personal or mainframe computers. This course has three hours of theory and two hours of lab per week.

**DP 201L—Programming Techniques (3 cr)**
(*Prerequisites: DP 111L, DP 112L*) This course involves development of an interactive, on-line business application using a command level CICS, plus VSAM file handling. This course has three hours of theory and two hours of lab per week.

**DP 205L—Assembler Language Programming (6 cr)**
(*Prerequisites: DP 111L, DP 112L*) Students learn programming techniques necessary to write Assembler language programs. This course has six hours of theory and four hours of lab per week.

**DP 206L—BASIC Language Programming (3 cr)**
(*Prerequisite: DP 102 or proficiency in another programming language*) This course uses the BASIC language to further the student's knowledge of interactive programming, routines using menu selection, and search and retrieval routines. Also covered are file structures, statistics, management methods and string manipulations. Microcomputers are used. This course has three hours of theory and two hours of lab per week.

**DP 207—Business Systems Analysis and Design (3 cr)**
(*Prerequisite: DP 111L*) This course teaches structured techniques of systems analysis and design. The systems life cycle is presented and several methods of analyzing existing systems are covered. Microcomputers are used to write documentation and run project management software. This course meets five hours per week.

**DP 208L—Report Program Generator II (3 cr)**
(*Prerequisites: DP 112L and DP 113*) Students are introduced to the RPG II programming language used in business organizations. This course has three hours of theory and two hours of lab per week.

**DP 211L—Programming Projects (3 cr)**
(*Prerequisites: All Term I, II and III courses*) This course is a continuation of Programming Techniques with emphasis on individualized or group data processing projects. This course has two hours of theory and three hours of lab per week.

**DP 215L—Computer System Software (3 cr)**
(*Prerequisite: DP 205L*) This course covers topics designed to increase understanding of the use of microcomputers. This includes the study of operating systems, macro assembler programming, and microcomputer software packages. This course has three hours of theory and two hours of lab per week.

**DP 218—Database Concepts (3 cr)**
*(Prerequisite: DP 207)* General concepts and organization of database systems are included along with practical application of Database Management Systems through the use of networks, telecommunication lines and hardware. Mainframe and/or microcomputers are used. This course has three hours of theory and two hours of lab per week.

**DP 219L—C Language Programming (3 cr)**
*(Prerequisite: DP 205L)* This course is an introduction to C programming language using microcomputers. This course has three hours of theory and two hours of lab per week.

**DP 220—ADA Language Programming (3 cr)**
*(Prerequisite: DP 201L)* This is an introductory course in ADA language programming. This course has three hours of theory and two hours of lab per week.

**DP 271—Operating Systems Design and Implementation (3 cr)**
*(Prerequisite: DP 112L)* This course covers the theory of computer operating systems and introduces the student to the concepts of the Unix operating system. This course has three hours of theory and two hours of lab per week.

**DP 296—Special Problems (1–3 cr)**
*(Corequisites: All Term IV courses and permission from the academic advisor)* The student is given a problem to investigate and solve. The student then designs the solution using a combination of techniques.

**DP 297—Advanced C Language Programming (3 cr)**
*(Prerequisite: DP 175L)* A continuation of DP 175L, this class assumes considerable programming experience. It stresses modular programming using functions and external source code files. Topics include advanced and structured data types, parameter passing, scope of variables, recursion and external file operations.

*See also the common support course descriptions on pages 71–72.*

# Design Drafting Engineering Technology

**Associate in Applied Science Degree**
**4 Terms, Main Campus Only**

Design Drafting Engineering Technology is a complex field of design drafting for persons with a strong interest in electronics and/or mechanical design. The program contains three options: electronic drafting and design, tool design and a generalist option containing both electronic and tool design. All options have a heavy emphasis on mechanical design.

The program integrates the concepts of mathematics and science into the technical courses. The use of computer assisted design drafting (CADD) is emphasized and applied throughout the program.

A well-rounded curriculum enables graduates to seek employment with engineering and scientific research or manufacturing organizations. Modern drafting stations, drafting machines and other typical drafting equipment are used along with microcomputers.

Students are encouraged to join the college chapter of the Society of Manufacturing Engineers (SME) and attend local SME education seminars or become student members of American Design Drafting Association (ADDA).

A grade of C or better in each design drafting course is required for a degree.

Students must buy their own textbooks, drafting tools and a full function, scientific calculator.

## DESIGN DRAFTING ENGINEERING TECHNOLOGY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| DDET | 102L | Manufacturing Methods | 3 |
| DDET | 104L | Introduction to Technical Drafting | 3 |
| DDET | 105L | Basic Machine Tool | 2 |
| DDET | 106L | Basic CADD | 2 |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| *MATH | 121 | College Algebra | 3 |
| or | | | |
| *MATH | 150 | Advanced Algebra | 3 |
| *Term II* | | | |
| DDET | 111L | Mechanical Detailing | 3 |
| DDET | 114L | Structured Computer Programming | 3 |
| DDET | 115L | Intermediate CADD | 3 |
| *ENG | 119 | Technical Communications | 3 |
| *MATH | 162 | Calculus I | 4 |
| or | | | |
| *MATH | 180 | Elementary Calculus | 3 |
| *MATH | 123 | Trigonometry | 2 |
| *Term III* | | | |
| DDET | 201L | Descriptive Geometry | 3 |
| DDET | 205L | Machine Design | 4 |
| *PHYS | 151/153L | General Physics/Lab | 4 |
| *Elective in Humanities/Social Science | | | 3 |
| *Term IV* | | | |
| DDET | 211L | Electromechanical Drafting | 3 |
| DDET | 212 | Applied Engineering Mechanics | 3 |
| DDET | 214 | Materials Science | 4 |
| DDET | 215L | Technical Computer Applications | 2 |

*Option I*
Electronic Drafting and Design emphasis: All of the required courses plus the following:

| | | | |
|---|---|---|---|
| DDET | 116L | Basic Electronic Drafting | 3 |
| DDET | 202L | Applied Electronic Drafting | 2 |
| DDET | 208L | Advanced CADD | 2 |
| | | Total | 66/67 |

*Option II*
Tool Design emphasis: All of the required courses plus the following:

| | | |
|---|---|---|
| DDET | 206L Jig and Fixture Design | 3 |
| DDET | 207L Production Tooling Design | 3 |
| DDET | 216L Dimensional Metrology | 3 |
| | Total | 68/69 |

*Option III*
An Associate of Applied Science degree may be earned without declaring an option. This option requires a combination of courses from Options I and II totaling a minimum of seven credit hours. Prerequisites and corequisites must be satisfied.

*Support Courses*

| | | |
|---|---|---|
| DDET | 291 Special Projects in CADD | 3 |
| DDET | 296 Special Projects | 3 |
| DDET | 297 Cooperative Training | 3–6 |
| ELEC | 103L Electronics Fundamentals | 9 |
| ELEC | 105L Digital Circuits | 3 |
| WELD | 170 Welding Skills Improvement | 3 |

*Arts & Sciences. Course descriptions on pages 24–32.*

## COURSE DESCRIPTIONS

**DDET 102L—Manufacturing Methods (3 cr)**
The student is introduced to manufacturing methods unique to modern industrial technology including machining, fabrication, hot and cold metal working processes, assembly operations and quality assurance methodology. Properties of materials as affected by various manufacturing processes will be introduced. This course has three hours lecture and one hour lab per week.

**DDET 104L—Introduction to Technical Drafting (3 cr)**
This course is an introduction to fundamental drafting techniques including proper care and use of drafting equipment, lettering, sketching, linework, scaling and geometric construction. This course has three hours lecture and three hours lab per week.

**DDET 105L—Basic Machine Tools (2 cr)**
This course familiarizes students with the functional world of manufacturing and industry. Subject matter covers types, applications and use of hand and power tools; types, applications and specifications of common hardware; measuring equipment and inspection techniques; clearances, tolerances, fit and allowances; machine tool operation and applications including drilling, grinding, milling, turning, tapping and boring. Safety glasses must be worn in the lab. This course has two hours of lecture and two hours of lab per week.

**DDET 106L—Basic CADD (2 cr)**
Microcomputer CADD hardware and software are introduced including format and execution of basic command verbs, creation, editing and saving of drawing files, and generation of hardcopy output. This course has two hours lecture and two hours lab per week.

**DDET 111L—Mechanical Detailing (3 cr)**
(*Prerequisite: DDET 104L*) This course introduces the student to the development of detail drawings including layout, view selection, notation, dimensioning, Y-14.5 tolerancing, and revisions of mechanical parts. This course has two hours lecture and four hours lab per week.

**DDET 114L—Structured Computer Programming (3 cr)**
A course in beginning computer programming using engineering applications will be taught. This course meets four hours per week.

**DDET 115L—Intermediate CADD (3 cr)**
(*Prerequisite: DDET 106L*) The student continues use of CADD software in an applied situation. Advanced drawings include insertions, layering, auto-dimensioning and constructing library files. This course has two hours lecture and four hours lab per week.

**DDET 116L—Basic Electronic Drafting (3 cr)**
(*Prerequisite: DDET 104L*) This course presents electronic drafting fundamentals including symbolic representation of electronic components and devices, block and connection diagramming, cable drawings and circuit schematics. This course has two hours lecture and two hours lab per week.

**DDET 201L—Descriptive Geometry (3 cr)**
(*Prerequisite: MATH 121 or MATH 150*) A graphical analysis of the relationship between points, lines and planes in space is presented. Advanced applications of trigonometry to dynamic mechanisms and point locations will also be covered. This course has two hours lecture and two hours lab per week.

**DDET 202L—Applied Electronic Drafting (2 cr)**
(*Prerequisite: DDET 116L*) This course introduces electronic drafting techniques unique to printed circuit board design including development of both discrete and integrated component layouts, artwork, fabrication and assembly drawings and chassis design. This course has two hours lecture and two hours lab per week.

**DDET 205L—Machine Design Layout (4 cr)**
(*Prerequisites: DDET 105L, DDET 111L; corequisite: DDET 201L or MATH 123*) Students apply machine element principles to machine design including fixed and removable fastening techniques; dimensioning and tolerancing for assembly; relational functions of bearings, gears, cams, belts, pulleys and shafts; and parts list development. Force vectors and stress and strain will be introduced. Layout formats are assembled. Part searches and material specifications are made for each design. This course has two hours lecture and four hours lab per week.

**DDET 206L—Jig and Fixture Design (3 cr)**
(*Prerequisites: DDET 111L, DDET 205L; corequisite: DDET 201L*) This design course centers around the science of three dimensional location, clamping and holding of work for machining and assembly. Cams, levers, screwlocks, air and hy-

draulic devices will be covered. Time evaluation and accuracy will be included in design work. Time and motion considerations and datum planes will be taught. This course has three hours lecture and three hours lab per week.

**DDET 207L—Production Tooling Design (3 cr)**
(*Prerequisite: DDET 206L*) Students will design tools for metal forming operations via power presses and brakes. This course will concentrate on the design of male and female hard dies, steel rule dies and urethane tooling for metal blanking, and forming and assembly operations. This course has three hours lecture and three hours lab per week.

**DDET 208L—Advanced CADD (2 cr)**
(*Prerequisite: DDET 115L; corequisite: DDET 202L*) Students produce complete electronic drawings by merging principles of CADD with standard drafting rules and conventions. Assignments are in the field of electronic drafting and include multilayering. This course has two hours lecture and two hours lab per week.

**DDET 211L—Electromechanical Drafting (3 cr)**
(*Prerequisite: DDET 205L*) This course involves the design and drafting of electromechanical systems using combined concepts learned and practiced in previous machine and/or electronics drafting courses. This course has one hour lecture and five hours lab per week.

**DDET 212—Applied Engineering Mechanics (3 cr)**
(*Prerequisite: MATH 123*) This course analyzes the forces on mechanical elements at rest and in motion. The study of statics and complex forces on materials is also included. This course has three hours of lecture per week.

**DDET 214L—Materials Science (4 cr)**
(*Prerequisites: DDET 201L or MATH 123 and ENG 119*) Students analyze and evaluate the engineering characteristics of materials used in modern manufacturing technology in typical applications. Mechanical, physical and chemical properties are included. A comprehensive research paper is required in this course. This course has three hours of lecture and three hours of lab per week.

**DDET 215L—Technical Computer Applications (2 cr)**
(*Prerequisite: DDET 115L*) Students use the computer to solve engineering and related problems. This course has two hours lecture and two hours lab per week.

**DDET 216L—Dimensional Metrology (3 cr)**
(*Prerequisite: DDET 111L or MATT 112*) This laboratory and lecture course introduces students to the science of precision measure. Using a well equipped lab, students will make direct and indirect measurements to 50 millionths of an inch. Measurements will concentrate on linear and angular units. Students will be introduced to equipment used in electrical, decibel and PPM measurements. This course has three hours of lecture and three hours of lab per week.

**DDET 291—Special Projects in CADD (3 cr)**
This course involves project work in electromechanical drafting using advanced CADD concepts.

**DDET 296—Special Problems (1–3 cr)**
(*Corequisites: All Term IV required courses and permission from the academic advisor*) The student is given a problem to investigate and solve. The student then designs and drafts the solution using a combination of drafting techniques.

**DDET 297—Cooperative Training (3–6 cr)**
(*Prerequisite: Permission from the academic advisor*) In cooperation with local industry, the student works for one term on a cooperative basis in an appropriate training program.

# Electromechanical Drafting Technology

## Associate in Applied Science Degree
## Main Campus

This associate in applied science degree is offered to students who have graduated from the Electromechanical Drafting certificate program. This degree program will not be available after 1993.

To earn the degree, students must complete 19 or 20 credit hours of Arts & Sciences courses and the two technical courses listed below. Students may be required to take additional technical courses. Further information on this program is available from the Technologies Department.

Note: Persons wanting to begin studies in this field should refer to the Design Drafting Engineering Technology program on page 79.

### ELECTROMECHANICAL DRAFTING DEGREE COMPLETION PROGRAM

**Arts & Sciences Requirements** (19–20 cr)

| | | | |
|---|---|---|---|
| *Communications* | | | |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| *ENG | 119 | Technical Communications | 3 |
| *Mathematics/Natural Science* | | | |
| *MATH | 121 | College Algebra | 3 |
| or | | | |
| *MATH | 150 | Advanced Algebra | 3 |
| *MATH | 162 | Calculus I | 4 |
| or | | | |
| *MATH | 180 | Elementary Calculus | 3 |
| *PHYS | 151/153L | Physics/Lab | 4 |
| or | | | |
| *PHYS | 160 | General Physics | 4 |
| *Humanities/Social Science* | | | |
| *Elective | | | 3 |
| | | Total | 19–20 |

**Additional Core Requirements** (6 cr)

| | | | |
|---|---|---|---|
| DDET | 291 | Advanced CADD | 3 |
| DDET | 296 | Special Projects | 3 |
| | | Total | 6 |

*Course descriptions on pages 24–32.

## COURSE DESCRIPTIONS

**DDET 291—Advanced CADD (3 cr)**
This course involves project work using advanced CADD concepts. The projects are in the field of electromechanical drafting.

**DDET 296—Special Projects (3 cr)**
*(Prerequisites: Completion of the Electromechanical Drafting program and permission from the academic advisor)* The student is given a problem in the area and asked to do a complete investigation and come up with the correct solution. The student designs the solution using a combination of drafting techniques.

# Electronics Technology

### Associate in Applied Science Degree/ Certificate Program
### 4 Terms, Main Campus

The Electronics Technology program, which offers both certificate and associate degree options, provides the student with a broad base of skills in analog and digital circuits.

Training is provided in the fundamental concepts of electronics with emphasis on digital equipment such as computers and electronic control devices. Circuits which have application in the semiconductor, digital equipment manufacturing, measurement and control, communications and display industries are studied.

Lab facilities contain modern equipment for testing, troubleshooting, calibrating, analyzing and designing electronic circuits. Such circuits may be found in communications equipment, computers, electronic instruments and many other electronic devices.

Certificate program graduates who want to earn a degree must fulfill the Arts & Sciences and residency requirements, and satisfy core requirements according to the catalog in effect when the degree work was started.

If a student takes MATH 100, it is recommended that the student also take the survey course for Electronics from the Developmental Studies Department. A grade of C or better in each electronics course is required for a degree or certificate.

There is a $10 supply fee for ELEC 116.

Note: Certificate program students are required to take 7½-week human relations and communications courses to fulfill graduation requirements. It is recommended that these courses be taken during the first term.

## ELECTRONICS TECHNOLOGY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| [1]BA | 111 | Communications (7½ weeks) | 2 |
| [1]BA | 131 | Human Relations (7½ weeks) | 2 |
| ELEC | 103L | Electronics Fundamentals | 9 |
| ELEC | 104 | Electronics Mathematics | 3 |
| ELEC | 105L | Digital Circuits | 3 |
| *ENG | 119 | Technical Communications | 3 |
| | | *Humanities/Social Science Elective | 3 |
| or | | | |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| or | | | |
| *PSY | 101 | General Psychology I | 3 |
| *Term II* | | | |
| ELEC | 114L | Semiconductor Devices | 6 |
| ELEC | 116 | Introduction to Microcomputers | 3 |
| ELEC | 117 | Introduction to Lasers | 3 |
| ELEC | 118L | Electromechanical Devices | 6 |
| *MATH | 162 | Calculus I | 4 |
| or | | | |
| *MATH | 180 | Elementary Calculus | 3 |
| *Term III* | | | |
| ELEC | 202L | Electronic Circuits | 6 |
| ELEC | 203L | Introduction to Microprocessors | 6 |
| ELEC | 204L | Introduction to Computer Programming | 3 |
| *PHYS | 151/ 153L | Physics/Lab | 4 |
| or | | | |
| *PHYS | 160 | General Physics | 4 |
| *Term IV* | | | |
| *CHEM | 111/ 112L | Introduction to Chemistry/Lab | 4 |
| or | | | |
| *CHEM | 121L | General Chemistry | 4 |
| ELEC | 212L | Electronic Applications | 6 |
| ELEC | 214L | Troubleshooting Techniques | 3 |
| ELEC | 215L | Advanced Microprocessors | 6 |
| | | Total | 84/85 |
| *Support Courses* | | | |
| ELEC | 271 | RF Fundamentals | 3 |
| ELEC | 272 | Telecommunications | 3 |
| ELEC | 276L | Soldering Techniques (7½ weeks) | 2 |
| ELEC | 277L | Industrial Systems | 3 |
| ELEC | 296 | Special Problems | 1–3 |
| ET | 218 | Pulse Power I | 3 |
| ET | 220 | Pulse Power II | 3 |

**Arts & Sciences courses required for associate degree. Course descriptions on pages 24–32.*
*[1]Course descriptions on page 71.*

## COURSE DESCRIPTIONS

**ELEC 103L—Electronics Fundamentals (9 cr)**
*(Recommended corequisite: ELEC 104 or strong mathematics background)* This course covers the basic concepts of DC and AC electronics with emphasis on Kirchhoff's Law, circuit analysis and component application with troubleshooting. Students obtain skills in constructing circuits from schematic dia-

grams and in the use of oscilloscopes, function generators and multimeters in laboratory exercises. This course has five hours of theory and 10 hours of lab per week.

**ELEC 104—Electronics Mathematics (3 cr)**
(*Prerequisite: MATH 100 or equivalent*) This course covers algebra and trigonometry with emphasis on DC and AC circuit analysis. This course meets five hours per week.

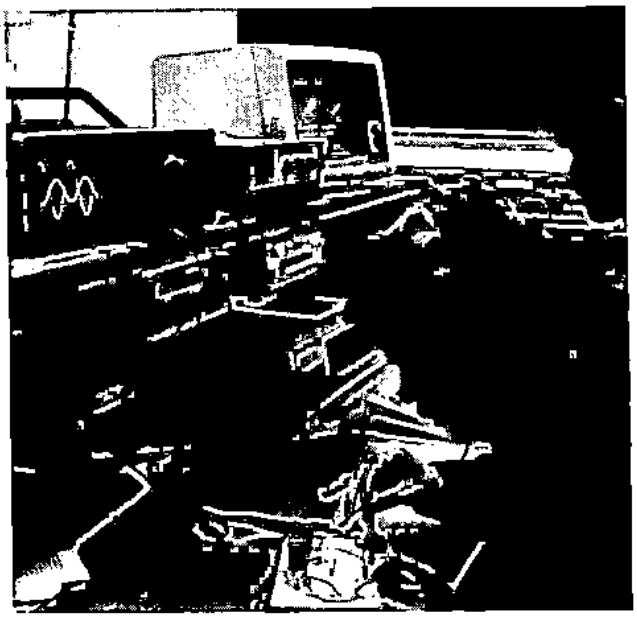
**ELEC 105L—Digital Circuits (3 cr)**
(*Recommended corequisite: ELEC 104 or strong mathematics background*) The fundamental concepts and applications of digital logic circuits are covered. Number systems and arithmetic operations are studied. Boolean algebra is applied to combinational logic. The basic logic gates and MSI and LSI circuits are used to develop operational digital circuits. This course has three hours of theory and two hours of lab per week.

**ELEC 114L—Semiconductor Devices (6 cr)**
(*Prerequisites: ELEC 103L, ELEC 104*) This course covers the study of semiconductor devices, diodes, transistors, op amps and JFETS, and their application in simple power supplies and amplifiers. Students obtain skills in constructing, analyzing and troubleshooting semiconductor circuits. This course has five hours of theory and five hours of lab per week.

**ELEC 116—Introduction to Microcomputers (3 cr)**
(*Prerequisites: Completion of Term 1*) This course covers microcomputer architecture, MS-DOS, word processing, digital and analog circuit analysis software, computer assisted drafting and an introduction to computer programming. This course has three hours of theory and two hours of lab per week.

**ELEC 117—Introduction to Lasers (3 cr)**
(*Prerequisites: ELEC 103L, ELEC 104*) This course introduces the student to the basic operation of the laser. The helium neon laser is used to discuss the nature of light, laser operation and laser safety. This course has three hours of theory and two hours of lab per week.

**ELEC 118L—Electromechanical Devices (6 cr)**
(*Prerequisites: Completion of Term 1*) This course covers theory and application of mechanical devices and their control circuits. Topics include hydraulics, pneumatics, vacuum, AC and DC motors, stepper motors and servomechanisms. Students obtain skills in the assembly, operation and troubleshooting of small-scale electromechanical systems. This course has five hours of theory and five hours of lab per week.



**ELEC 202L—Electronic Circuits (6 cr)**
(*Prerequisite: ELEC 114L*) Multiple class amplifier circuits, oscillator, signal-conditioning, modulation including receiver circuits, operational amplifiers and A/D, D/A circuits are covered in this course. Students develop, analyze and troubleshoot these circuits in laboratory exercises. This course has five hours of theory and five hours of lab per week.

**ELEC 203L—Introduction to Microprocessors (6 cr)**
(*Prerequisite: ELEC 118L*) The organization of a microcomputer is explained using a block diagram consisting of the 8088 CPU, memory and I/O devices. The importance of the interconnections, address bus, data bus and control signals is emphasized. Students also write assembly language programs to interface their wired circuit boards to the microcomputer. An EPROM is included within the circuits. This course has five hours of theory and five hours of lab per week.

**ELEC 204L—Introduction to Computer Programming (3 cr)**
(*Prerequisite: ELEC 116*) The student learns to program using the Pascal programming language. This course has three hours of theory and two hours of lab per week.

**ELEC 212L—Electronic Applications (6 cr)**
(*Prerequisite: ELEC 202L*) Students learn applications of switched-mode power supplies, thyristors, various types of transducers and instrumentation for data collection, fiber optics and optoelectronic devices. Related laboratory exercises provide experience in constructing and troubleshooting operating electronic systems. This course has five hours of theory and five hours of lab per week.

**ELEC 214L—Troubleshooting Techniques (3 cr)**
(*Prerequisite: ELEC 114L; corequisite: ELEC 202L*) This course teaches students to apply troubleshooting techniques to a complete electronic system. Emphasis is on systematic analysis to locate problems. This course has two hours of theory and three hours of lab per week.

**ELEC 215L—Advanced Microprocessors (6 cr)**
(*Prerequisite: ELEC 203L*) This course introduces the student to programming under MS-DOS. The student writes programs and wires circuits to interface with the computer for an ASCII keyboard, printer, ADCs, DACs and several serial devices including robotic devices. Modems also are demonstrated. This course has five hours of theory and five hours of lab per week.

**ELEC 271—RF Fundamentals (3 cr)**
(*Prerequisite: ELEC 114L*) This course provides study and analysis of electromagnetic interference and broadcast communications systems including AM, FM, SSB and television. This course has three hours of theory and two hours of lab per week.

**ELEC 272—Telecommunications (3 cr)**
(*Corerequisite: ELEC 215L*) This course provides system of transmission line, antenna and microwave theory, and data communication techniques including USARTS, RS-232 interfacing and modems. This course has three hours of theory and two hours of lab per week.

**ELEC 276L—Soldering Techniques (7½ weeks) (2 cr)**
Students use a top repair center to learn high-reliability soldering and desoldering techniques. Nondestructive printed circuit board repairs and component replacement techniques also are used. This course has one hour of theory and four hours of lab per week.

**ELEC 277L—Industrial Systems (3 cr)**
*(Prerequisites: ELEC 114L, ELEC 118L)* A plasma etcher is used to introduce students to industrial systems. By analyzing the machine's subsystems and how they interact, students troubleshoot for solutions to equipment and process problems. This course has two hours of theory and three hours of lab per week.

**ELEC 296—Special Problems (1–3 cr)**
*(Corequisites: All Term IV courses and permission from the academic advisor)* The student is given a problem to investigate and solve. The student then designs the solution using a combination of techniques.

**ET 218—Pulse Power I (3 cr)**
*(Prerequisite: Completion of Term 2)* The generation, transmission and measurement of high voltage, pulsed power systems are studied.

**ET 220—Pulse Power II (3 cr)**
*(Prerequisite: ET 218)* This course includes analysis and design of transmission systems, vacuum systems, various high voltage and current monitors, probes, high speed data acquisition systems and control systems. All aspects of oil, deionized water and $SF_6$ gas are included.

*See also the common support course descriptions on pages 71–72.*

# Electronics Engineering Technology

**Associate in Applied Science Degree**
**4 Terms, Montoya Campus**

The Electronics Engineering Technology program emphasizes the application of scientific and engineering methods along with related technical skills necessary to support engineering activity in research, development, production, maintenance and operation.

This program represents a rigorous, engineering-type course of study. Lectures, lab work and considerable homework provide the basis for developing the necessary electronics skills to gain employment in a broad occupational area at levels between the electronics technician and the electrical engineer.

Lab facilities contain modern equipment for testing, troubleshooting, calibrating, analyzing and designing electronic circuits. Such circuits may be found in communications equipment, computers, electronic instruments and many other electronic devices.

Students applying for this program should be seriously interested in the study of electronics with emphasis on mathematics and science and have high standards of excellence.

For the Associate in Applied Science Degree in Electronics Engineering Technology, the student must complete a total of 67 credit hours in Arts & Sciences and technical courses.

Pre- or corequisites for each of the Engineering Technology courses may be waived by the academic advisor for a student who has related experience and/or course work. Credit for an ET course may be given if an official transcript from another institution indicates an equivalent course and is approved by the academic advisor and department dean. Credit for an ET course may be given by passing a challenge exam.

A grade of C or better in each ET course is required for a degree.

Students in this program are required to purchase all textbooks, laboratory manuals, calculator and drafting tool kit.

## ELECTRONICS ENGINEERING TECHNOLOGY PROGRAM

| *Term 1* | | | *Cr Hrs* |
|---|---|---|---|
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| ET | 109L | Circuit Analysis I | 5 |
| ET | 117L | Graphics and Analytical Methods | 3 |
| *MATH | 121 | College Algebra | 3 |
| or | | | |
| *MATH | 150 | Advanced Algebra | 3 |

*Term II*

| | | | |
|---|---|---|---|
| *ENG | 119 | Technical Communications | 3 |
| ET | 113L | Structured Computer Programming | 3 |
| ET | 119L | Circuit Analysis II | 5 |
| ET | 137L | Digital Electronics I | 3 |
| *MATH | 123 | Trigonometry | 2 |
| *MATH | 162 | Calculus I | 4 |
| or | | | |
| *MATH | 180 | Elements of Calculus I | 3 |

*Term III*

| | | | |
|---|---|---|---|
| *CHEM | 111/112L | Introduction to Chemistry/Lab | 4 |
| or | | | |
| *CHEM | 121L | General Chemistry | 4 |
| ET | 209L | Electronic Devices | 5 |
| ET | 237L | Digital Electronics II | 3 |
| ET | 244L | Microprocessors | 4 |
| | | *Humanities/Social Science Elective | 3 |

*Term IV*

| | | | |
|---|---|---|---|
| ET | 211L | Electronic Systems | 5 |
| ET | 249L | Microprocessor Interfacing | 3 |
| *PHYS | 151/153L | Physics/Lab | 4 |
| or | | | |
| *PHYS | 160 | General Physics | 4 |
| *PHYS | 163L | General Physics Lab | 1 |
| | | or | |
| | | *Technical Elective | 3 |
| | | Total | 67/68 |

*Technical Electives*

| | | | |
|---|---|---|---|
| ET | 218 | Pulse Power I | 3 |
| ET | 220 | Pulse Power II | 3 |
| ET | 296 | Special Problems | 1–3 |
| ET | 297 | Cooperative Training | 2–4 |

**Arts & Sciences. Course descriptions on pages 24–32.*

## COURSE DESCRIPTIONS

**ET 109L—Circuit Analysis I (5 cr)**
(*Corequisites: ENG 101, ET 117L, MATH 150 or MATH 121*) Passive DC circuits will be analyzed using Ohm's Law, Kirchhoff's Laws, source conversions, network theorems and branch/mesh/nodal analysis. Transient analysis of R-C and R-L circuits will be presented along with concepts of energy, power and efficiency. Computers will be used for spreadsheet preparation, graphics and word processing. This course has three hours of lecture and four hours of lab per week.

**ET 113—Structured Computer Programming (3 cr)**
A course in beginning computer programming using engineering applications will be taught. This course meets four hours per week.

**ET 117L—Graphics and Analytical Methods (3 cr)**
(*Corequisite: MATH 150 or MATH 121*) Mechanical and electronic drafting practices/methods including schematic preparation, printed circuit layout, chassis definition and wiring will be studied. Considerable lab time will be devoted to the development of skills and techniques required to prepare drawings. In addition, students will gain experience in word processing, spreadsheet preparation, graphics, data base preparation and CAD. This course has two hours of lecture and two hours of lab per week.

**ET 119L—Circuit Analysis II (5 cr)**
(*Prerequisite: ET 109L; corequisites: ENG 119, MATH 123, MATH 162 or MATH 180*) Passive AC circuits with dependent and independent sources will be studied along with network theorems, phasor analysis, AC measurements, power factor analysis/correction, sweep generation usage and Fourier series. Computers will be used for spreadsheet preparation, graphics, word processing and CAD. This course has three hours of lecture and four hours of lab per week.

**ET 137L—Digital Electronics I (3 cr)**
(*Prerequisite: ET 109L*) Combinational logic using integrated circuits will be analyzed and designed using Boolean algebra, Karnaugh maps and logic diagrams. Number systems, binary codes and code conversions will be studied along with flip flops, multivibrators and circuit applications. Lab work will emphasize wiring and troubleshooting skill development while confirming circuit design objectives. This course has three hours of lecture and one hour of lab per week.

**ET 209L—Electronic Devices (5 cr)**
(*Pre- or corequisite: ET 119L*) Diodes, bipolar transistors, FETs and circuits including rectifiers, zener diode regulators, clippers, clampers and amplifiers will be studied. Transistor modeling and circuit analysis/design will be stressed along with computer usage for circuit analysis, spreadsheet preparation, graphics and word processing. This course has three hours of lecture and four hours of lab per week.

**ET 211L—Electronic Systems (5 cr)**
(*Prerequisite: ET 209L; corequisite: ET 249L*) Electronic system schematics will be studied along with frequency considerations, decibel usage, differential and operational amplifiers, power supplies, thyristors, PLLs, oscillators and feedback concepts. Each student will prepare a technical manual for a computer-controlled system. Video monitor basics and introductory transmission line theory will be presented. Computers will be used for instrument control and data logging via IEEE488 and RS232 bus interfacing, circuit analysis and word processing. This course has three hours of lecture and four hours of lab per week.

**ET 218—Pulse Power I (3 cr)**
(*Prerequisite: ET 119L or ELEC 115L*) The generation, transmission and measurement of high-voltage, pulsed power systems will be studied. This course meets five hours per week.

**ET 220—Pulse Power II (3 cr)**
(*Prerequisite: ET 218*) This course includes analysis and design of transmission systems, vacuum systems, various high voltage and current monitors, probes, high speed data acquisition systems and control systems. All aspects of oil, deionized water and $SF_6$ gas are included. This course meets five hours per week.

**ET 237L—Digital Electronics II (3 cr)**
(*Prerequisite: ET 137L*) Logic circuit decoders, encoders, multiplexers, counters and registers will be studied along with ADCs, DACs, RAM, ROM and applications. Microprocessor structure, timing/control, ALU operation, interface circuits and machine language programming will be introduced. This course has three hours of lecture and one hour of lab per week.

**ET 244L—Microprocessors (4 cr)**
(*Prerequisite: ET 137L; corequisite: ET 237L*) Microprocessors and microcomputers will be studied in depth with emphasis on machine and assembly language programming. Interrupts and DOS entry points will be introduced. This course has three hours of lecture and two hours of lab per week.

**ET 249L—Microprocessor Interfacing (3 cr)**
(*Prerequisites: ET 209L, ET 244L*) I/O devices including printers, terminals and proto board circuits will be interfaced to a microcomputer. Each student will make an oral presentation and prepare documentation describing system operation and organization along with block diagrams, schematics and structured software. This course has two hours of lecture and two hours of lab per week.

**ET 296—Special Problems (1–3 cr)**
(*Corequisites: All Term IV courses and permission from the academic advisor*) The student is given a problem to investigate and solve. The student then designs the solution using a combination of techniques.

**ET 297—Cooperative Training (2–4 cr)**
(*Available to students within two terms of graduation in ET program*) Employment in the electronics field, if arranged by the student, may satisfy technical elective requirements with approval of the academic advisor. An oral presentation or written report will be required to summarize work experiences.

# Instrumentation and Control Technology

**Associate in Applied Science Degree/ Certificate Program**
**4 Terms, Main Campus**

The Instrumentation and Control Technology program provides students with job-entry skills to troubleshoot and repair automated or process control equipment and instrumentation. Students may earn an associate degree or certificate.

Topics covered include digital and analog circuitry, microcomputer applications software, electronic and pneumatic instrumentation, vacuum systems and robotics. Software packages include CAD, spreadsheets and word processing. The program meets in modern laboratories containing electronic lab benches and test instruments, oscilloscopes, signal generators, power supplies, digital trainers, microcomputers, servo trainers, hydraulic-pneumatic and process control equipment and a student shop area.

The associate in applied science degree program provides graduates with additional science and technical skills for the support of engineering activities.

Certificate program graduates who want to earn a degree must fulfill the Arts & Sciences and residency requirements and satisfy core requirements according to the catalog in effect when the degree work was started. A grade of C or better in each electronics and instrumentation and control technology course is required for a degree or certificate.

If a student takes MATH 100, it is recommended that the student also take the survey course for Instrumentation and Control from the Developmental Studies Department.

There is a $10 supply fee for ELEC 116.

Note: Students seeking a certificate are required to take 7½-week human relations and communications courses or English 101 and Psychology 101 to fulfill graduation requirements. It is recommended that these courses be taken during the first term.

## INSTRUMENTATION AND CONTROL TECHNOLOGY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| †BA | 111 | Communications (7½ weeks) | 2 |
| or | | | |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| †BA | 131 | Human Relations (7½ weeks) | 2 |
| or | | | |
| *PSY | 101 | General Psychology I | 3 |
| ELEC | 103L | Electronics Fundamentals | 9 |
| ELEC | 104 | Electronics Mathematics | 3 |
| ELEC | 105L | Digital Circuits | 3 |
| *ENG | 119 | Technical Communications | 3 |
| | | *Humanities/Social Science Elective | 3 |
| *Term II* | | | |
| ELEC | 114L | Semiconductor Devices | 6 |
| ELEC | 116 | Introduction to Microcomputers | 3 |
| ELEC | 117 | Introduction to Lasers | 3 |
| ELEC | 118L | Electromechanical Devices | 6 |
| *MATH | 162 | Calculus I | 4 |
| or | | | |
| *MATH | 180 | Elementary Calculus | 3 |
| *Term III* | | | |
| *CHEM | 111/ 112L | Introduction to Chemistry/Lab | 4 |
| or | | | |
| *CHEM | 121L | General Chemistry | 4 |
| IC | 202L | Linear Circuits | 6 |
| IC | 203L | Control Circuits I | 6 |
| IC | 204L | Introduction to Computer Programming | 3 |
| *Term IV* | | | |
| IC | 212L | Computer I/O and Architecture | 6 |
| IC | 213L | Control Circuits II | 6 |
| IC | 214L | Instrumentation | 6 |
| *PHYS | 151/ 153L | Physics/Lab | 4 |
| or | | | |
| *PHYS | 160 | General Physics | 4 |
| | | Totals | 87–90 |
| *Support Courses* | | | |
| ELEC | 271 | RF Fundamentals | 3 |
| ELEC | 272 | Telecommunications | 3 |
| ELEC | 273L | Troubleshooting Techniques | 3 |
| ELEC | 276L | Soldering Techniques (7½ weeks) | 2 |
| ELEC | 277L | Industrial Systems | 3 |
| ET | 218 | Pulse Power I | 3 |
| ET | 220 | Pulse Power II | 3 |
| IC | 296 | Special Problems | 1–3 |
| LEOT | 117 | Basic Machine Tool | 2 |

**Arts & Sciences courses required for associate degree. Course descriptions on pages 24–32.*
*†Course descriptions on page 71.*

## COURSE DESCRIPTIONS

**ELEC 103L—Electronics Fundamentals (9 cr)**
*(Recommended corequisite: ELEC 104 or strong mathematics background)* This course covers the basic concepts of DC and AC electronics with emphasis on Kirchhoff's Law, circuit analysis and component application with troubleshooting. Students obtain skills in constructing circuits from schematic diagrams and in the use of oscilloscopes, function generators and multimeters in laboratory exercises. This course has five hours of theory and 10 hours of lab per week.

**ELEC 104—Electronics Mathematics (3 cr)**
*(Prerequisite: MATH 100 or equivalent)* This course covers algebra and trigonometry with emphasis on DC and AC circuit analysis. This course meets five hours per week.

**ELEC 105L—Digital Circuits (3 cr)**
*(Recommended corequisite: ELEC 104 or strong mathematics background)* The fundamental concepts and applications of digital logic circuits are covered. Number systems and arithmetic operations are studied. Boolean algebra is applied to combinational logic. The basic logic gates and MSI and LSI circuits are used to develop operational digital circuits. This course has three hours of theory and two hours of lab per week.

**ELEC 114L—Semiconductor Devices (6 cr)**
*(Prerequisites: Completion of Term I)* This course covers the study of semiconductor devices, diodes, transistors, op amps and JFETS, and their application in simple power supplies and amplifiers. Students obtain skills in constructing, analyzing and troubleshooting semiconductor circuits. This course has five hours of theory and five hours of lab per week.

**ELEC 116—Introduction to Microcomputers (3 cr)**
*(Prerequisites: Completion of Term I)* This course covers microcomputer architecture, MS-DOS, word processing, digital and analog circuit analysis software, computer assisted drafting and an introduction to computer programming. This course has three hours of theory and two hours of lab per week.

**ELEC 117—Introduction to Lasers (3 cr)**
*(Prerequisites: ELEC 103L, ELEC 104)* This course introduces the student to the basic operation of the laser. The helium neon laser is used to discuss the nature of light, laser operation and laser safety. This course has three hours of theory and two hours of lab per week.

**ELEC 118L—Electromechanical Devices (6 cr)**
*(Prerequisites: Completion of Term I)* This course covers theory and application of mechanical devices and their control circuits. Topics include hydraulics, pneumatics, vacuum, AC and DC motors, stepper motors and servomechanisms. Students obtain skills in the assembly, operation and troubleshooting of small-scale electromechanical systems. This course has five hours of theory and five hours of lab per week.

**ELEC 271—RF Fundamentals (3 cr)**
*(Prerequisite: ELEC 114L)* This course provides study and analysis of electromagnetic interference and broadcast communications systems including AM, FM, SSB and television. This course has three hours of theory and two hours of lab per week.

**ELEC 272—Telecommunications (3 cr)**
*(Corequisite: ELEC 215L)* This course provides system of transmission line, antenna and microwave theory, and data communication techniques including USARTS, RS-232 interfacing and modems. This course has three hours of theory and two hours of lab per week.

**ELEC 273L—Troubleshooting Techniques (3 cr)**
*(Prerequisites: ELEC 114L, ELEC 118L)* Students learn systems analysis of various electronic equipment. Emphasis is on

locating problems. The course includes theoretical work to complement the laboratory assignments. This course has two hours of theory and three hours of lab per week.

**ELEC 276L—Soldering Techniques (7½ weeks) (2 cr)**
Students use a top repair center to learn high-reliability soldering and desoldering techniques. Nondestructive printed circuit board repairs and component replacement techniques also are used. This course has one hour of theory and four hours of lab per week.

**ELEC 277L—Industrial Systems (3 cr)**
(*Prerequisites: ELEC 114L, ELEC 118L*) A plasma etcher is used to introduce students to industrial systems. By analyzing the machine's subsystems and how they interact, students troubleshoot for solutions to equipment and process problems. This course has two hours of theory and three hours of laboratory per week.

**IC 202L—Linear Circuits (6 cr)**
(*Prerequisites: ELEC 114L, ELEC 118L*) This course covers transistor and operational circuits, audio and video circuits, oscillator circuits, modulation methods and thyristor components. This course has five hours of theory and five hours of lab per week.

**IC 203L—Control Circuits I (6 cr)**
(*Prerequisites: ELEC 114L, ELEC 118L; corequisite: IC 202L*) The student learns to design and construct a computer-controlled robot. Assembly language using the 8088 microprocessor is covered, and several interfacing projects are done including motor control. This course has five hours of theory and five hours of lab per week.

**IC 204L—Introduction to Computer Programming (3 cr)**
(*Prerequisite: ELEC 116*) The student learns to program using the Pascal programming language. Emphasis is on structured, top-down program construction. Program requirements include input and output formats, arrays and files. A simulation project is required using graphics techniques. This course has three hours of theory and two hours of lab per week.

**IC 212L—Computer I/O and Architecture (6 cr)**
(*Prerequisite: IC 203L*) This course provides practical experience in microcomputer interfacing and architecture. Topics include interfacing projects involving keyboards, video monitors, UARTS, and analog to digital converters. A required microcontroller project is to be designed and constructed by each student. This course has five hours of lecture and five hours of laboratory per week.

**IC 213L—Control Circuits II (6 cr)**
(*Prerequisites: All Term III courses*) Topics include robotics, Pascal applications programming, transducer/computer interfacing projects and solid state motor controls. The PUMA industrial robot with VAL II control language and the Rhino robot are covered. A required systems project is to be designed and constructed by the student. This course has five hours of theory and five hours of lab per week.

**IC 214L—Instrumentation (6 cr)**
(*Prerequisites: IC 202L, IC 203L*) This course covers the theory of process control, voltmeters, oscilloscopes, linear and switching power supplies, signal generators and frequency counters. The accompanying lab involves instrument calibration and troubleshooting. The student learns proper soldering techniques. This course has five hours of theory and five hours of lab per week.

**ET 218—Pulse Power I (3 cr)**
(*Pre- or corequisite: Completion of Term 2*) The generation, transmission and measurement of high-voltage, pulsed power systems are studied. This course meets five hours per week.

**ET 220—Pulse Power II (3 cr)**
(*Prerequisite: ET 218*) This course includes analysis and design of transmission systems, vacuum systems, various high voltage and current monitors, probes, high speed data acquisition systems and control systems. All aspects of oil, deionized water and $SF_6$ gas are included. This course meets five hours per week.

**IC 296—Special Problems (1–3 cr)**
(*Corequisites: All Term IV courses and permission from the academic advisor*) The student is given a problem to investigate and solve. The student then designs the solution using a combination of techniques.

**LEOT 117L—Basic Machine Tool (2 cr)**
This course includes an introduction to basic machine shop practices. Instruction is provided in safety, hand tools, elementary lathe, mill and drill press. Students are introduced to basic programming concepts related to computer-numerical-control (CNC) turning and machining centers and computer-aided design (CAD systems.

*See also the common support course descriptions on pages 71–72.*

# Laser Electro-Optic Technology

### Associate in Applied Science Degree/ Certificate Program
### 4 Terms, Main and Montoya Campuses

The technology of lasers and electro-optics requires electronics, digital, laser and optics training for persons interested in a career in this rapidly growing industry. Lasers and electro-optic devices are used in a variety of areas including construction and excavation, welding and cutting operations, communications systems, laboratory testing and measurement, data processing, photography, medicine, military and space projects, and research and development.

The program's facilities include modern classrooms and laboratories containing state-of-the-art lasers, lenses, mirrors and analytical test equipment.

Students may graduate with either a certificate or associate degree.

The associate in applied science degree program provides graduates with additional science and technical skills for the support of engineering activities.

Certificate program graduates who want to earn a degree must fulfill the Arts & Sciences residency requirements and satisfy core requirements accord-

ing to the catalog in effect when the degree work was started.

Beginning students are admitted every other term. Terms I and II are taught at the Main Campus and Terms III and IV are taught at the Montoya Campus.

If a student takes MATH 100, it is recommended that the student also take the survey course for Laser Electro-Optic Technology from the Developmental Studies Department. A grade of C or better in each Laser Electro-Optic Technology course is required for either a certificate or degree.

There is a $10 supply fee for ELEC 116.

Note: Students seeking a certificate are required to take 7½-week human relations and communications courses or English 101 and Psychology 101 to fulfill graduation requirements. It is recommended that these courses be taken during the first term.

Entry into a course without the prerequisite may be allowed with the permission of the academic advisor.

## LASER ELECTRO-OPTIC TECHNOLOGY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| [1]BA | 111 | Communications (7½ weeks) | 2 |
| or | | | |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| [1]BA | 131 | Human Relations (7½ weeks) | 2 |
| or | | | |
| *PSY | 101 | General Psychology I | 3 |
| ELEC | 103L | Electronics Fundamentals | 9 |
| ELEC | 104 | Electronics Mathematics | 3 |
| ELEC | 105L | Digital Circuits | 3 |
| *ENG | 119 | Technical Communications | 3 |
| *MATH | 162 | Calculus I | 4 |
| or | | | |
| *MATH | 180 | Elementary Calculus | 3 |
| *Term II* | | | |
| ELEC | 114L | Semiconductor Devices | 6 |
| ELEC | 116 | Introduction to Microcomputers | 3 |
| ELEC | 117 | Introduction to Lasers | 3 |
| ELEC | 118L | Electromechanical Devices | 6 |
| *PHYS | 151/153L | Physics/Lab | 4 |
| or | | | |
| *PHYS | 160 | General Physics | 4 |
| *Term III* | | | |
| *CHEM | 111/112L | Introduction to Chemistry/Lab | 4 |
| or | | | |
| *CHEM | 121L | General Chemistry | 4 |
| LEOT | 204L | Electronic Circuits | 6 |
| LEOT | 205L | Advanced Laser Systems | 3 |
| LEOT | 206 | Optics | 6 |
| LEOT | 208L | Introduction to Microprocessors | 3 |
| *Term IV* | | | |
| LEOT | 212L | Vacuum System Technology | 1 |
| LEOT | 213L | Electronic Applications | 1 |
| LEOT | 214L | Advanced Microprocessors | 3 |
| LEOT | 217L | Advanced Laser Systems with Applications | 6 |
| LEOT | 218L | Laser Measurements | 3 |
| | | *Humanities/Social Science Elective | 3 |
| | | Total | 86–89 |
| *Support Courses* | | | |
| ELEC | 273L | Troubleshooting Techniques | 3 |
| ELEC | 276L | Soldering Techniques (7½ weeks) | 2 |
| ELEC | 277L | Industrial Systems (7½ weeks) | 3 |
| ET | 218 | Pulse Power I | 3 |
| ET | 220 | Pulse Power II | 3 |
| LEOT | 118L | Basic MachineTool | 2 |
| LEOT | 296 | Special Problems | 1–3 |

**Arts & Sciences courses required for associate degree. Course descriptions on pages 24–32.*
*[1]Course descriptions on page 71.*

## COURSE DESCRIPTIONS

**ELEC 103L—Electronics Fundamentals (9 cr)**
*(Recommended corequisite: ELEC 104 or strong mathematics background)* This course covers the basic concepts of DC and AC electronics with emphasis on Kirchhoff's Law, circuit analysis and component application with troubleshooting. Students obtain skills in constructing circuits from schematic diagrams and in the use of oscilloscopes, function generators and multimeters in laboratory exercises. This course has five hours of theory and 10 hours of lab per week.

**ELEC 104—Electronics Mathematics (3 cr)**
(*Prerequisite: MATH 100 or equivalent*) This course covers algebra and trigonometry with emphasis on DC and AC circuit analysis. This course meets five hours per week.

**ELEC 105L—Digital Circuits (3 cr)**
(*Recommended corequisite: ELEC 104 or strong mathematics background*) The fundamental concepts and applications of digital logic circuits are covered. Number systems and arithmetic operations are studied. Boolean algebra is applied to combinational logic. The basic logic gates and MSI and LSI circuits are used to develop operational digital circuits. This course has three hours of theory and two hours of lab per week.

**ELEC 114L—Semiconductor Devices (6 cr)**
(*Prerequisites: ELEC 103L, ELEC 104*) This course covers the study of semiconductor devices, diodes, transistors, op amps and JFETS, and their application in simple power supplies and amplifiers. Students obtain skills in constructing, analyzing and troubleshooting semiconductor circuits. This course has five hours of theory and five hours of lab per week.

**ELEC 116—Introduction to Microcomputers (3 cr)**
(*Prerequisites: Completion of Term 1*) This course covers microcomputer architecture, MS-DOS, word processing, digital and analog circuit analysis software, computer assisted drafting and an introduction to computer programming. This course has three hours of theory and two hours of lab per week.

**ELEC 117—Introduction to Lasers (3 cr)**
(*Prerequisites: ELEC 103L, ELEC 104*) This course introduces the student to the basic operation of the laser. The helium neon laser is used to discuss the nature of light, laser operation and laser safety. This course has three hours of theory and two hours of lab per week.

**ELEC 118L—Electromechanical Devices (6 cr)**
(*Prerequisites: Completion of Term 1*) This course covers theory and application of mechanical devices and their control circuits. Topics include hydraulics, pneumatics, vacuum, AC and DC motors, stepper motors and servomechanisms. Students obtain skills in the assembly, operation and troubleshooting of small-scale electromechanical systems. This course has five hours of theory and five hours of lab per week.

**ELEC 273L—Troubleshooting Techniques (3 cr)**
(*Prerequisites: ELEC 114L, ELEC 118L*) Students learn systems analysis of various electronic equipment. Emphasis is on locating problems. The course includes theoretical work to complement the laboratory assignments. This course has two hours of theory and three hours of lab per week.

**ELEC 276L—Soldering Techniques (7½ weeks) (2 cr)**
Students use a top repair center to learn high-reliability soldering and desoldering techniques. Nondestructive printed circuit board repairs and component replacement techniques also are used. This course has one hour of theory and four hours of lab per week.

**ELEC 277L—Industrial Systems (3 cr)**
(*Prerequisites: ELEC 114L, ELEC 118L*) A plasma etcher is used to introduce students to industrial systems. By analyzing the machine's subsystems and how they interact, students troubleshoot for solutions to equipment and process problems. This course has two hours of theory and three hours of lab per week.

**ET 218—Pulse Power I (3 cr)**
(*Prerequisite: Completion of Term 2*) The generation, transmission and measurement of high-voltage, pulsed power systems are studied. This course meets five hours per week.

**ET 220—Pulse Power II (3 cr)**
(*Prerequisite: ET 218*) This course includes analysis and design of transmission systems, vacuum systems, various high voltage and current monitors, probes, high speed data acquisition systems and control systems as it relates to pulsed power systems. All aspects of oil, deionized water and $SF_6$ gas are included. This course meets five hours per week.

**LEOT 118L—Basic Machine Tool (2 cr)**
This course includes an introduction to basic machine shop practices. Instruction is provided in safety, hand tools, elementary lathe, mill and drill press. Students are introduced to basic programming concepts related to computer-numerical-control (CNC) turning and machining centers and computer-aided-design (CAD) systems.

**LEOT 204L—Electronic Circuits (6 cr)**
(*Prerequisite: ELEC 114L*) This course provides a study of multiple class amplifier circuits, oscillator, signal-conditioning, modulation including receiver circuits, and operational amplifiers and A/D, D/A circuits. Students develop, analyze and troubleshoot these circuits in laboratory exercises. This course has six hours of theory and four hours of lab per week.

**LEOT 205L—Advanced Laser Systems (3 cr)**
(*Prerequisite: ELEC 117*) This course covers the basics of theory and operation of solid state, ion gas, molecular gas and semiconductor lasers. Laboratory experiments stressing safety, accuracy and technical writing skills are performed. This course has three hours of theory and two hours of lab per week.

**LEOT 206—Optics (6 cr)**
(*Prerequisite: ELEC 117*) Principles of geometric and wave optics are studied. Lenses, windows, mirrors and prisms are used to demonstrate imaging, interference and diffraction concepts. Filters, gratings and polarizers also are studied. This course has six hours of theory and four hours of lab per week.

**LEOT 208L—Introduction to Microprocessors (3 cr)**
(*Prerequisite: ELEC 116*) This course covers the architecture, programming, input/output and applications of a microprocessor. This course has three hours of theory and two hours of lab per week.

**LEOT 212L—Vacuum System Technology (1 cr)**
(*Prerequisite: ELEC 118L*) This course examines the various types of vacuum equipment used in industry. Laboratory work includes the assembly, maintenance and leak detection of various systems. This course has one hour of theory and one hour of lab per week.

**LEOT 213L—Electronic Applications (1 cr)**
(*Prerequisite: LEOT 204L*) Linear integrated circuits are studied with emphasis on applications in instrumentation, signal generation active filters and control circuits. Power supplies are introduced. This course has 1½ hours of theory and 1¼ hours of lab per week.

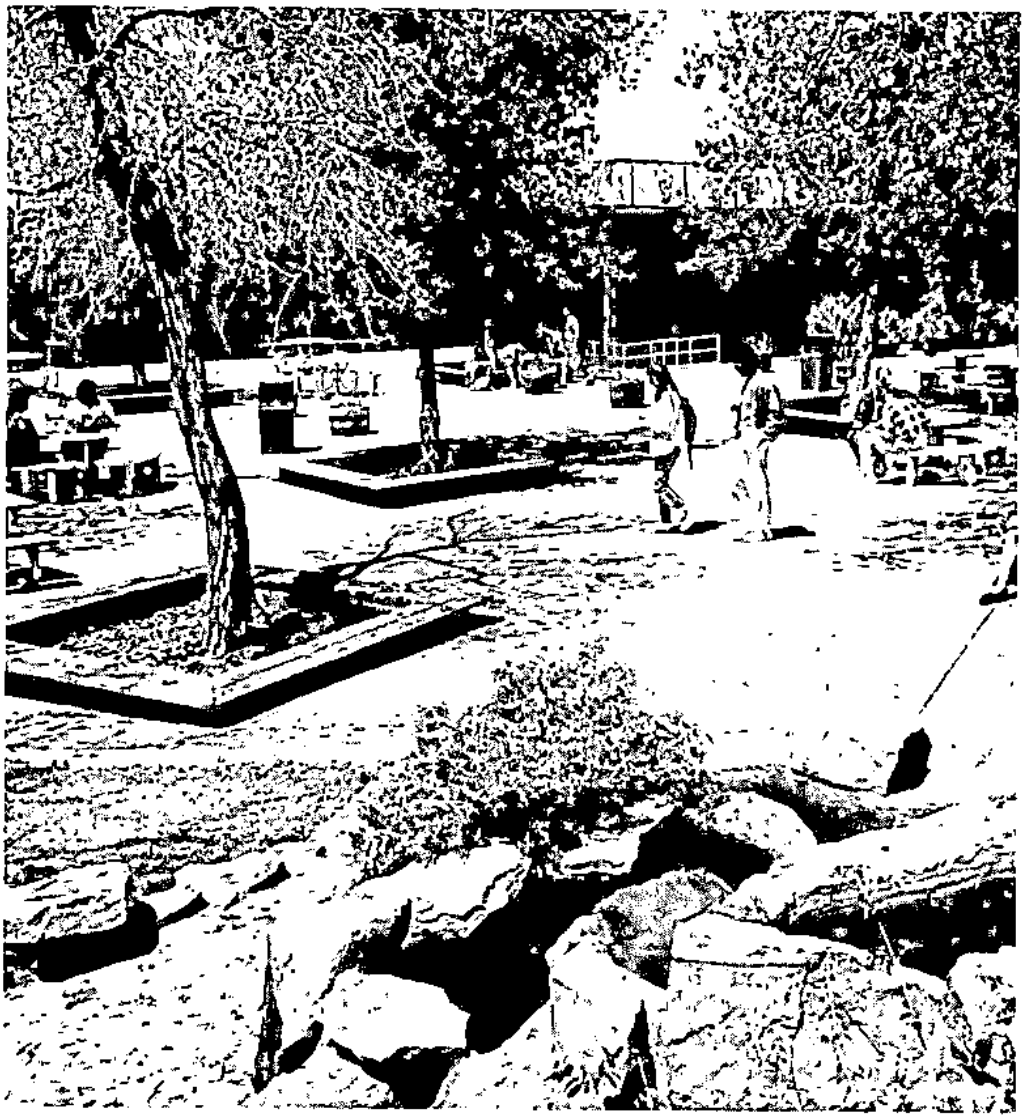
**LEOT 214L—Advanced Microprocessors (3 cr)**
(*Prerequisite: LEOT 208L*) A system of digital circuits is studied using a microprocessor. Interfacing to various devices is emphasized. This course has three hours of theory and two hours of lab per week.

**LEOT 217L—Advanced Laser Systems with Applications (6 cr)**
(*Prerequisites: LEOT 205L, LEOT 206*) Students perform experiments using fiber optics, A-O Q switch, dye cell, spectrum analyzer and A-O modulator. Electronic instruments are studied for correct usage of application. Students are required to write a technical paper on a topic in the laser electro-optic field. This course has five hours of theory and five hours of lab per week.

**LEOT 218L—Laser Measurements (3 cr)**
(*Corequisite: LEOT 217L*) Detection of radiation is covered. Various devices—calorimeters, photo-multiplier tubes, semiconductor diodes and pyroelectric detectors—and interferometric measurements also are studied. This course has three hours of theory and two hours of lab per week.

**LEOT 296—Special Problems (1–3 cr)**
(*Corequisites: All Term IV courses and permission from the academic advisor*) The student is given a problem to investigate and solve. The student then designs the solution using a combination of techniques.

*See also the common support course descriptions on pages 71–72.*



# TRADES DEPARTMENT

Trades is the largest skill cluster at T-VI. Most classes meet on the Main Campus in classrooms; indoor, outdoor and off-campus lab spaces; and live work areas. The Commercial Printing program is located at the Montoya Campus. Admission information is available at either campus.

Most Trades programs accept new students at the beginning of each term. Each applicant has an interview with an admission counselor and also may be interviewed by the program counselor during the admission process.

Trades students must furnish their own shop clothes that must be safe and appropriate for their particular programs. All students, instructors, instructional aides and visitors must wear approved safety glasses or goggles which conform to ANSI 287.1 in classes where they are required.

Students are encouraged to participate in T-VI's chapter of the Vocational Industrial Clubs of America (VICA). VICA activities are an integral part of the Trades curriculum.

## SPECIFIC ENTRANCE REQUIREMENTS

All Trades programs have in common the following entrance requirements: be able to lift materials and equipment weighing 50 pounds and be free of allergies or health conditions which cannot be controlled and would endanger the student's or others' safety. All students enrolling in certificate programs must take the admissions placement advisement tests. Students who only have a math deficiency may take program courses in the major while taking developmental math courses. Students having reading deficiencies may not enroll in any program courses in the major until the reading deficiency has been eliminated. Students having acceptable previous college course work or minimum ACT scores are not required to take the admissions placement tests.

Specific requirements of individual programs are as follows:

**AIR CONDITIONING, HEATING AND REFRIGERATION:** Must be free of chronic respiratory diseases and allergies to sheet metal fluxes and metals, and have normal color differentiation.

**CARPENTRY:** Must be free of chronic wood or wood product allergies.

**COMMERCIAL PRINTING:** Must be free of chronic allergies to lubricants, solvents, inks and photographic chemicals, and have normal color differentiation with near- and far-point depth perception.

**CRIMINAL JUSTICE:** Must be a high school graduate or possess a GED. Must purchase all textbooks and supplies for the program.

**CULINARY ARTS:** Must be free of chronic allergies to detergents and soap. *Health Requirement:* To enroll in this field, it is necessary to present a certificate to T-VI stating that the student is free from tuberculosis in a transmissible form. The certificate must be obtained from and signed by a licensed physician no more than 90 calendar days before the start of classes.

**ELECTRICAL TRADES:** Must have normal color differentiation.

**ENVIRONMENTAL PROTECTION TECHNOLOGY:** Must purchase all textbooks and supplies for the program.

**FOOD SERVICE MANAGEMENT:** Must purchase textbooks.

**MACHINE TOOL TECHNOLOGY:** Must be free of chronic respiratory diseases and allergies to oils, solvents and cutting fluids; be able to stand on concrete floors for long periods of time; and have depth perception correctable in both eyes.

**PLUMBING:** Must be free of chronic respiratory diseases and allergies to plumbing fluxes, oils, glues and plastic compounds.

**TRANSPORTATION TRADES:** Must be free of chronic respiratory diseases and allergies to fuels and solvents. A valid driver's license and clean driving record are required by most employers.

**TRUCK DRIVING:**

—Must not have been convicted of or forfeited bond for more than four moving violations in the past three years.
—Must not have more than one at fault, preventable accident in the past three years.
—Must not have been convicted of or forfeited bond for DWI or reckless driving.
—Must have a valid license authorizing operation of vehicles that he/she is to drive.
—Must be able to pass a physical examination as set forth in Section 391.42 of the Federal Motor Carrier Safety Regulations.
—Must be at least 23 years old.

Applicants are required to provide a certified copy of their New Mexico driving record for the past five years and a medical examiner's certificate signed by a physician.

**WELDING:** Must be free of chronic respiratory diseases and have depth perception correctable in both eyes.

***SAFETY NOTE:*** *It can be dangerous to wear contact lenses in any area where there are fumes from chemicals, solvents and gases. Affected students should plan to wear regular eyeglasses in classes where such hazards exist. Students who habitually endanger themselves or others may be suspended from T-VI.*

## PREREQUISITE REQUIREMENTS

Students must earn a minimum grade of C to meet all course prerequisite requirements.

## GRADUATION REQUIREMENTS

Students must earn a minimum 2.0 grade point average and maintain a minimum grade of C in all required vocational courses.

### SUPERVISED WORK EXPERIENCE

Supervised work experience is for students who have acquired most of the skills and work attitudes needed to succeed in an entry-level job. Students may apply for this option during the final term.

This on-the-job experience is a training plan developed by the cooperating employer and T-VI instructional staff. The student must obtain the approval of the instructor, advisor and Trades Department dean, and have an exit interview with the department counselor prior to beginning supervised work experience.

*The supervised work experience option may not qualify students for Veterans Administration benefits or other student financial aid. It is not an option for associate degree programs.*

# APPRENTICESHIP PROGRAMS

## Commercial Carpentry Apprenticeship

**8 Terms, Main Campus**

The Commercial Carpentry Apprenticeship program for persons currently employed in the industry is offered in conjunction with the Rio Grande Chapter of Associated Builders and Contractors Inc. (ABC).

The four-year program combines on-the-job experience with classroom instruction and provides the opportunity for qualified participants to become journeymen.

There is a $20 registration fee each term. Students must purchase textbooks and instructional materials through the local ABC chapter.

### COURSE DESCRIPTION

**CEAP 199—Commercial Carpentry Apprenticeship (24 cr)**
(*Prerequisite: Current full-time employment in the carpentry industry*) This course consists of 8610 hours of which 8000 hours are supervised on-the-job training with experienced journeymen and 610 hours are related classroom instruction at T-VI. The classroom instruction covers orientation, safety, shop and trade math, commercial carpentry process for shop tools and equipment, supplies and materials, building systems, blueprint reading, concrete, specifications and code interpretation.

## Culinary Apprenticeship

**9 Terms, Main Campus**

The Culinary Apprenticeship program is offered for persons currently employed full time in the cooking industry.

The three-year program combines on-the-job experience with classroom instruction and results in certified cook skill levels. Beginning students are admitted each term as space permits.

There is a $20 registration fee each term. Students must purchase a special textbook and instructional materials through the local chapter of the American Culinary Federation.

### COURSE DESCRIPTION

**CUAP 199—Culinary Apprenticeship (27 cr)**
(*Prerequisite: Current full-time employment in the cooking industry*) This course consists of 6000 instructional hours of which 400 hours are theory taught at T-VI and 5600 hours are supervised work experience in a full-time cooking job secured before entering the class. Theory covers culinary history, garde manger (food decorating), food management techniques and front-of-the-house personnel use. A three-step written and practicum final exam, administered in conjunction with the New Mexico Chefs and Cooks Assn., is required to graduate.

## Electrical Trades Apprenticeship

**8 Terms, Main Campus**

The Electrical Trades Apprenticeship program, for persons currently employed full time in the electrical industry, is offered in conjunction with the Independent Electrical Contractors (IEC).

The four-year program combines on-the-job experience with classroom instruction and provides the opportunity for participants to obtain New Mexico journeyman licenses.

There is a $20 registration fee each term. Students must purchase books and instructional materials through the IEC office.

### COURSE DESCRIPTION

**ETAP 199—Electrical Trades Apprenticeship (24 cr)**
*(Prerequisite: Current full-time employment in the electrical trades industry)* This course consists of 8600 hours of which 8000 hours are supervised on-the-job training with electrical journeymen and 600 hours are related classroom instruction at T-VI. The classroom instruction covers safety, electrical theory, blueprint reading and layout, National Electrical Code interpretation, tool usage and motor controls.

## Plumbing Apprenticeship

**8 Terms, Main Campus**

The Plumbing Apprenticeship program, for persons currently employed full time in the mechanical trades (plumbing) industry, is offered in conjunction with the Rio Grande Chapter of Associated Builders and Contractors Inc. (ABC).

The four-year program combines on-the-job experience with classroom instruction and provides the opportunity for qualified participants to become journeymen.

There is a $20 registration fee each term. Students must purchase textbooks and instructional materials through the local ABC chapter.

### COURSE DESCRIPTION

**PLAP 199—Plumbing Apprenticeship (24 cr)**
*(Prerequisite: Current full-time employment in the plumbing industry)* This course consists of 8610 hours of which 8000 hours are supervised on-the-job training with experienced plumbing journeymen and 610 hours are related classroom instruction at T-VI. The classroom instruction covers safety, shop and trade math, plumbing processes, blueprint reading and mechanical code (plumbing) interpretation.

## Sheet Metal Apprenticeship

**8 Terms, Main Campus**

The Sheet Metal Apprenticeship program, for persons currently employed full time in the sheet metal industry, is offered in conjunction with the Rio Grande Chapter of Associated Builders and Contractors Inc. (ABC).

The four-year program combines on-the-job experience with classroom instruction and provides the opportunity for participants to obtain New Mexico journeyman licenses.

There is a $20 registration fee each term. Students must purchase textbooks and instructional materials through the local ABC chapter.

### COURSE DESCRIPTION

**SMAP 199—Sheet Metal Apprenticeship (24 cr)**
*(Prerequisite: Current full-time employment in the sheet metal industry)* This course consists of 8610 hours of which 8000 hours are supervised on-the-job training with experienced sheet metal journeymen and 610 hours are related classroom instruction at T-VI. The classroom instruction covers safety, shop and trade math, sheet metal processes for shop machinery, triangulation layout, radial line layout, parallel line layout, blueprint reading, and Sheet Metal and Air Conditioning National Assn. (SMACNA) manuals.

# Support Courses

At least 12 students must sign up and instructional space must be available before a support course can be offered. As a result, support courses may be canceled because of low enrollment. Not all courses are offered each term. Most are offered only at the Main Campus.

| *Course* | | | *Cr Hrs* |
|---|---|---|---|
| ACHR | 170 | Pneumatic Control Systems | 3 |
| AUTC | 102 | Math/Basic Electricity | 3 |
| AUTC | 170 | Transportation Trades Machining | 3 |
| AUTC | 172 | Air Care Inspector | 1 |
| AUTC | 173 | Air Care Mechanic | 2 |
| [2]BA | 255 | Desktop Publishing | 3 |
| [2]BA | 256 | Employment Procedures and Techniques | 2 |
| CJ | 170 | First Aid and CPR | 1 |
| CJ | 296 | Special Topics | 1–6 |
| [1]CMTR | 100 | Communications for Trades | 3 |
| ELTR | 170 | Pole Climbing | 2 |
| EPT | 213 | Occupational Safety | 3 |
| FS | 296 | Special Topics | 1–6 |
| FSMG | 170 | Advanced Food Service Management | 3 |
| FSMG | 171 | Food Service Nutrition | 3 |
| [1]LANG | 061 | Writing Lab | 3 |
| MATT | 170 | Basic Tool/CNC | 3 |
| MATT | 171 | Precision Measurement | 3 |
| MATT | 172 | Mechanical Drawing for Metal Trades | 3 |
| PLMB | 170 | Energy Management/Solar Applications | 3 |
| PLMB | 172 | Backflow Prevention | 3 |
| PLMB | 174 | Heating Control Circuitry | 3 |
| [1]SCIE | 011 | Introduction to Physics | 3 |
| [1]SCIE | 013 | Thinking Strategies | 3 |
| WELD | 170 | Welding Skills Improvement | 3 |
| WELD | 171 | Advanced Welding Skills Improvement | 3 |
| WELD | 296 | Welding Special Topics | 1–2 |

[1]*See Developmental Studies Department, page 36, for course descriptions.*
[2]*See Business Occupations Department, page 45, for course descriptions.*

## COURSE DESCRIPTIONS

**ACHR 170—Pneumatic Control Systems (3 cr)**
Basic control system components and diagrams are included. Emphasis is on the installation and calibration of typical pneumatic control systems used for environmental control. This course meets five hours per week for 15 weeks.

**AUTC 102—Math/Basic Electricity (3 cr)**
The student learns and applies basic math principles as they relate to measuring tools, equipment, graphs and schematics. The theory of mechanical power, basic electricity principles, related terminology and electrical component identification also are covered. An introduction to diagnostic equipment, testing procedures and theory related to heavy equipment, electrical systems, troubleshooting and repair procedures is included. This course meets five hours per week for 15 weeks.

**AUTC 170—Transportation Trades Machining (3 cr)**
This course introduces basic machine shop practices particularly as they relate to the auto diesel mechanic. Instruction is provided in safety, hand tools, elementary lathe, mill and drill press. Emphasis is on tapping, rethreading, broken stud removal, thread inserts, shaft straightening, torque wrenches, fasteners, sized nuts and chisel use. This course meets five hours per week for 15 weeks.

**AUTC 172—Air Care Inspector (1 cr)**
This course provides the training required for mechanics to become certified air care inspectors by the City of Albuquerque under their Vehicle Pollution Management program. This course will cover the city and federal rules and regulations governing air pollution, emissions inspections and approved manufacturers' analyzers. This course meets four hours per week for seven weeks.

**AUTC 173—Air Care Mechanic (2 cr)**
(*Prerequisite: Successful completion of AUTC 172*) This course covers the rules and regulations governing air pollution, emissions inspections, approved manufacturers' analyzers, waivers, extensions, extended warranties and emission control devices and equipment. This course meets six and one-half hours per week for seven and one-half weeks.

**CJ 170—First Aid and CPR (1 cr)**
This course presents training in the Red Cross Standard First Aid System and cardiopulmonary resuscitation for which Red Cross certification is issued upon successful completion. This is an introductory course stressing immediate care and recognition of life threatening injuries and illnesses. Emphasis is on emergency temporary help in order to preserve life. This course meets two hours per week for 15 weeks.

**CJ 296—Special Topics (1–6 cr)**
This course includes an in-depth study of problems and the advanced techniques that criminal justice experts use in responding to them.

**ELTR 170—Pole Climbing (2 cr)**
Instruction is provided in safety, proper use of equipment, climbing and maneuvering techniques up to the 18-foot level on unstepped poles, and the proper use of ladders on poles and span lines. This course meets four hours on Saturdays for 15 weeks.

**EPT 213—Occupational Safety (3 cr)**
Introduction is provided to a variety of topics in current safety research and practices. Students are instructed in safety principles and standards. Basic safety concepts and monitoring procedures are emphasized culminating in laboratory and classroom inspection visits and projects that actively contribute to the T-VI safety program effort. An introduction to the Occupational Safety and Health Act (OSHA) regulations is included. This course meets three hours per week for 15 weeks.

**FS 296—Special Topics (1–6 cr)**
This course includes an in-depth study of problems and the advanced techniques that firefighter experts use in responding to them.

**FSMG 170—Advanced Food Service Management (3 cr)**
This course emphasizes the use of computers in the food service industry. The CBORD Menu Development System is used to introduce the student to key analytical reports, interactive menu planning, and cost-oriented and margin-operated operations. This course meets five hours per week for 15 weeks.

**FSMS 171—Food Service Nutrition (3 cr)**
This course is a study of food and nutrition as they pertain to the food service industry. The student is introduced to the digestive system, diet control, and vitamins and nutrients. This course meets five hours per week for 15 weeks.

**MATT 170—Basic Tool/CNC (3 cr)**
Instruction is provided in safety, hand tools, elementary lathe, mill and drill press. Installation and selection of fasteners and sheet metal fabrication are included. Culminating project is a design problem fabrication of an instrumentation package (power supply). Students are introduced to basic programming concepts related to computer-numerical-control (CNC) turning and machining centers and computer-aided-design (CAD) systems. This course meets five hours per week for 15 weeks.

**MATT 171—Precision Measurement (3 cr)**
This course is an introduction to basic measurement principles and techniques. Students are instructed in the care, calibration, uses and applications of outside micrometers, inside micrometers, depth micrometers, vernier calipers, indicators and other measuring equipment specific to their majors. This course meets five hours per week for 15 weeks.

**MATT 172—Mechanical Drawing for Metal Trades (3 cr)**
This course provides instruction in the basic techniques of mechanical drawing. The class includes sketching, three-view orthographic projection, sectional views, auxiliary views, basic drafting math, geometric tolerancing, welding symbols and welding layout. This course meets five hours per week for 15 weeks.

**PLMB 170—Energy Management/Solar Applications (3 cr)**
This course is for students interested in management of a residential energy package. Instruction is provided in how life styles, design and orientation conserve natural resources. Emphasis is on the selection, installation, maintenance and repair of solar equipment as related to heating water and air. This course meets five hours per week for 15 weeks.

**PLMB 172—Backflow Prevention (3 cr)**
This course teaches the student to identify, test, troubleshoot and repair backflow prevention assemblies. A minimum of 50 percent of class time is spent in the lab working with assemblies. Successful completion of this course qualifies the student to become a certified backflow prevention assembly tester. This course meets five hours per week for 15 weeks.

**PLMB 174—Heating Control Circuitry (3 cr)**
This course includes installation and troubleshooting of heating control circuits. Control theory, terminology and symbols are covered. Instructional emphasis is on electrical control devices from various manufacturers. Also included are the reading and developing of wiring diagrams and line schematics. This course meets five hours per week for 15 weeks.

**WELD 170—Welding Skills Improvement (3 cr)**
This class includes instruction in safety practices, general tools and equipment, sources of heat, operational procedures, metals and their properties, and applications of oxyacetylene and arc welding. Instruction is geared for the specific needs of all majors. This course meets five hours per week for 15 weeks.

**WELD 171—Advanced Welding Skills Improvement (3 cr)**
This course provides instruction in advanced welding processes. Mig and tig welding and other processes such as plasma arc, resistance, flux core, carbon and submerged arc welding are included. This course meets five hours per week for 15 weeks.

**WELD 296—Welding Special Topics (1–2 cr)**
This flexible course is designed to enable students currently in the welding trade to pursue studies in specialized needs with unique goals. This class also may be taken as an independent or guided study to be used as a refresher course or to sharpen skills prior to certification or recertification exams. Hours are by arrangement.

# Air Conditioning, Heating and Refrigeration

**Certificate Program**
**3 Terms, Main Campus**

The Air Conditioning, Heating and Refrigeration program prepares students for entry into the installation, maintenance and service field. With on-the-job experience and field training, the graduate of this program should be able to advance quickly.

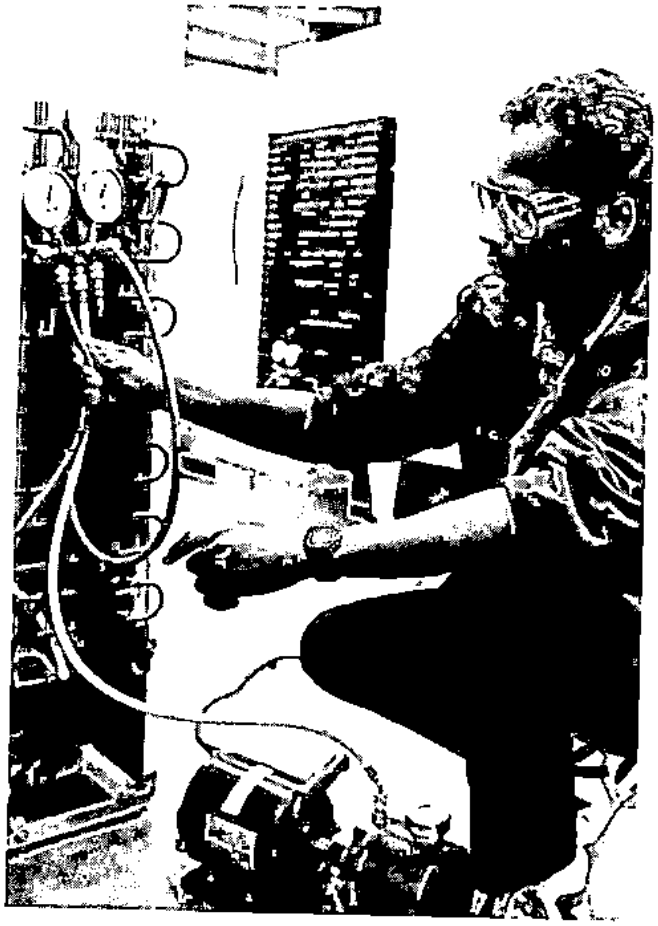
Training includes installing mechanical equipment, ductwork, piping and electrical controls; servicing various air conditioning, heating and refrigeration components; troubleshooting systems; and performing required preventive maintenance.

Most activities take place on campus, but some take place at off-campus building sites and are an integral part of the curriculum.

To earn a certificate, a student must complete successfully a total of 1275 instructional hours of which 720 are laboratory work and 555 are related theory.

A student may leave the program when a training objective is reached and receive a proficiency certificate detailing the skills mastered.

Eligible third-term students are encouraged to participate in the supervised work experience program.



Air Conditioning, Heating and Refrigeration students must pay an equipment fee of $90 before entering the first term, $70 before the second term and $70 before the third term.

## AIR CONDITIONING, HEATING AND REFRIGERATION PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| ACHR | 101L | Air Conditioning, Heating and Refrigeration Theory/Lab I | 12 |
| ACHR | 102 | Control Circuitry/Math I | 3 |
| *Term II* | | | |
| ACHR | 111L | Air Conditioning, Heating and Refrigeration Theory/Lab II | 12 |
| ACHR | 112 | Air Conditioning, Heating and Refrigeration Mathematics II | 3 |
| ACHR | 113 | Control Circuitry II | 3 |
| *Term III* | | | |
| ACHR | 201L | Air Conditioning, Heating and Refrigeration Theory/Control Circuitry Lab III | 9 |
| ACHR | 202L | Sheet Metal Theory/Lab | 9 |
| | | Total | 51 |

*Option*
Supervised Work Experience

*Support Courses*
See page 95.

## COURSE DESCRIPTIONS

**ACHR 101L—Air Conditioning, Heating and Refrigeration Theory/Lab I (12 cr)**
Students learn shop safety; basic tools and equipment; applicable laws of physics and chemistry; electrical circuits; electric meters; test and measuring equipment; and installation, maintenance and service procedures for the mechanical refrigeration cycle and components. This course meets 20 hours per week for 15 weeks.

**ACHR 102—Control Circuitry/Math I (3 cr)**
This course is designed to lay the groundwork required for diagnosis and service of refrigeration and electrical equipment with emphasis on DC circuits as applied to Ohm's Law. Students are taught algebra as applied to AC electricity. This course meets five hours per week for 15 weeks.

**ACHR 111L—Air Conditioning, Heating and Refrigeration Theory/Lab II (12 cr)**
(*Prerequisites: All Term I courses or equivalent*) Instruction is in the installation, maintenance and service of residential air conditioning, heating and refrigeration systems. This course meets 20 hours per week for 15 weeks.

**ACHR 112—Air Conditioning, Heating and Refrigeration Mathematics II (3 cr)**
(*Prerequisite: ACHR 102 or equivalent*) This course covers calculations required for residential heating and cooling system design including equipment sizing, duct sizing and layout. This course meets five hours per week for 15 weeks.

**ACHR 113—Control Circuitry II (3 cr)**
(*Prerequisite: ACHR 102 or equivalent*) This course includes the design, installation and troubleshooting of air conditioning, heating and refrigeration control circuits. Emphasis is on electrical control devices from various manufacturers. This course meets five hours per week for 15 weeks.

**ACHR 201L—Air Conditioning, Heating and Refrigeration Theory/Control Circuitry Lab III (9 cr)**
(*Prerequisites: ACHR 102, ACHR 111L or equivalent*) The installation, maintenance and service of commercial air conditioning, heating and various refrigeration systems are covered, along with multizone heating/cooling, chilled water and hot water systems. More advanced control theory and terminology also are covered. Emphasis is on electrical, pneumatic and solid state circuitry as well as electronic and electric control devices, their installation and service. This course meets 15 hours per week for 15 weeks.

**ACHR 202L—Sheet Metal Theory/Lab (9 cr)**
Instruction is provided in sheet metal processes performed with hand, bench, cutting and layout tools; safety; care of tools and equipment; use of materials and supplies; straight pattern development and fabrication. Lab projects are oriented to typical heating and ventilation installations. Study of the design, layout and application of air distribution duct systems for air conditioning also is included. This course meets 15 hours per week for 15 weeks.

TVI

# Automotive Body Repair

**Certificate Program**
**3 Terms, Main Campus**

The Automotive Body Repair program prepares students for entry-level employment repairing collision damage on passenger and commercial vehicles. Proper safety procedures, work ethics and correct selection and use of tools and equipment are stressed. This program does not accept new students every term.

The program is designed to allow a student to enter the industry at three separate levels. Upon successful completion of Automotive Body Repair Theory/Lab I, the student may receive a detailing proficiency certificate and obtain employment detailing and preparing vehicles for collision/refinishing repairs. Completion of all courses through the second term gives the student additional skills in welding, collision repair procedures and comprehensive refinishing techniques. The student may then receive a basic refinishing proficiency certificate and obtain employment as a painter's helper. The third term upgrades the student's abilities to repair and refinish major collision damage using state-of-the-art pulling and measuring equipment. During the third term, students have the option to apply their skills in a supervised work experience program with employers.

To earn an Auto Body Repair certificate, a student must successfully complete a total of 1125 instructional hours of which 825 are laboratory work and 300 are related theory.

Students must pay a $100 equipment fee before entering the first term, $75 before the second term and $50 before the third term.

## AUTOMOTIVE BODY REPAIR PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| AUBO | 101L | Automotive Body Repair Theory/Lab I | 12 |
| AUBO | 102 | Math/Basic Electricity | 3 |
| | | *Detailing Proficiency Certificate* | |
| *Term II* | | | |
| AUBO | 111L | Automotive Body Repair Theory/Lab II | 15 |
| | | *Basic Refinishing Proficiency Certificate* | |
| *Term III* | | | |
| AUBO | 201L | Automotive Body Repair Theory/Lab III | 15 |
| | | Total | 45 |
| | | *Automotive Body Repair Certificate* | |

*Option*
Supervised Work Experience

*Support Courses*
See page 95.

## COURSE DESCRIPTIONS

**AUBO 101L—Automotive Body Repair Theory/Lab I (12 cr)**
The student is introduced to all phases of the auto collision industry including safety procedures, terminology, fasteners, body and frame construction, tools, equipment, minor damage repair, basic refinishing techniques, detailing, and understanding estimates. Students learn how to set up and operate oxy-acetylene and shielded metal-arc welding equipment. The procedures for cutting, welding and brazing automotive sheet metal are covered. This course meets 20 hours per week for 15 weeks.

**AUBO 102—Math/Basic Electricity (3 cr)**
The student learns and applies basic math principles as they relate to measuring tools, equipment, graphs and schematics. The theory of mechanical power, basic electricity principles, related terminology, and electrical component identification also are covered. An introduction to diagnostic equipment, testing procedures and theory related to heavy equipment, electrical systems, troubleshooting and repair procedures is included. This course meets five hours per week for 15 weeks.

**AUBO 111L—Automotive Body Repair Theory/Lab II (15 cr)**
*(Prerequisites: All Term I courses or equivalent)* The student receives instruction in safety, body shop tools and equipment,

and removal and replacement of body parts and repair to cooling system. This course covers cleaning, sanding, masking, all phases of surface preparation, metal treatment, undercoats, and comprehensive refinishing systems; air conditioning servicing and repair, and instruction in basic metal arc welding. This course meets 25 hours per week for 15 weeks.

**AUBO 201L—Automotive Body Repair Theory/Lab III (15 cr)**

(*Prerequisites: All Term II courses or equivalent*) This course covers comprehensive metal repair, body panel replacement, sectioning, related electrical systems, corrosion protection, estimating techniques, and measuring and alignment procedures for under body, suspension, frame and body shell. The student performs a variety of refinishing jobs, gas metal arc, gas tungsten arc welding, plasma cutting and plastic welding, duplicating a modern auto collision production shop. This course meets 25 per week for 15 weeks.

# Automotive Technology

**Certificate Program**
**3 Terms, Main Campus**

The Automotive Technology program is designed to provide individuals with the skills needed to diagnose and repair mechanical problems on automobiles and light trucks. Proper safety procedures along with the correct use and selection of hand tools and test equipment is stressed. The program is designed to qualify the successful student as an entry-level general automobile technician. This program does not accept new students every term.

The employment outlook for qualified auto technicians is excellent. Employment opportunities include such positions as basic servicing, general mechanic, specialist, service writer, shop foreman, service manager, sales representative and service station attendant.

The program is designed to allow a student to enter the industry at three separate levels. Upon successful completion of Automotive Technology Theory/Lab I, the student may receive a basic auto servicing proficiency certificate and obtain employment servicing automobiles and performing brake system and suspension repair, front end alignment and engine repairs. Upon successful completion of Automotive Technology Theory/Lab I and Math/Basic Electricity, the student is eligible for Term II.

Completion of Term II gives the student additional skills with transmissions, drive trains and air conditioning. Upon completion of Automotive Technology Theory/Lab II, the student may receive a basic auto repair proficiency certificate and obtain employment performing minor repairs and servicing automobiles and light duty trucks. Upon successful completion of Automotive Technology Theory/Lab II and Transportation Electronics, the student is eligible for Term III.

Term III upgrades the student's abilities to diagnose and repair electrical systems including computer-controlled components. During Term III, students may have the option to apply their skills in a supervised work experience program with cooperating employers.

To earn an Automotive Technology certificate, a student must successfully complete a total of 1125 instructional hours of which 750 are laboratory work and 375 are related courses including theory.

Students must pay an equipment fee of $100 before entering the first term, $90 for the second term, and $90 for the third term.

## AUTOMOTIVE TECHNOLOGY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| AUTC | 101L | Automotive Technology Theory/Lab I | 12 |
| AUTC | 102 | Math/Basic Electricity | 3 |
| | | *Basic Auto Servicing Proficiency Certificate* | |
| *Term II* | | | |
| AUTC | 111L | Automotive Technology Theory/Lab II | 12 |
| AUTC | 113 | Transportation Electronics | 3 |
| | | *Basic Auto Repair Proficiency Certificate* | |
| *Term III* | | | |
| AUTC | 201L | Automotive Technology Theory/Lab III | 15 |
| | | Total | 45 |
| | | *Automotive Technology Certificate* | |

*Option*
Supervised Work Experience

*Support Courses*
See page 95.

## COURSE DESCRIPTIONS

**AUTC 101L—Automotive Technology Theory/Lab I (12 cr)**

This course is designed to teach the student the skills needed to perform common automotive service work. Inspection, repair and replacement of brakes; use of precision measuring tools; cooling, lubricating, ignition, fuel, emission and exhaust systems are covered. The course also provides the student with instruction on automotive chassis, steering, suspension systems, related hardware and wheel alignment. Basic internal combustion engine theory and the principles of basic engine overhaul are studied. This course meets 20 hours per week for 15 weeks.

**AUTC 102—Math/Basic Electricity (3 cr)**

This course teaches the student basic math principles as they relate to measuring tools, equipment, graphs and schematics. The theory of mechanical power, basic electricity principles, related terminology, and electronic component identification

also are covered. The students are introduced to diagnosis equipment testing procedures and theory related to automotive electrical systems troubleshooting and repair procedures. This course meets five hours per week for 15 weeks.

**AUTC 111L—Automotive Technology Theory/Lab II (12 cr)**

(*Prerequisites: AUTC 101L, AUTC 102 or equivalent*) This course covers diagnostic and repair procedures involving clutches, manually shifted and automatic transmissions, transaxles and differential units. Air conditioning diagnosis, testing, repair and servicing also are included. The entire drive train is covered. This course meets 20 hours per week for 15 weeks.

**AUTC 113—Transportation Electronics (3 cr)**

(*Prerequisites: AUTC 101L, AUTC 102 or equivalent*) This course provides the information required to test and replace malfunctioning electronic components. The theory of solid-state devices, basic principles of electronics, and interpretation of circuit diagrams are included. Signal tracing characteristics and the operation of semi-conduction diodes and rectifier circuits are covered. Lab experiments are conducted on full wave and voltage rectifiers, transistors, thyristors, integrated circuits, operational amplifiers, digital gates and timing circuits. This course meets five hours per week for 15 weeks.

**AUTC 201L—Automotive Technology Theory/Lab III (15 cr)**

(*Prerequisites: AUTC 111L, AUTC 113*) This course covers the theory, diagnosis and repair of electrical components, fuel systems, and heating and air conditioning systems. Students also learn to tune-up vehicles. Emission control standards and components are covered. This course meets 25 hours per week for 15 weeks.

# Baking

**Certificate Program**
**2 Terms, Main Campus**

This food service specialty prepares persons for jobs as bakers in restaurants, bake shops, bakeries and institutional kitchens such as schools or hospitals. Persons entering this field should be early risers since most baking begins early in the morning. This program does not accept new students every term.

Baking meets in a lab furnished with commercial equipment and display cases. The program's products are sold in the T-VI food service areas.

To earn a certificate, a student must complete successfully 750 instructional hours of which 525 are laboratory work and 225 are related theory.

Students may leave the program when a training objective is reached and receive a proficiency certificate detailing the skills mastered.

Baking students must pay an equipment fee of $100 before entering Term I and $30 for Term II.

(*Also see Food Service Management, page 108, and Quantity Food Preparation, page 111.*)

## BAKING PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| BKNG | 101L | Baking Theory/Lab I ..... | 12 |
| BKNG | 102 | Food Service Mathematics ..... | 3 |
| *Term II* | | | |
| BKNG | 111L | Baking Theory/Lab II ..... | 15 |
| | | Total ..... | 30 |

## COURSE DESCRIPTIONS

**BKNG 101L—Baking Theory/Lab (12 cr)**

Students learn fundamentals of mixing and processing the ingredients used in a variety of breads, sweet yeast dough products and specialties. Also included are care and use of equipment, bakery sanitation, proper use and storage of bakery ingredients, experiments with baking formulas, leavening agents and human relation skills. This course meets 20 hours per week for 15 weeks.

**BKNG 102—Food Service Mathematics (3 cr)**

Basic arithmetic for sales, portioning and pricing of food products is covered. Students also learn to use cash registers. This course meets five hours per week for 15 weeks.

**BKNG 111L—Baking Theory/Lab II (15 cr)**

(*Prerequisite: BKNG 101L*) This course continues the principles of Baking I with emphasis on baking chemistry and advanced production procedures. More study of international pastries and desserts is provided and cake decorating is covered. Supervisory management principles are included. This course meets 25 hours per week for 15 weeks.

# Carpentry

**Certificate Program**
**2 Terms, Main Campus**

The Carpentry program provides students with practical and realistic job skills to enter the construction industry. Classes meet on and off campus and in indoor and outdoor labs specifically designed for cabinetmaking and residential construction.

During the first term, the fundamentals of residential framing and tools of the trade are taught. In the second term, emphasis is on residential and light commercial work, maintenance and remodeling along with instruction on interior finish carpentry, basic construction and installation of cabinets and millwork.

To earn a framing proficiency certificate, a student must complete Term I which includes 375 instructional hours of which 225 are laboratory work and 150 are related theory, math and blueprint reading. Continuing students can earn a Carpentry certificate by successfully completing Term II which includes 375 hours of lab and related instruction.

A student may leave the program when a training objective has been reached and receive a proficiency certificate detailing the skills mastered.

Carpentry students must pay an equipment fee of $100 before entering the first term and an additional $70 for the second term.

## CARPENTRY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| CARP | 101L | Carpentry Theory/Lab I..... | 12 |
| CARP | 102 | Carpentry Math/Blueprint Reading I | 3 |
| | | *Framing Proficiency Certificate* | |
| *Term II* | | | |
| CARP | 111L | Carpentry Theory/Lab II..... | 12 |
| CARP | 112 | Carpentry Math/Blueprint Reading II..... | 3 |
| | | Total ..... | 30 |
| | | *Carpentry Certificate* | |

*Support Courses*
See page 95.

## COURSE DESCRIPTIONS

**CARP 101L—Carpentry Theory/Lab I (12 cr)**
Instruction is provided in hand and power tools, site layout and foundations, rough framing, roof framing, structural shell basics, stair construction, exterior finish and safety. This course meets 20 hours per week for 15 weeks.

**CARP 102—Carpentry Mathematics/Blueprint Reading I (3 cr)**
This course provides instruction in whole numbers, combining numbers, lumber sizing, scaling, centering and triangle theory. Instruction in the interpretation of elevation drawings and floor plans, symbols and notations, dimensions and structural information is included. Students are introduced to material estimation. This course meets five hours per week for 15 weeks.

**CARP 111L—Carpentry Theory/Lab II (12 cr)**
*(Prerequisite: CARP 101L or equivalent)* This course is a continuation of CARP 101L with the addition of finish carpentry, basic construction and installation of cabinets and millwork. Maintenance, remodeling, concrete finishing and light commercial construction are emphasized. This course meets 20 hours per week for 15 weeks.

**CARP 112—Carpentry Mathematics/Blueprint Reading II (3 cr)**
*(Prerequisite: CARP 102 or equivalent)* This course includes an introductory study of blueprint applications to residential homes, multiple family dwellings and commercial buildings. Instruction also is provided in the use of rules and formulas for material estimating, volume measure, ratio and proportion. This course meets five hours per week for 15 weeks.

# Commercial Printing

**Certificate Program**
**2 Terms, Montoya Campus**

This program teaches entry-level skills for jobs in the offset printing industry or in-plant print/duplication shops. This program does not accept new students every term.

The lab contains computers, phototypesetters, paste-up and stripping tables, process cameras, plate makers, offset duplicators and presses, paper cutters, folder and bindery machines, and other equipment used in the industry.

Instructional units have specific prerequisites as follows: typesetting—typing skill of 35 words per minute; proofreading—good spelling/grammar; paste-up/layout—visual coordination, color perception and measurement skills; camera—allergy free and night vision; press—allergy free, depth and color perception, mechanical aptitude; bindery—mechanical aptitude, lifting ability.

To earn a certificate, a student must complete successfully a total of 825 instructional hours of which 600 are laboratory work and 225 are related theory.

When students leave the program, they receive a proficiency certificate listing the skills mastered.

Commercial Printing students must pay a personal equipment fee of $30 before entering the first term.

## COMMERCIAL PRINTING PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| CMPR | 101L | Commercial Printing Theory/Lab I.. | 15 |
| *Term II* | | | |
| CMPR | 111L | Commercial Printing Theory/Lab II. | 18 |
| | | Total ..... | 33 |

## COURSE DESCRIPTIONS

**CMPR 101L—Commercial Printing Theory/Lab I (15 cr)**
This course covers safety of tools, equipment, solvents and chemicals; use of tools and equipment; design; composition, layout and paste-up; proofs and proofreading; basic photo typesetting; papers and inks; basic setup and operation of offset duplicators and presses; bindery processes; and quality control. Instruction also is provided in job analysis, cost control, estimating and production work flow. Basic arithmetic as it applies to the printing trade for measurements, ink and chemical formulas, paper cuts and job pricing is included. This course meets 25 hours per week for 15 weeks.

**CMPR 111L—Commercial Printing Theory/Lab II (18 cr)**
(*Prerequisite: CMPR 101L or equivalent*) Emphasis is on advanced processes in all areas of the lab; computer composition; imposition; duotone and special effect screens; multicolor register and special penalty stock printing; troubleshooting techniques; computer estimating; production control and legal considerations. The course continues special principles and trade math as they relate to individual work stations. This course meets 30 hours per week for 15 weeks.

# Criminal Justice

**Associate in Applied Science Degree/ Certificate Program**
**4 Terms, Main Campus**

This program provides basic instruction in the field of criminal justice. Students may earn either a certificate or an associate degree.

To earn a certificate, a student must successfully complete 35 credit hours—26 occupational core curriculum hours, English 101, Math 120 and Sociology 111.

Students who have already received a certificate from an approved New Mexico law enforcement academy with which T-VI has an articulation agreement are given block credit for the 26 credit hours of occupational core curriculum. These students may enter the degree program after meeting T-VI admission requirements. Credit for the occupational core curriculum will be posted at the completion of all courses in the degree program.

To earn an Associate in Applied Science Degree in Criminal Justice, a student must successfully complete 68 credit hours including 26 certificate occupational core requirements and 42 credit hours in required Arts & Sciences courses.

Students must purchase their own textbooks and supplies.

## CRIMINAL JUSTICE PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| CJ | 101 | Criminal Law and Procedure ..... | 3 |
| CJ | 102 | Juvenile Justice and Procedure..... | 3 |
| CJ | 103 | Probation and Parole..... | 3 |
| CJ | 104 | Patrol Procedures..... | 3 |
| CJ | 106 | Police and Presentence Investigation Reports..... | 1 |
| *ENG | 101 | Writing with Readings in Exposition .. | 3 |
| *SOC | 111 | Criminal Justice System..... | 3 |
| *Term II* | | | |
| CJ | 111 | Traffic Investigation and Enforcement . | 3 |
| CJ | 112 | Criminal Investigation ..... | 3 |
| CJ | 113 | Organized and White Collar Crime ... | 3 |
| CJ | 114 | Contemporary Enforcement Techniques ..... | 3 |
| CJ | 115 | Physical Conditioning..... | 1 |
| *MATH | 120 | Intermediate Algebra..... | 3 |
| | | *Criminal Justice Certificate* | |
| *Term III* | | | |
| *CSCI | 101 | Computer Literacy..... | 3 |
| *ENG | 119 | Technical Communications..... | 3 |
| *PSY | | Psychology Elective ..... | 3 |
| *SOC | 101 | Introduction to Sociology ..... | 3 |
| *SOC | 280 | Social Science Research ..... | 3 |

| | | | |
|---|---|---|---|
| *Term IV* | | | |
| *COMM | | Communications Elective | 3 |
| *SOC | 211 | Social Problems | 3 |
| *SOC | 212 | Juvenile Delinquency | 3 |
| *SOC | 215 | Criminology | 3 |
| *SOC | 214 | Sociology of Corrections | 3 |
| *SOC | 216 | Ethnic and Minority Groups | 3 |
| | | Total | 68 |

**Arts & Sciences. Course descriptions on pages 24–32.*

## COURSE DESCRIPTIONS

**CJ 101—Criminal Law and Procedure (3 cr)**
This course is a study of the historical development, purposes and goals of common and statutory criminal law and the procedures which control actions in the criminal justice system.

**CJ 102—Juvenile Justice and Procedure (3 cr)**
This course covers the juvenile court and justice system including the Children's Code and the Rules of Procedure.

**CJ 103—Probation and Parole (3 cr)**
This course includes a study of history, philosophy and legal basis governing investigation and supervision of judged juvenile offenders and adult violators placed on probation and parole.

**CJ 104—Patrol Procedures (3 cr)**
This course introduces the basic patrol function and the problems faced by law enforcement officers in the accomplishment of this function.

**CJ 106—Police and Presentence Investigation Reports (1 cr)**
The study and use of police and presentence investigation reports.

**CJ 111—Traffic Investigation and Enforcement (3 cr)**
(*Prerequisites: CJ 104 and CJ 105*) This course includes the study of traffic law enforcement and basic wreck checking, and progresses to the complete investigation of major accidents.

**CJ 112—Criminal Investigation (3 cr)**
(*Prerequisites: CJ 101 and CJ 105*) Basic criminal investigation is studied from the preliminary investigation to final preparation and presentation in court.

**CJ 113—Organized and White Collar Crime (3 cr)**
(*Prerequisite: CJ 101*) This course includes the study of illegal activities of people and institutions whose purpose is profit through legitimate business, and illegal activity of people and organizations whose purpose is illegitimate gain through illegal enterprise.

**CJ 114—Contemporary Enforcement Techniques (3 cr)**
(*Prerequisites: CJ 101, CJ 104, and limited to Criminal Justice majors*) Verbal and manual skills which officers use on a daily basis—ranging from handcuffing and restraint to field notes and testimony—are studied.

**CJ 115—Physical Conditioning (1 cr)**
(*Prerequisites: Limited to Criminal Justice majors; class size limited to 20 students*) This course is designed to prepare the student for entry level law enforcement requirements and better health maintenance.

# Diesel Mechanics

**Certificate Program**
**3 Terms, Main Campus**

This program prepares students to work on a variety of diesel-powered equipment used in the trucking, heavy equipment and mining industries.

The program meets in working labs where students are introduced to a variety of diesel engines, electrical and hydraulic test equipment, dynamometers, air conditioning equipment, drive train components, fuel injection test and calibration devices, and related equipment.

In the first term, students learn basic engine block design; component parts disassembly, inspection and reassembly; diesel engine accessories; introduction to diagnosis; troubleshooting; and injection system component replacement. The second term covers the transmission, drive train and hydraulic systems. In the third term, students repair electrical components, air conditioning and fuel injection systems.

A student may leave the program when a training objective is reached and receive a proficiency certificate detailing the skills completed.

To satisfy full program requirements, a student must complete successfully 1125 instructional hours of which 675 are laboratory work and 450 are related theory.

Diesel Mechanics students must pay an equipment fee of $100 before entering the first term, $130 for the second term, and $130 for the third term.

## DIESEL MECHANICS PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| DIME | 101L | Diesel Theory/Lab I | 12 |
| DIME | 102 | Math/Basic Electricity | 3 |
| *Term II* | | | |
| DIME | 111L | Diesel Theory/Lab II | 12 |
| DIME | 113 | Transportation Electronics | 3 |
| *Term III* | | | |
| DIME | 201L | Diesel Theory/Lab III | 15 |
| | | Total | 45 |

*Option*
Supervised Work Experience

*Support Courses*
See page 95.

## COURSE DESCRIPTIONS

**DIME 101L—Diesel Theory/Lab I (12 cr)**
Emphasis is on two- and four-stroke diesel engines including basic engine cylinder block assembly design; component parts disassembly, inspection and reassembly; fits, tolerances and

service specifications; use of precision measuring tools; interpreting mechanical drawings; thread repair procedures; lubricating, cooling, air intake and fuel systems; and governor control design. The course introduces the student to diagnosis and repair of engine failures and reduced operational capabilities. This course meets 20 hours per week for 15 weeks.

**DIME 102—Math/Basic Electricity (3 cr)**
The student learns and applies basic math principles as they relate to measuring tools, equipment, graphs and schematics. The theory of mechanical power, basic electricity principles, related terminology and electrical component identification also are covered. An introduction to diagnostic equipment, testing procedures and theory related to heavy equipment, electrical systems, troubleshooting and repair procedures is included. This course meets five hours per week for 15 weeks.

**DIME 111L—Diesel Theory/Lab II (12 cr)**
*(Prerequisites: DIME 101L, DIME 102 or equivalent)* Basic theory of the entire drive train and hydraulic systems is studied. The course covers shop safety and the theory related to test equipment, diagnosis, troubleshooting, analysis procedures and an introduction to job seeking and job retention skills. Instruction includes the service and repair of drive train and hydraulic system components. This course meets 20 hours per week for 15 weeks.

**DIME 113—Transportation Electronics (3 cr)**
*(Prerequisites: DIME 101L, DIME 102 or equivalent)* Students learn how multimeters are used in analyzing basic direct and alternating current circuits. The theory of solid-state devices, basic principles of electronics and interpretation of circuit diagrams are covered. This course meets five hours per week for 15 weeks.

**DIME 201L—Diesel Theory/Lab III (15 cr)**
*(Prerequisites: DIME 111L, DIME 113 or equivalent)* Students learn safety, diagnosis, troubleshooting and repair procedures of electrical systems, fuel injection components and air conditioning systems. This course meets 25 hours per week for 15 weeks.

# Electrical Trades

**Certificate Program**
**4 Terms, Main Campus**

This program provides students with entry-level skills for employment in the construction industry, electrical maintenance and related electrical trades.

Off-campus projects enable students to gain on-the-job experience in residential construction and electrical installation. On- and off-campus electrical wiring projects are incorporated into the program. These projects enable students to obtain experience with electrical work under the supervision of the instructor and T-VI maintenance personnel.

The program is designed to allow a student to enter the electrical trades industry at three separate levels. Upon completion of Terms I and II, the student may receive a residential wiring proficiency certificate and obtain employment as an apprentice electrician.

Completion of Term III gives the student additional skills in design and installation of industrial control systems and heavy construction work. A student may receive a commercial wiring proficiency certificate at this point.

Term IV upgrades the student's abilities in installation and maintenance of solid-state equipment. Students also may have the option to participate in a supervised work experience program.

To earn a certificate, a student must successfully complete a total of 1725 instructional hours of which 900 are laboratory work and 825 are related theory. A student may leave the program when a training objective is reached and receive a proficiency certificate detailing the skills mastered.

Electrical Trades students must pay a personal equipment fee of $100 before entering the first term, another $85 for the second term, $50 for the third term and $50 for the fourth term. They also must provide their own shop clothing and industrial safety glasses or goggles which conform to ANSI 287.1.

Note: Students are required to take 7½-week human relations and communications courses to fulfill graduation requirements. It is recommended that these courses be taken during Term I or Term III.

**ELECTRICAL TRADES PROGRAM**

| | | | *Cr Hrs* |
|---|---|---|---|
| *Term I* | | | |
| 'BA | 111 | Communications (7½ weeks) ..... | 2 |
| 'BA | 131 | Human Relations (7½ weeks)..... | 2 |
| ELTR | 103L | Electrical Trades Theory/Lab I ..... | 12 |
| ELTR | 102 | Electrical Math I..... | 3 |
| *Term II* | | | |
| ELTR | 111L | Electrical Trades Theory/Lab II:.... | 12 |
| ELTR | 112 | Electrical Trades Math II ..... | 3 |
| ELTR | 113 | Electrical Trades Blueprint Reading I ..... | 3 |
| | | *Residential Wiring Proficiency Certificate* | |
| *Term III* | | | |
| ELTR | 201L | Electrical Trades Theory/Lab III.... | 15 |
| ELTR | 202 | Electrical Trades Blueprint Reading II..... | 3 |
| | | *Commercial Wiring Proficiency Certificate* | |

*Term IV*

| | | | |
|---|---|---|---|
| ELTR | 211L | Electrical Trades Theory/Lab IV.... | 15 |
| | | Total ..... | 70 |

*Electrical Trades Certificate*

*Option*
Supervised Work Experience

*Support Courses*
See page 95.

*Course descriptions on page 44.*

## COURSE DESCRIPTIONS

**ELTR 103L—Electrical Trades Theory/Lab I (12 cr)**
This course provides instruction in the fundamentals of basic electricity. Subject areas include AC and DC theory, symbol identification, schematic reading, circuit application, magnetism, introduction to basic transformers, single-phase motors, and use of the National Electric Code and utility requirements. This course also presents training in Red Cross first aid and CPR for which certification is issued upon successful completion. This course meets 20 hours per week for 15 weeks.

**ELTR 102—Electrical Trades Mathematics I (3 cr)**
The student reviews basic arithmetic functions and is introduced to electrical formulas which include Ohm's and Kirchhoff's laws. Problem solving includes calculations of material and circuit load requirements; rules for series, parallel and combination circuits; and mechanical work and power. This course meets five hours per week for 15 weeks.

**ELTR 111L—Electrical Trades Theory/Lab II (12 cr)**
(*Prerequisite: ELTR 101L*) The fundamentals of electricity learned in Term I are applied to the design and installation of residential and commercial building circuitry. Subject areas include safety; use of tools and equipment; and the design and installation of branch circuits, service entrances, and the necessary hardware such as outlet boxes, electrical cable and low-voltage equipment. Also covered are wiring of temporary services, basic conduit bending, and an in-depth study of the National Electric Code and local codes and regulations. This course meets 20 hours per week for 15 weeks.

**ELTR 112—Electrical Trades Mathematics II (3 cr)**
(*Prerequisite: ELTR 102 or equivalent*) This course advances the student's knowledge of electrical formulas into algebraic concepts and trigonometric functions as they apply to power production, magnetic circuitry, generators and three-phase motors. This course meets five hours per week for 15 weeks.

**ELTR 113—Electrical Trades Blueprint Reading I (3 cr)**
(*Prerequisite: ELTR 101L*) Basic instruction is provided in reading and interpreting blueprints and specifications. Emphasis is on terminology, symbols, notations, scaling, dimensioning and basic blueprint drawing techniques. Construction methods, materials and structural support of residential, commercial and industrial buildings also are covered. This course meets five hours per week for 15 weeks.

**ELTR 201L—Electrical Trades Theory/Lab III (15 cr)**
(*Prerequisites: ELTR 111L, ELTR 112, ELTR 113*) Areas of instruction include tools and materials for commercial installations, industrial control circuits for motor driven equipment, conduit bending and installation, fire and intrusion alarm systems, and transformers and power distribution systems. Students work outside the lab on campus projects gaining first-hand knowledge of installation. This course meets 25 hours per week for 15 weeks.

**ELTR 202—Electrical Trades Blueprint Reading II (3 cr)**
(*Prerequisite: ELTR 113 or equivalent*) Advanced instruction in reading blueprints and specifications is provided. The blueprints include transformers, feeders, distribution panels, subfeeder panels, lighting circuits, motors and controllers, signal systems and power requirements. This course meets five hours per week for 15 weeks.

**ELTR 211L—Electrical Trades Theory/Lab IV (12 cr)**
(*Prerequisites: ELTR 101L, ELTR 111L, ELTR 201L or equivalent*) This course is an advanced study of motor control circuitry. Included are solid-state devices and a comparison between magnetic control circuitry and state-of-the-art equipment. This course meets 25 hours per week for 15 weeks.

# Environmental Protection Technology

**Associate in Applied Science Degree**
**4 Terms, Main Campus**

The Environmental Protection Technology program prepares students and upgrades workers in the diverse field of environmental protection and occupational safety. A broad base of technical skills and physical science knowledge emphasizes the application of laboratory testing, the use of instruments, environmental legislation and cost effective regulation compliance.

Training is provided in biology, chemistry and physics with emphasis on environmental protection.

The program is focused on skills in key areas of environmental protection, including biological and hazardous waste, water quality protection, air quality protection, domestic waste control, workplace safety and recycling.

Fulfillment of the degree requirements listed below and institutional requirements listed on page 18 of the 1990–91 T-VI catalog are required for graduation. Upon completion of course work, students will be certified in multiple areas of environmental protection. All Arts & Sciences courses have a tuition charge. Science courses also have lab fees (see page 16).

## ENVIRONMENTAL PROTECTION TECHNOLOGY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| [1]BIO | 111 | Environmental Science | 3 |
| [1]CHEM | 111 | Introduction to Chemistry | 3 |
| [1]CHEM | 112L | Introduction to Chemistry Lab | 1 |
| [1]PHYS | 102 | Introduction to Physics | 3 |
| [1]MATH | 120 | Intermediate Algebra | 3 |
| EPT | 111 | Environmental Protection Technology I | 4 |
| [2]CJ | 170 | First Aid CPR | 1 |
| *Term II* | | | |
| [1]BIO | 123 | Biology for Health Sciences | 3 |
| [1]BIO | 124L | Biology Lab for Health Sciences | 1 |
| [1]CHEM | 212L | Integrated Organic Chemistry & Biochemistry | 4 |
| [1]MATH | 121 | College Algebra | 3 |
| [2]PLMB | 173 | Environmental Hydrology/Backflow Prevention | 3 |
| ELTR | 213 | Occupational Safety | 3 |
| *Term III* | | | |
| EPT | 231L | Applied Environmental Biology | 3 |
| EPT | 131L | Applied Environmental Chemistry | 3 |
| [1]COMM | | Communication Elective (101 or higher) | 3 |
| [1]ENG | 101 | Writing with Reading in Exposition | 3 |
| [1]CSCI | 101 | Computer Literacy | 3 |
| [2]AUTC | 172 | Air Care Inspectors Certification | 1 |
| *Term IV* | | | |
| [1]ENG | 119 | Technical Communication | 3 |
| FS | 203 | Hazardous Materials | 3 |
| [2]EPT | 112 | Emergency Preparedness and Response Training | 2 |
| EPT | 211L | Environmental Protection Technology II/Lab | 4 |
| EPT | 212 | Energy and Waste Management | 3 |
| EPT | 215 | Environmental Protection Instrumentation | 3 |
| | | Total | 69 |

[1]*Arts & Sciences courses. Course descriptions on pages 24–32.*

[2]*These courses provide certification by various agencies.*

## COURSE DESCRIPTIONS

**EPT 111—Environmental Protection Technology I (4 cr)**
This course is an introduction to environmental protection methods and their ecological basis. All major areas of environmental concern are covered including air, water, soils and food sanitation.

**CJ 170—First Aid and CPR (1 cr)**
This course presents training in the Red Cross Multimedia System and cardiopulmonary resuscitation for which Red Cross certification is issued. This is an introductory course stressing immediate care and recognition of life threatening injuries and illnesses. Emphasis is on emergency temporary help in order to preserve life.

**PLMB 173—Environmental Hydrology/Backflow Prevention (3 cr)**
This course teaches the student to identify, test, troubleshoot and repair backflow prevention assemblies. A minimum of 50 percent of class time is spent in the lab working with assemblies. Successful completion of this course qualifies the student to become a certified backflow prevention assembly tester.

**ELTR 213—Occupational Safety (3 cr)**
Introduction is provided to a variety of topics in current safety research and practices. Students are instructed in safety principles and standards. Basic safety concepts and monitoring procedures are emphasized culminating in inspections and projects that contribute to the T-VI safety program. An introduction to Occupational Safety and Health Act (OSHA) regulations is included.

**EPT 131L—Applied Environmental Chemistry (3 cr)**
(*Prerequisites: CHEM 111 and CHEM 112L*) This course emphasizes the use of basic wet chemistry and analytical techniques through the practice of standard water, air, food and soil quality tests.

**EPT 231L—Applied Environmental Biology (3 cr)**
(*Prerequisite: BIO 111*) This course covers basic cell structure and function, basic genetics, standard animal physiology and microbial pathology. Laboratory exercises and demonstrations are related to standard microbiological environmental testing.

**AUTC 172—Air Care Inspectors Certification (1 cr)**
This course provides the training required for mechanics to become certified Air Care Inspectors by the City of Albuquerque under its Vehicle Pollution Management program. This course will cover the city and federal rules and regulations governing air pollution, emissions inspections and approved manufacturers' analyzers.

**FS 203—Hazardous Materials (3 cr)**
Students learn basic terminology, hazardous materials recognition and legal aspects of responses to hazardous material incidents. Basic Haz-Mat scene management and strategies for resolution of incidents are included. Level I-Recognition State Certification is available. This course also meets the requirements of NFPA 472.

**EPT 112—Emergency Preparedness and Response Training (2 cr)**
This course offers standard (OSHA 1910-120, 29 CFR-1910) 40 hour training in hazardous waste management operations and emergency responses. This course also meets SERA Title 3 requirements.

**EPT 211L—Environmental Protection Technology II/Lab (4 cr)**

*(Prerequisite: EPT 111)* Technical, financial and legal aspects of environmental protection technology are explored. An orientation is given in toxicological concerns and biological waste management. Practice is provided in development and maintenance of environmental protection programs.

**EPT 212—Energy and Waste Management (3 cr)**

This course provides an orientation to energy and waste management in systems. Students learn to assess energy requirements through audits. Cost effective energy conservation techniques are emphasized. Instruction is provided in waste reduction and control through precycling, conservation, reuse, recycling, waste pretreatment and safe disposal.

**EPT 215—Environmental Protection Instrumentation (3 cr)**

This course covers the use of volt/ohm meter, amp meter, digital vs. analogue, gauge reading, zero, span, parallax, signal noise, calibration curves, signal delays, electric vs. gas zero, signal averaging and strip chart equipment. Operation and calibration of the following instruments is included: pressure gauges, pH meter, conductivity meter, spectrophometer, dissolved oxygen meter, gas chromatograph, turbidimeter, gas testing equipment, calorimeter carbon monoxide, ozone meters, radiation instrumentation and noise meters.

# Fire Science

## Associate in Applied Science Degree
## 4 Terms, Main Campus

The Fire Science program provides basic classroom instruction in the field of firefighting. Students earn an associate degree.

The curriculum covered in the third and fourth terms provides additional coursework designed to train the student for higher level positions in the fire science occupation. To earn an Associate in Applied Science Degree in Fire Science, a student must complete successfully 68 credit hours of which 37 are core requirements and 31 are Arts & Sciences courses.

Students are required to purchase their own textbooks and instructional supplies.

### FIRE SCIENCE PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| CJ | 170 | First Aid and CPR | 1 |
| EPT | 213 | Occupational Safety | 3 |
| *ENG | 101 | Writing with Readings in Exposition | 3 |
| FS | 101 | Introduction to Fire Science | 3 |
| FS | 102 | Fire Service Organization | 3 |
| *SOC | 101 | Introduction to Sociology | 3 |
| *Term II* | | | |
| *ENG | 119 | Technical Communications | 3 |
| FS | 111 | Fire Prevention | 3 |
| FS | 112 | Building Construction | 3 |
| *PHYS | 102 | Introduction to Physics | 3 |
| *PSY | 101 | General Psychology 1 | 3 |
| *Term III* | | | |
| *CHEM | 111/ 112L | Introduction to Chemistry/Lab | 4 |
| *COMM | 221 | Communications Elective | 3 |
| FS | 201 | Fire Protection Systems | 3 |
| FS | 202 | Managing Community Fire Protection | 3 |
| FS | 203 | Hazardous Materials | 3 |
| *MATH | 120 | Intermediate Algebra | 3 |
| *Term IV* | | | |
| *CSCI | 101 | Computer Literacy | 3 |
| | | or | |
| | | *Computer Elective | 3 |
| FS | 211 | Incident Command and Control | 3 |
| FS | 212 | Fire Investigation | 3 |
| FS | 213 | Industrial Fire Protection | 3 |
| FS | 214 | Facilities Inspection | 3 |
| *SOC | 216 | Race and Ethnic Groups | 3 |
| | | Total | 68 |

**Arts & Sciences. Course descriptions on pages 24–32.*

### COURSE DESCRIPTIONS

**CJ 170—First Aid and CPR (1 cr)**

This course presents training in the Red Cross Standard First Aid System and cardiopulmonary resuscitation for which Red Cross certification is issued upon successful completion. This is an introductory course stressing immediate care and recognition of life threatening injuries and illnesses. Emphasis is on emergency temporary help in order to preserve life. This course meets two hours a week for 15 weeks.

**EPT 213—Occupational Safety (3 cr)**

Introduction is provided to a variety of topics in current safety research and practices. Students are instructed in safety principles and standards. Basic safety concepts and monitoring procedures are emphasized culminating in laboratory and classroom inspection visits and projects that actively contribute to the T-VI safety program effort. An introduction to the Occupational Safety and Health Act (OSHA) regulations is included. This course meets three hours per week for 15 weeks.

**FS 101—Introduction to Fire Science (3 cr)**

This course includes history of fire service, careers in fire protection, physical agility and fitness requirements, public and private fire protection organization, behavior and chemistry of fire.

**FS 102—Fire Service Organization (3 cr)**

Operational definitions, types of organizations, fire department management techniques and governmental impact on fire service delivery, emergency management and future trends in fire protection are covered.

**FS 111—Fire Prevention (3 cr)**

This course presents basic principles of fire prevention, public fire safety education, code development and adoption, fire testing of building components and consumer products.

**FS 112—Building Construction (3 cr)**
The student is introduced to building construction with emphasis on structural elements, fire spread in buildings, fire loading, fire suppression and alarm systems.

**FS 201—Fire Protection Systems (3 cr)**
The design and operation of fire protection systems are covered including water distribution, detection, alarm and watchman services, protection systems for special hazards, carbon dioxide, dry chemical, foam and water spray systems.

**FS 202—Managing Community Fire Protection (3 cr)**
This course includes risk assessment, resource management, measuring and evaluating productivity, legal aspects of emergency service delivery, and the changing mission and role of fire service in the community.

**FS 203—Hazardous Materials (3 cr)**
Students learn definitions, recognition and legal aspects of responses to hazardous material incidents. Basic Haz-Mat scene management and strategies for resolution of incidents are included. Level I—Recognition New Mexico Certification is available. This course tracks with NFPA 472.

**FS 211—Incident Command and Control (3 cr)**
Basic principles of firefighting strategies, fire ground operations, general and special emergencies, incident command and communication, and multijurisdictional incidents as they involve fire service response are discussed in this course.

**FS 212—Fire Investigation (3 cr)**
The student is introduced to the techniques of determining fire origin and cause. Topics include fire scene search, legal aspects, and arson problems including motives and prevention strategies. Also included are interviews and arson case preparation techniques.

**FS 213—Industrial Fire Protection (3 cr)**
This course covers lifesaving procedures, special firefighting equipment, salvage, and prevention of rekindling. Problems in storage, handling and manufacture of hazardous materials commonly found in industry also are reviewed.

**FS 214—Facilities Inspection (3 cr)**
This course covers testing of fixed fire suppression and alarm systems, methods of inspection, report writing, enforcement and legal aspects, model building and fire codes, zoning and plan review problems.

# Food Service Management

**Certificate Program**
**1 Term, Main Campus**

This program is available to persons employed in the hospitality/food service field who want to learn the skills necessary to become entry-level supervisors or managers.

Classroom instruction totals 135 hours of theory in human relations, supervision and business practices. The supervised work experience portion of the program, totaling a minimum of 240 hours, is established with a cooperating employer under the supervision of the instructor.

Students who complete the program receive certificates.

*This program may not qualify students for Veterans Administration training benefits or other student financial aid.*

*(Also see Baking, page 100, and Quantity Food Preparation, page 111.)*

## FOOD SERVICE MANAGEMENT PROGRAM

| *Term I* | | | *Cr Hrs* |
|---|---|---|---|
| FSMG | 101 | Food Service Management Theory.. | 6 |
| FSMG | 198 | Supervised Work Experience..... | 9 |
| | | Total ..... | 15 |

## COURSE DESCRIPTIONS

**FSMG 101—Food Service Management Theory (6 cr)**
The student learns skills to advance into supervision and management. Students develop human relations skills needed to facilitate cooperation among employees and attract customers; supervision skills related to motivating employees, resolving conflicts, setting goals, rewarding good performance and providing constructive discipline; and the business practices of basic accounting, marketing and cost control. This course meets nine hours per week for 15 weeks.

**FSMG 198—Supervised Work Experience (9 cr)**
The student is employed at an approved work station that provides relevant learning experiences directly related to career and educational goals. The student is supervised and evaluated jointly by the employer and T-VI personnel. This course meets 16 hours per week for 15 weeks.

# Machine Tool Technology

**Certificate Program**
**4 Terms, Main Campus**

The Machine Tool Technology program qualifies students for job entry as machine tool operators.

Students learn the fundamental operations of various machine tools. Classes meet in two well-equipped labs where students are introduced to micrometers, gauges, drill presses, hand tools, engine lathes, milling machines, numerically controlled turning and machining centers, and other equipment used throughout the metal working industry.

To earn a certificate, a student must complete successfully 1575 instructional hours of which 900 are laboratory work and 675 are related theory.

A student may leave the program when a training objective has been reached and receive a proficiency certificate detailing the skills mastered.

Machine Tool Technology students must pay an equipment fee of $100 before entering the first term, $80 before the second term and $70 for the third term. Students also must provide their own industrial goggles or safety glasses with side shields which conform to ANSI 287.1.

Note: Students are required to take 7½-week human relations and communications courses to fulfill graduation requirements. It is recommended that these courses be taken during Term I or Term II.

## MACHINE TOOL TECHNOLOGY PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| [1]BA | 111 | Communications (7½ weeks) | 2 |
| [1]BA | 131 | Human Relations (7½ weeks) | 2 |
| MATT | 101L | Machine Tool Technology Theory/ Lab I | 12 |
| MATT | 102 | Machine Tool Technology Math/ Blueprint Reading I | 3 |
| *Term II* | | | |
| MATT | 111L | Machine Tool Technology Theory/ Lab II | 12 |
| MATT | 112 | Machine Tool Technology Math/ Blueprint Reading II | 3 |
| *Term III* | | | |
| MATT | 201L | Machine Tool Technology Theory/ Lab III | 12 |
| MATT | 203 | Numerical Control Programming I | 3 |
| *Term IV* | | | |
| MATT | 211 | Machine Tool Technology Lab IV | 9 |
| MATT | 212 | Geometrical Tolerancing/Metallurgy | 3 |
| MATT | 213 | Numerical Control Programming II | 3 |
| | | Total | 64 |

*Option*
Supervised Work Experience

*Support Courses*
See page 95.

[1]*Course descriptions on page 44.*

## COURSE DESCRIPTIONS

**MATT 101L—Machine Tool Technology Theory/Lab I (12 cr)**

These courses provide experience in the operation of drill presses, pedestal grinders, band saws, engine lathes, surface grinders and milling machines. Instruction also covers shop safety, benchwork, machine construction and nomenclature, speeds and feeds, cutting tool physics and abrasives. This course meets 20 hours per week for 15 weeks.

**MATT 102—Machine Tool Technology Mathematics/Blueprint Reading I (3 cr)**

Review of basic math and introduction of simple formula manipulation, introduction to shop drawings, and sketching of orthographic and isometric views are included. This course meets five hours per week for 15 weeks.

**MATT 111L—Machine Tool Technology Theory/Lab II (12 cr)**

(*Prerequisites: MATT 101L, MATT 102 or equivalent*) Instruction covers advanced engine lathe operations, basic surface grinding and an introduction to turret lathes and milling machines. Emphasis in the theory portion of the course is on the technical aspects of tooling. This course meets 20 hours per week for 15 weeks.

**MATT 112—Machine Tool Technology Mathematics/Blueprint Reading II (3 cr)**

Instruction includes a continuation of algebra with emphasis on machine-related problems, geometric theorems, introduction to trigonometry as applied to the trade, and continuation of print reading. This course meets five hours per week for 15 weeks.

**MATT 201L—Machine Tool Technology Theory/Lab III (12 cr)**

(*Prerequisites: MATT 111L, MATT 112 or equivalent*) The advanced milling machine operations of hole production, indexing and rotary table work are emphasized. Tracer and advanced turret lathe operations are introduced along with tool, cutter and cylindrical grinding. Numerical control (N/C) and computer numerical control (C/N/C) operations also are covered. This course meets 20 hours per week for 15 weeks.

**MATT 203—Numerical Control Programming I (3 cr)**
(*Prerequisites: All Term II courses or equivalent*) Instruction includes word address formats, the programming and tape preparation necessary for numerical control machining along with practical trigonometry as applied to the N/C programs. This course meets five hours per week for 15 weeks.

**MATT 211—Machine Tool Technology Lab IV (9 cr)**
(*Prerequisites: All Term III courses or equivalent*) Major emphasis is on advanced milling and turning setups, advanced N/C, C/N/C setup, and operation of drilling/milling and turning machines. This course meets 15 hours per week for 15 weeks.

**MATT 212—Geometrical Tolerancing/Metallurgy (3 cr)**
This course covers care and application of tooling with emphasis on applications to commonly machined materials with high-speed steels, carbides, coated carbides and ceramics. Instruction covers methods and processes, structure and properties of metal, temperature changes in metal machining, effects of alloying elements, weights and conversion factors. Also included are heat treatment of ferrous alloys and instruction in interpretation and application of the geometrical tolerancing system. This course meets five hours per week for 15 weeks.

**MATT 213—Numerical Control Programming II (3 cr)**
(*Prerequisite: MATT 203 or equivalent*) This course offers instruction in computer-assisted interactive graphics and part programming system applications. It provides the basic information necessary for writing milling, drilling and turning programs. The course also covers advanced manual programming techniques and geometric applications to computer assisted drafting/computer assisted manufacturing (CAD/CAM) systems used in distributive numerical control (D/N/C) and C/N/C machining. This course meets five hours per week for 15 weeks.

# Plumbing

## Certificate Program
## 2 Terms, Main Campus

The Plumbing program provides the technical knowledge and occupational skills necessary to enter the plumbing industry. This program does not accept new students every term.

During the first term, instruction is in the fundamentals of layout, assembly and installation; nomenclature of tools and materials; and practice with the tools of the trade.

Emphasis in the second term is on residential and light commercial work, maintenance and remodeling; installation of fixtures; alteration, planning and coordination of the job; repair of piping systems; installation of water, soil and vent lines; and application of codes.

Most activities take place on campus, but some take place at off-campus building sites and are an integral part of the curriculum.

To earn a certificate, a student must complete successfully 750 instructional hours of which 450 are laboratory work and 300 are related theory.

A student may leave the program when a training objective has been reached and receive a proficiency certificate detailing the skills mastered.

Plumbing students must pay an equipment fee of $100 before entering the first term and another $70 for the second term.

## PLUMBING PROGRAM

| | | | *Cr Hrs* |
|---|---|---|---|
| *Term I* | | | |
| PLMB | 101L | Plumbing Theory/Lab I | 12 |
| PLMB | 102 | Plumbing Math/Blueprint Reading I | 3 |
| *Term II* | | | |
| PLMB | 111L | Plumbing Theory/Lab II | 12 |
| PLMB | 112 | Plumbing Math/Blueprint Reading II | 3 |
| | | Total | 30 |

*Support Courses*
See page 95.

## COURSE DESCRIPTIONS

**PLMB 101L—Plumbing Theory/Lab I (12 cr)**
This class covers safe and proper use of tools and equipment; identification of plumbing fittings and pipe; basic hydraulics and pneumatics; layout, assembly, installation, alteration and repair of pipe systems; safety practices; general tools and equipment; sources of heat; and operational procedures. This course meets 20 hours per week for 15 weeks.

**PLMB 102—Plumbing Mathematics/Blueprint Reading I (3 cr)**
This course covers basic arithmetic, whole numbers, common and decimal fractions, cubic and weight measures, use of rules and formulas, ratio and proportion, area calculations, volumes, pressure and capacities, hydraulics and pipe length calculations, and surface and direct measurements. Also covered are basic instruction in sketching, and reading workshop drawings, blueprints and specifications for residential and light commercial work. This course meets five hours per week for 15 weeks.

**PLMB 111L—Plumbing Theory/Lab II (12 cr)**
(*Prerequisites: PLMB 101L or equivalent, PLMB 102 or equivalent*) This course emphasizes design, layout and installation of water, soil and vent lines; related fixtures and fittings; inspecting and testing systems; soldering; maintenance and repair of plumbing; solar systems; yard irrigation; swimming pool, hot tubs and spa installation and service. This course meets 20 hours per week for 15 weeks.

**PLMB 112—Plumbing Mathematics/Blueprint Reading II (3 cr)**
(*Prerequisite: PLMB 102 or equivalent*) Course content includes a detailed study of piping drawings, isometric pipe layouts, interpreting residential and light commercial blueprints, application of plumbing codes, knowledge of terms, and planning and coordinating the job. This course meets five hours per week for 15 weeks.

# Quantity Food Preparation

**Certificate Program**
**2 Terms, Main Campus**

Quantity Food Preparation emphasizes nutritional food preparation and prepares students for entry into the rapidly growing food industry—as sauté cooks after the first term or dinner cooks upon completion of the full program.

Classes are held in industrial kitchens. First-term students prepare food for and operate a cafeteria line including cash registers.

Second term students operate the Student Specialties program, a fine dining restaurant open to the public by reservation only. (See page 7.)

To earn a certificate, a student must complete successfully 750 instructional hours of which 525 are laboratory work and 225 are related theory.

A student may leave the program when a training objective has been reached and receive a proficiency certificate detailing the skills mastered.

Graduates are encouraged to enroll in the Baking program, as space permits, to gain an additional job skill which may be helpful in their careers.

Quantity Food Preparation students must pay an equipment fee of $100 before entering the first term and another $80 for the second term.

*(Also see Baking, page 100, and Food Service Management, page 108.)*

**QUANTITY FOOD PREPARATION PROGRAM**

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| QUFD | 101L | Quantity Food Theory/Lab I ..... | 12 |
| QUFD | 102 | Food Service Mathematics ..... | 3 |
| *Term II* | | | |
| QUFD | 111L | Quantity Food Theory/Lab II..... | 15 |
| | | Total ..... | 30 |

## COURSE DESCRIPTIONS

**QUFD 101L—Quantity Food Theory/Lab I (12 cr)**
This course provides instruction in preparing meats, vegetables, soups, sauces, sandwiches, salads and breakfast foods. Emphasis is placed on cost, nutrition, sanitation, safety, tools and equipment, cooking methods and techniques, speed and efficiency, and cafeteria line operation. This course meets 20 hours per week for 15 weeks.

**QUFD 102—Food Service Mathematics (3 cr)**
Basic arithmetic for sales, portioning and costing of food products is covered. Students also learn how to use cash registers. This course meets five hours per week for 15 weeks.

**QUFD 111L—Quantity Food Theory/Lab II (15 cr)**
Students learn methods of cooking stews, fricassees, garnishes, sauces and other dinner items. Also covered are herbs and spices, salad preparation, use of recipes, application of costing procedures, pantry work, restaurant service and operation, and customer service. This course meets 25 hours per week for 15 weeks.

# Sportscraft/Small Engine Mechanics

**Certificate Program**
**3 Terms, Main Campus**

The Sportscraft/Small Engine Mechanics program provides entry level skills needed to diagnose and repair mechanical problems on recreational vehicles, industrial equipment and outdoor power products. Proper safety procedures along with the correct use and selection of handtools and test equipment are stressed.

Employment opportunities include such positions as general mechanic, specialist, service writer, shop foreman, service manager and sales representative. Graduates may seek employment at agricultural implement dealerships, park commissions, landscape businesses, equipment rental shops, lawn and garden shops, construction and industrial companies, department stores, recreational vehicle sales and service shops.

During Term III, qualified students have the option to apply their skills in a supervised work experience program with cooperating employers.

A student may leave the program when a training objective is reached and receive a proficiency certificate detailing the skills mastered.

To earn a Sportscraft/Small Engine Mechanics certificate, a student must successfully complete a total of 1125 instructional hours of which 750 are laboratory work and 375 are related courses including theory. Students must pay an equipment fee of $100 before entering the first term, $95 for the second term and $90 for the third term.

## SPORTSCRAFT/SMALL ENGINE MECHANICS PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| SCSE | 101L | Sportscraft/Small Engine Theory/ Lab I | 12 |
| SCSE | 102 | Math/Basic Electricity | 3 |
| *Term II* | | | |
| SCSE | 111L | Sportscraft/Small Engine Theory/ Lab II | 12 |
| SCSE | 113 | Transportation Electronics | 3 |
| *Term III* | | | |
| SCSE | 201L | Sportscraft/Small Engine Theory/ Lab III | 15 |
| | | Total | 45 |

### COURSE DESCRIPTIONS

**SCSE 101L—Sportscraft/Small Engine Mechanics Theory/ Lab I (12 cr)**

This course covers entry-level skills needed to perform repairs on outdoor power products, motorcycles and outboard marine engines. Two- and four-stroke cycle engine theories are examined in addition to complete engine disassembly and overhaul. Application and use of handtools, special tools, measuring devices and test equipment are covered. Cooling, lubrication, basic ignition and fuel systems are studied. This course meets 20 hours per week for 15 weeks.

**SCSE 102—Math/Basic Electricity (3 cr)**

This course presents math principles used with measuring tools, test equipment, graphs and schematics. The theory of mechanical power, basic electricity principles, electronic component identification and related terminology are also studied. Students are introduced to electrical systems troubleshooting and repair procedures. This course meets five hours per week for 15 weeks.

**SCSE 111L—Sportscraft/Small Engine Mechanics Theory/ Lab II (12 cr)**

(*Prerequisites: SCSE 101L, SCSE 102, or equivalent*) This course teaches the student how to diagnose and safely repair various types of clutches, transmissions, transaxles and final drives found on outdoor power products, motorcycles and outboard marine engines, as well as disc and drum type brake systems. This course meets 20 hours per week for 15 weeks.

**SCSE 113—Transportation Electronics (3 cr)**

(*Prerequisites: SCSE 101L, SCSE 102, or equivalent*) This course provides the information required to test and replace malfunctioning electronic components. The theory of solid state devices, principles of electronics and interpretation of circuit diagrams are included. Lab experiments cover voltage rectifiers, full wave rectification, transistors, thyristors, integrated circuits, operational amplifiers and timing circuits. This course meets five hours per week for 15 weeks.

**SCSE 201L—Sportscraft/Small Engine Mechanic Theory/ Lab III (15 cr)**

(*Prerequisites: SCSE 111L, SCSE 113, or equivalent*) This course focuses on the safety, theory, diagnosis and repair of electrical components, fuel injections, carburetion and exhaust systems. Primary emphasis is placed on diagnostic skills. Students are also introduced to hydraulic theory. This course meets 25 hours per week for 15 weeks.

# Truck Driving

**Certificate Program**
**1 Term, Main Campus**

The Truck Driving program provides basic instruction required to become a professional truck driver.

Students learn how to handle a tractor trailer safely and efficiently. The program is designed for students who are already licensed as automobile drivers in New Mexico. The goal of the program is to provide the basic instruction and skill development required to test for the commercial driver's license needed to operate tractor trailers.

To earn a certificate, a student must successfully complete 375 hours of which 100 are related theory and 275 are actual driving activities.

Students must pay a nonrefundable fee of $100 for the course.

### TRUCK DRIVING

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| TRDR | 104L | Truck Driving Theory/Lab | 15 |
| | | Total | 15 |

### COURSE DESCRIPTION

**TRDR 104L—Truck Driving Theory/Lab (15 cr)**

This course provides basic classroom, driving range and over-the-road instruction in the fundamentals of control systems; vehicle inspection; shifting, backing, coupling and uncoupling; speed and space management; hazard perception; emergency maneuvers; cargo handling, protection and documentation; hours-of-service requirements; accident procedures; trip planning; preventive maintenance; minor repairs; reporting equipment malfunctions; public and employer relations; defensive driving; hazardous materials; first aid and CPR; and state and federal regulations governing the professional truck driver. This course meets 25 hours per week for 15 weeks.

# Welding

**Certificate Program**
**3 Terms, Main Campus**

The Welding program qualifies students for entry-level employment in the metals-processing industry. Specific welding qualification is the goal of each term.

This program admits students only once a year for the fall term.

During the first term, students study, practice and qualify in oxyacetylene welding. Instruction also is provided in shielded metal-arc welding.

In the second term, welder qualification tests are given in shielded metal-arc welding and gas metal-arc welding. Students must pass these tests to advance to Term III.

During the third term, tests are given in pipe welding and gas tungsten-arc welding to acquaint the student with standard operating procedures for various qualifications. Students must be making progress on these tests to qualify for supervised work experience. Instruction also is offered on welding fabrication and materials testing.

A student may leave the program when a training objective is reached and receive a proficiency certificate detailing the skills mastered.

A certificate is awarded to students who complete successfully 1200 instructional hours of which 750 are laboratory work and 450 are related theory.

Welding students must pay a personal equipment fee of $100 before entering the first term.

## WELDING PROGRAM

| | | | Cr Hrs |
|---|---|---|---|
| *Term I* | | | |
| WELD | 101L | Welding Metallurgy Theory/Lab I .. | 12 |
| WELD | 102 | Welding Math/Blueprint Reading I.. | 3 |
| *Term II* | | | |
| WELD | 111L | Welding Metallurgy Theory/Lab II.. | 12 |
| WELD | 112 | Welding Math/Blueprint Reading II. | 3 |
| *Term III* | | | |
| WELD | 201L | Welding Metallurgy Theory/Lab III. | 15 |
| WELD | 202 | Blueprint Reading III..... | 3 |
| | | Total ..... | 48 |

*Option*
Supervised Work Experience

*Support Courses*
See page 95.

## COURSE DESCRIPTIONS

**WELD 101L—Welding Metallurgy Theory/Lab I (12 cr)**
This class teaches welding safety, general tools and equipment, common gases and their properties, welding materials, welding joints, oxyacetylene welding and brazing, thermal cutting, and shielded metal-arc welding procedures and processes. Instruction is offered in manufacturing processes, structure and properties of metal, temperature changes in welding, effects of alloying elements, variations of fluxes, and slags and gases for shielding. This course meets 20 hours per week for 15 weeks.

**WELD 102—Welding Mathematics/Blueprint Reading I (3 cr)**
This is a course in basic drawing interpretation, welding symbols, terms and detailed fittings applied to the welding area. Instruction also is provided in basic arithmetic. Surface and direct measurements, graphs and charts, and payroll calculations are studied. This course meets five hours per week for 15 weeks.

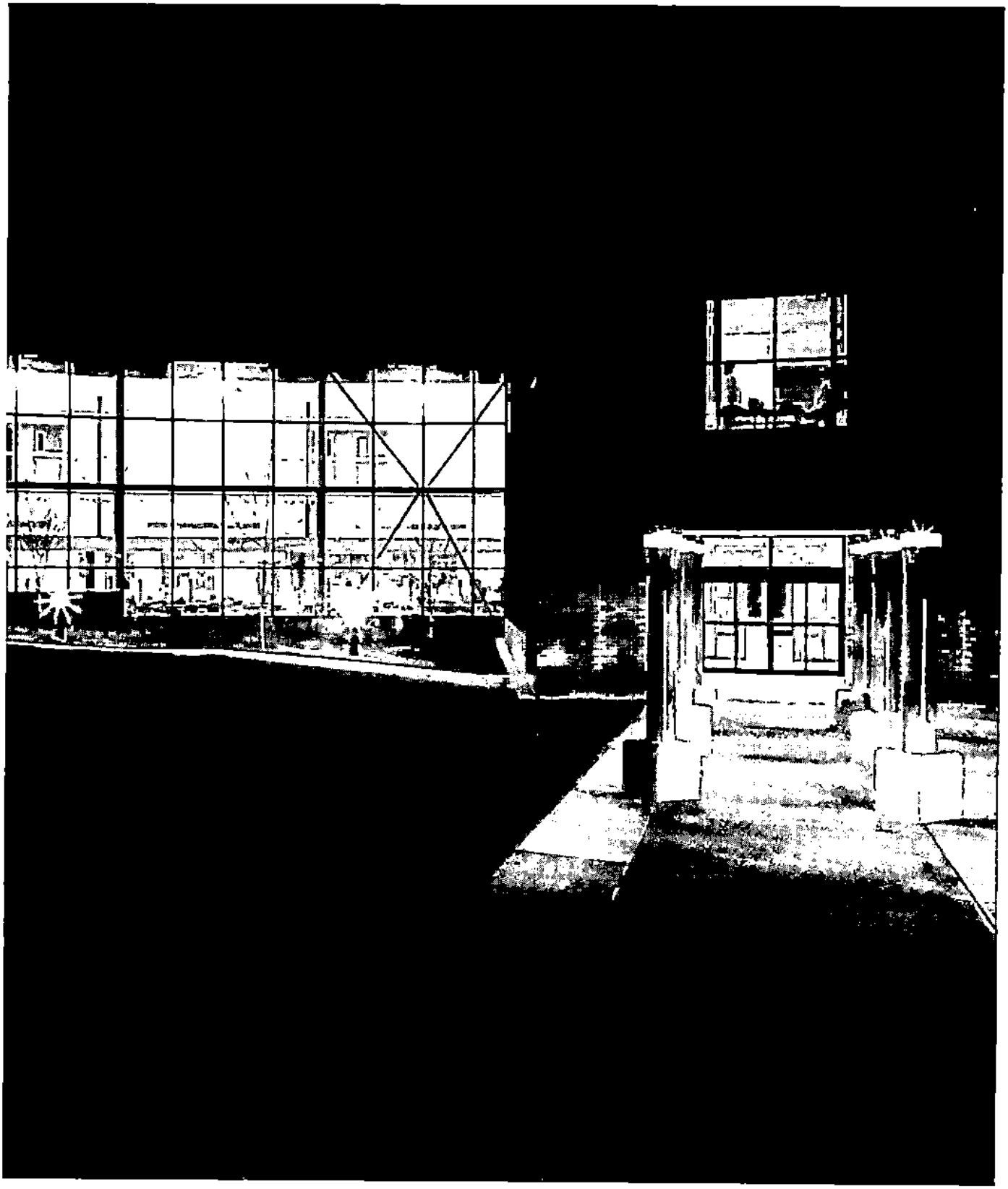
**WELD 111L—Welding Metallurgy Theory/Lab II (12 cr)**
(*Prerequisite: WELD 101L or equivalent*) This course provides advanced instruction in shielded arc and gas metal-arc welding, and beginning instruction in gas tungsten-arc welding. Students learn about filler metal for joining iron, steel and nonferrous metals, shrinkage and distortion in weldments, preheating and postheating, difficulties and defects in welds, welding carbon and alloy steels, welding tests, conversion factors and symbols, weights and properties. This course meets 20 hours per week for 15 weeks.

**WELD 112—Welding Mathematics/Blueprint Reading II (3 cr)**
(*Prerequisite: WELD 102 or equivalent*) This course offers blueprint reading instruction in which the student reads commercial construction and fabrication drawings, complex detail section and assembly drawings related to the welding field. Rules, formulas, ratio, proportion, volume and right-angle calculations also are covered. This course meets five hours per week for 15 weeks.

**WELD 201L—Welding Metallurgy Theory/Lab III (15 cr)**
(*Prerequisites: WELD 111L, WELD 112 or equivalent*) Working speed and proficiency are emphasized through various practical fabrication and repair assignments. Instruction is provided in basic pipe welding and layout, materials testing and industrial safety. The course also deals with welding problems; welding processes used for carbon steels, stainless steels, aluminum and pipe; procedures, layout used in fabrication and AWS inspection standards. This course meets 25 hours per week for 15 weeks.

**WELD 202—Blueprint Reading III (3 cr)**
(*Prerequisite: WELD 112 or equivalent*) This lab course teaches development of templets for various types of pipe and fabrication welding, materials estimating, pipe layout and development, pipe and structural print reading, performance of pipe qualification tests for the basic intersections, transferring of measurements from working drawings and blueprints, design considerations, layout and welding related to fabrication. This course meets five hours per week for 15 weeks.

# CONTINUING EDUCATION DIVISION



# CONTINUING EDUCATION

The Continuing Education Division provides instructional programs in three areas:

- Skill Improvement (credit courses and noncredit workshops to improve job skills, prepare for a career change or explore a new career field);
- Adult Education (pre-12th grade level, including preparation for the GED examination, basic skills, English as a second language and U.S. citizenship courses); and
- Vocational Enrichment Program (offered through local high schools).

This catalog provides detailed information regarding Skill Improvement credit courses and general information about the Adult Education program. Additional information regarding noncredit courses is available from the Continuing Education offices at both T-VI campuses.

# ADULT EDUCATION

T-VI's Adult Education program provides free basic courses which can lead to successful completion of higher education. Adult Education courses offered are: basic reading, basic writing, basic mathematics, English as a second language (ESL), citizenship for naturalization and GED (high school equivalency) preparation. These courses offer the student an opportunity to find a better job and self-improvement.

**HABLEMOS ESPANOL:** El programa de Educación para Adultos ofrece la oportunidad al alumnado de tomar cursos de educación elemental, los cuales pudiésen conducir a la terminación satisfactoria de una educación superior. Los cursos que dicho departamento ofrece son los siguientes: lectura y escritura, aritmética, inglés como segundo idioma, clases de ciudadanía y cursos preparatorios para el exámen de GED. Estos cursos brindan al alumno la oportunidad de superarse personalmente asi como la de obtener un empleo mejor remunerado. La instrución es absolutamente gratuita.

**REGISTRATION:** Persons wanting to take an Adult Education course should begin by registering in person at either T-VI campus. Adult Education courses follow the T-VI schedule, with 15-week terms beginning in September, January and May. Registration begins one month before courses start.

A Continuing Education Division staff member will help with course selection to meet individual needs and schedules. During the term, staff is available at both Main and Montoya campuses Monday through Thursday from 8 a.m. to 9 p.m. and Friday from 8 a.m. to 5 p.m.

**LOCATIONS:** Adult Education courses are offered at T-VI's Main and Montoya campuses and other locations throughout the Albuquerque area. Current off-campus sites include:

Cañoncito Community School, Cañoncito
East Central Multi-Service Center, 7525 Zuni SE
El Buen Samaritano, 700 Granite NW
Emerson Elementary School, 620 Georgia SE
Ernie Pyle Middle School, 1820 Valdora SW
Eugene Field Elementary School, 700 Edith Blvd. SE
Garfield Middle School, 3501 Sixth NW
Holy Family School, 562 Atrisco SW
John Marshall Multi-Service Center, 1500 Walter SE
La Mesa Elementary School, 7500 Copper NE
Los Padillas Community Center, 2117 Los Padillas Rd. SW
Nativity School, 9502 Fourth NW
Polk Middle School, 2220 Raymac SW
Reginald Chavez Elementary School, 2700 Mountain Rd. NW
Rio Grande High School, 2300 Arenal SW
San Jose Cursillo Center, 2401 Broadway SE
Valle Vista Elementary School, 1700 Mae Ave. SW
West Mesa High School, 6701 Fortuna NW

Persons or groups interested in additional Adult Education courses in the community should contact the Continuing Education Division. It may be possible for T-VI to provide courses at locations not listed here.

**TUITION AND FEES:** There are no tuition charges or fees for Adult Education courses.

**TEXTBOOKS:** Textbooks are provided free to students.

**STANDARDS OF PROGRESS:** Students must attend at least 80 percent of the course sessions to receive a certificate. No letter grades are given.

**ATTENDANCE:** Teachers take attendance at each course session and turn in monthly absence reports. If a student is absent four course sessions in a row, the teacher tries to contact the student. A student

may be dropped from the course after four consecutive absences.

**STUDENT RECORDS:** The Continuing Education Division maintains permanent records which include the date a student enrolled in a course, date completed or dropped, total number of course hours and hours attended, and whether a certificate was issued to the student. Transcripts are furnished upon student request by the Continuing Education Division Office. The first transcript is free; a fee is charged for any additional transcripts. *At least 48 hours must be allowed to process transcript requests.*

## ADULT EDUCATION COURSES

**AMNESTY:** Adults applying for permanent resident status through the Amnesty Program must meet certain educational requirements. Amnesty courses consist of basic English, literacy and beginning U.S. history and government. Satisfactory completion of this course is necessary for the issuance of the I-699 (certificate of satisfactory pursuit).

**ESL:** English as a second language courses are for persons learning to speak English. Most of the coursework is in speaking and listening although some written work is given.

### BEGINNING ENGLISH AS A SECOND LANGUAGE

This course is for students who do not speak English and for those who have never studied English before. The course uses a conversational approach to learning English. Linguistic differences and teacher recommendations will be considered for proper placement of students in the course.

### INTERMEDIATE ENGLISH AS A SECOND LANGUAGE

This course is for students who have completed Beginning ESL or persons who speak some English. It is a continuation of the beginning course with emphasis on speaking and writing.

### ADVANCED ENGLISH AS A SECOND LANGUAGE

Students who have had a previous conversational English course and persons who can speak some English but need additional practice may take this course. Speaking, writing and basic grammar are taught.

**BASIC SKILLS:** These courses offer a general review of grammar, spelling, basic mathematics and reading improvement.

### BEGINNING LITERACY

This course helps students learn the most basic skills for reading and writing in English. It is especially for those with little formal education or whose language does not use the same written alphabet as English. The course includes letter formation (printing and cursive), relation between English sounds and letters, reading and writing single words and short sentences, and filling out short application forms.

### BEGINNING READING IMPROVEMENT AND SPELLING

This is a beginning literacy course for English speakers who have difficulty reading and recognizing words. It improves the student's reading ability and understanding of what is read. Word recognition, spelling and sight vocabulary are included.

### INTERMEDIATE READING IMPROVEMENT AND SPELLING

This course improves the student's ability to read and understand what is read. Textbooks and audiovisual aids are used to help improve reading, comprehension and spelling.

### ADVANCED READING IMPROVEMENT AND SPELLING

This advanced reading course is for students who can read but want to improve comprehension and reading speed. *This is not a speed reading course.* Audiovisual equipment and other reading materials are used for speed, comprehension, retention and spelling.

### BEGINNING BASIC ENGLISH GRAMMAR/SPELLING

This course is recommended for students who can function in the English language or have taken at least three terms of conversational English, or students who have difficulty reading and writing the English language. Included are grammar, speech correction, oral expression, writing, spelling and phonetics.

### ADVANCED BASIC ENGLISH GRAMMAR/SPELLING

Persons who need English grammar and spelling review or reinforcement will benefit from this course. This is a structured English grammar course which may be taken by high school graduates for review purposes.

### COMBINATION BASIC MATHEMATICS AND ENGLISH GRAMMAR

This course is for students who want to improve their basic English (including spelling) and mathematics. Students are divided according to abilities and individual instruction is given in mathematics.

### BASIC MATHEMATICS

This course helps students understand addition, subtraction, multiplication and division of whole numbers, fractions, decimals and word problems. The student learns how to use math in household budgeting, borrowing money, insurance, distance/area measurements, and other everyday problems. Percent is covered. Advanced basic math topics are introduced.

### CITIZENSHIP PREPARATION

In this course students study U.S. history, government, citizens' rights and requirements for U.S. citizenship, and practice answers to questions which may be on the test.

**GED:** This course prepares students for the General Educational Development (GED) examination for a high school equivalency diploma. The five

areas covered for the GED exam are writing skills, social studies, science, literature and mathematics. Much of the course can be planned for the individual student and may be completed at the student's own pace. Students are encouraged to take the GED examination at the end of the term, but those with demonstrated ability may take the test earlier. All textbooks are furnished to the student free. The GED test fee is $2.25.

*Prerequisite: Persons wanting to take the GED exam or GED preparation courses must be at least 18 years old and must not be enrolled in any high school. A person who is 17 years old may enroll only if released from the New Mexico State Compulsory School Attendance Law and if granted a GED Underage Permission form. Underage Permission forms are available in the Testing Center at both T-VI campuses.*

# Vocational Enrichment Program

The Vocational Enrichment Program (VEP) provides vocational courses for high school students as well as for adults at Albuquerque public high schools. These courses are offered in many subject areas and are taught after regular school hours.

Instructors for the Vocational Enrichment Program are certified as secondary education instructors by the state of New Mexico and are usually members of the regular faculty of that high school.

Course lists and additional information are available from high school counselors and both T-VI Continuing Education offices. VEP courses are available at all public high schools except Albuquerque High School.

# SKILL IMPROVEMENT CREDIT COURSES

Skill Improvement courses assist adults in improving their job skills for career advancement, preparing for a career change and exploring a new career field.

Continuing Education Division courses that carry the same course numbers as courses offered by T-VI's Instructional Division are approved for use in certificate and degree programs.

Course grades become part of a student's official transcript upon admission to a T-VI certificate or degree program.

Not all courses can be substituted in an Instructional Division program on a one-to-one basis. In some cases, it takes two or more Continuing Education courses to equal one Instructional Division course. Such partial courses are indicated as Part A, B . . . etc. in their titles.

**ADMISSION:** Skill Improvement courses are open to adults, high school juniors and seniors and T-VI students. Some courses require prerequisites which must be met prior to enrollment.

Courses listed in this section are regular credit courses and are subject to all rules and regulations in the current T-VI Catalog.

Registration is taken on a space available basis. Every effort will be made to place all applicants in courses. If fewer than 15 persons have applied for a course, it may be canceled.

## Tuition and Fees

**TUITION:** Skill Improvement courses are tuition free to New Mexico residents. Persons who have not lived in New Mexico for 12 consecutive months prior to the first day of courses must pay nonresident tuition.

Those interested in courses for personal knowledge only, with no desire for academic credit, may register for Skill Improvement courses as auditors. The audit status allows class participation but does not require the taking of exams, etc. The course is listed on the transcript as "AUDIT." Nonresident tuition and registration fees are the same for audit as for credit.

**REGISTRATION FEE:** There is a $17-per-term registration fee for Skill Improvement courses (regardless of the number of courses taken).

**LABORATORY FEES:** In some courses, there is a laboratory fee to cover the cost of supplies and materials used in the course. Laboratory fees listed in this catalog are subject to change.

**TEXTBOOKS:** Textbooks are required for most Skill Improvement courses. Students must purchase their own textbooks. The cost of textbooks for a specific course may range from $8 to $65. Information about required textbooks and costs is available from the T-VI Bookstores.

**REFUNDS:** *Registration, lab and tuition fees* will be refunded if the applicant cannot be placed in a course. Students who withdraw from a course before the refund deadline may apply for a refund of their *lab and tuition fees* but not the registration fee. Refund checks are issued by the Continuing Education Division office at Main Campus. *No refunds are given after the first two weeks of the course.*

Textbook refunds are made by the T-VI Bookstores.

## Registration

Persons who want to take a Skill Improvement course should register early for the best chance of placement.

To complete the registration process, applicants will:

- **Submit a separate registration form for each course desired.** Forms are available at both T-VI campuses and all branches of the Albuquerque Public Library. Registration is handled on a continuous basis for each term. Deadlines are listed in the T-VI calendar (page 5). Continuing Education Division office hours at both campuses are 8 a.m. to 9 p.m., Monday through Thursday, and 8 a.m. to 5 p.m. on Friday during the term.
- **Pay required fees.** The $17 registration fee is paid only once per term, regardless of the number of courses taken. Lab fees and nonresident tuition are payable at the time of registration.
- **Receive notification.** Applicants will be notified about placement in courses.

**STANDARDS OF PROGRESS:** T-VI grading systems and attendance policies listed on pages 17–18 of this catalog apply to all Continuing Education credit courses.

**STUDENT RECORDS:** Permanent records kept by the Continuing Education Division include the date a student enrolled in a course, date completed or dropped, total number of course hours, total number of hours the student attended, final grade, credit hours and whether a certificate was awarded to the student. The words per minute attained in a typing or shorthand course also are noted when applicable.

Transcript information is automatically transferred to the official T-VI transcript upon admission to the Instructional Division.

The Continuing Education Division will furnish transcripts whenever requested by a student. The first transcript is free; a fee is charged for any additional transcripts. *Please allow 48 hours to process transcript requests.*

# Business Education

## ACCOUNTING

### ACCT 101A: ACCOUNTING PRINCIPLES LAB I (B) (3 cr)

(*Prerequisites: MATH 099, Reading Improvement 099 or equivalent*) Principles of the double entry accounting system including recording transactions, adjusting accountings, preparing statements, closing accounts of proprietorship, partnerships and corporations, merchandise and cash accounts, and accounting systems are thoroughly covered. Business forms and terms, accuracy, neatness, orderliness and responsibility are included. The lab meets for five hours per week. Personal equipment and supply fee $7.50.

*NOTE: Students may be required to furnish their own calculators.*

### ACCT 101B: ACCOUNTING PRINCIPLES LAB I (I) (3 cr)

(*Prerequisites: ACCT 101A, ACCT 111*) This is a continuation of ACCT 101A. Units cover accounts receivable, inventories, cost of goods sold; plant and equipment accounts, tangible and intangible assets, current and long-term liabilities, and payroll accounting. The lab meets for five hours per week. Personal equipment and supply fee $7.50.

*NOTES: Students may be required to furnish their own calculators.*

*Upon completion of ACCT 101A and ACCT 101B, Instructional Division credit for ACCT 101L may be awarded.*

### ACCT 102A: ACCOUNTING PRINCIPLES LAB II (B) (3 cr)

(*Prerequisites: ACCT 101B, ACCT 111*) A continuation of ACCT 101B, this course covers various aspects of corporate accounting, notes and bonds, departmental accounting, and accounting for manufacturing. The lab meets for five hours per week. Personal equipment and supply fee $7.50.

*NOTE: Students may be required to furnish their own calculators.*

### ACCT 102B: ACCOUNTING PRINCIPLES LAB II (I) (3 cr)

(*Prerequisites: ACCT 102A, ACCT 111*) This course is a continuation of ACCT 102A. It covers cost accounting, job orders, master budgets, profit analysis, standard costs, managerial decisions and tax considerations. The lab meets for five hours per week. Personal equipment and supply fee $7.50.

*NOTES: Students may be required to furnish their own calculators.*

*Upon completion of ACCT 102A and ACCT 102B, Instructional Division credit for ACCT 102L may be awarded.*

### ACCT 111: ACCOUNTING MATH (3 cr)

This course covers basic arithmetic operations, familiarizes the student with a wide range of accounting procedures for which mathematics is required, and develops touch method skills using electronic calculators. This course meets for five hours per week.

### ACCT 240: TAX ACCOUNTING I (3 cr)

(*Prerequisite: ACCT 101B*) This course primarily examines the fundamental characteristics of federal income taxes as applied to individuals. This course meets for five hours per week.

### ACCT 241: TAX ACCOUNTING II (3 cr)

(*Prerequisite: ACCT 240*) This course examines corporations, estate and gift taxes, fiduciaries, tax planning and tax shelters. This course meets for five hours per week.

### ACCT 252: COMPUTER LAB I (3 cr)

(*Prerequisites: ACCT 102L, BA 150*) This IBM-compatible microcomputer lab uses LOTUS 1-2-3 for accounting and business applications. The lab meets for five hours per week.

### ACCT 253: COMPUTER LAB II (3 cr)

(*Prerequisites: ACCT 102L, BA 150*) This microcomputer lab includes payroll, inventory control, accounts payable, accounts receivable and general ledger. Students use prepared integrated business software on microcomputers. The lab meets for five hours per week.

### ACCT 260: COST ACCOUNTING (3 cr)

(*Prerequisite: ACCT 102L*) This course emphasizes job order and process costing for construction and manufacturing. This course meets for five hours per week.

### ACCT 270: GOVERNMENTAL ACCOUNTING (3 cr)

(*Prerequisite: ACCT 102L*) This course provides the student with additional training in accounting for governmental and other nonprofit entities. This course meets for five hours per week.

### ACCT 271: AUDITING (3 cr)

(*Prerequisite: ACCT 102L*) Auditing procedure, reports and working papers are studied and analyzed. Audit practices for verification of assets, liabilities, expense and revenue accounts are stressed. Internal control techniques are studied to develop the student's ability to conserve assets. This course meets for five hours per week.

### ACCT 280: MANAGERIAL ACCOUNTING (3 cr)

(*Prerequisite: ACCT 102L*) Students learn how accounting data can be interpreted and used by management in planning and controlling business activities. This course meets for five hours per week.

## BUSINESS ADMINISTRATION

### BA 111: COMMUNICATIONS (7½ weeks) (2 cr)

(*Offered for Trades and Technologies students only*) The primary focus of this course is to develop effective communications skills. Course content includes fundamentals of grammar, punctuation and word usage. Effective expression in basic technical writing is stressed. This course meets for five hours per week.

### BA 113: INTRODUCTION TO BUSINESS (7½ weeks) (2 cr)

The structure of business, its activities and problems are surveyed in this course. An understanding of the nature of the business world and its career opportunities also is provided. This course meets for five hours per week.

### BA 121: BUSINESS COMMUNICATIONS I (3 cr)

The student learns to communicate effectively through the study of writing fundamentals. Students also have the opportunity to develop oral and listening skills. This course meets for five hours per week.

### BA 122: BUSINESS COMMUNICATIONS II (3 cr)

(*Prerequisites: BA 121 and 25 words a minute typing skill*) The student learns to write effective business letters, reports and memoranda. Continued use of oral communication and listening skills is stressed. This course meets for five hours per week.

### BA 131: HUMAN RELATIONS (7½ weeks) (2 cr)

(*Available also for Trades and Technologies students*) This course deals with employee attitudes toward themselves and others. The importance of interpersonal relationships and work ethics is stressed. This course meets for five hours per week.

### BA 133: PRINCIPLES OF MANAGEMENT (3 cr)

This introductory course helps the student understand basic management functions including planning, organizing, staffing, directing and controlling. This course meets for five hours per week.

### BA 150: INTRODUCTION TO COMPUTER PROCESSING (3 cr)

(*Prerequisite: 25 words a minute typing skill*) This course covers automated information systems, computer hardware, data entry and business software applications. Hands-on experience with microcomputers is provided. This course meets for five hours per week.

### BA 211: BUSINESS LAW (3 cr)

This course provides a basic knowledge of law as it applies to all business dealings in our society. Particular emphasis is on the Uniform Commercial Code. Practical problems in law are considered. This course meets for five hours per week.

### BA 215: MONEY AND BANKING (3 cr)

(*Prerequisite: ACCT 102L*) This course covers the history, nature and function of money. Methods of institutional control and theories of monetary policy are included. This course meets for five hours per week.

### BA 222L: PRINCIPLES OF MARKETING LAB (3 cr)

(*Prerequisites: ACCT 101L, BA 133*) This course is designed to study total marketing concepts—from the creation of the product, pricing and promotion to the distribution network—from a management point of view. A computer simulation project is included. This course meets for five hours per week.

### BA 226: PRINCIPLES OF FINANCE (3 cr)

(*Prerequisite: ACCT 102L*) Concepts and theories of finance are covered including the history of money, monetary systems and credit. Forms of business organizations, capital budgeting, source of funds, marketing securities, capital structure, foreign expansion and reorganization of a business firm are examined. This course meets for five hours per week.

### BA 240: INVESTMENTS (3 cr)

(*Prerequisite: ACCT 102L*) Students study investment analysis, management, objectives, values and risks. This course meets for five hours per week.

### BA 251: RETAIL MERCHANDISING MANAGEMENT (3 cr) Generally Offered Summer Term

(*Pre- or corequisite: BA 222L or advisor's permission*) Students study methods and practice of retail merchandising including target market decisions, buying, pricing, store locations and strategic planning. Computer lab assignments are included. This course meets five hours a week.

### BA 255: DESKTOP PUBLISHING (3 cr)

(*Prerequisites: BA 150 or SS 132 and SS 133 or advisor's permission*) The students will be given hands-on experience in desktop publishing. The course covers the major elements of the publishing process—editing, typesetting, design, graphic production and page makeup using a microcomputer. This course meets for five hours per week.

### BA 256: EMPLOYMENT PROCEDURES AND TECHNIQUES (7½ weeks) (2 cr)

This course provides the requisite skills for success in obtaining employment. Specific topics include preparation of cover letters and resumés, interviewing skills, telephone usage in the job search, test-taking techniques and projecting a positive attitude and self-confidence. This course meets for five hours per week.

### BA 260: PURCHASING (3 cr)
**Generally Offered Winter Term**

This course covers problems involved in public and private sector purchasing. Topics include value analysis, solicitation process and negotiation techniques, vendor selection, purchasing law, transportation considerations and inventory control practices. This course meets five hours a week.

### BA 270: REAL ESTATE LAW (3 cr)

The rights and obligations of the real estate agent with regard to contractual and fiduciary duties owed to the parties being represented are established in this course. Major topics include ownership rights, law of agency and law of contracts. This course meets four hours a week.

*NOTE: This course meets for 12 weeks except for the Saturday sessions, which meet for 15 weeks.*

### BA 271: REAL ESTATE PRACTICE (3 cr)

This is a course in general real estate practice for persons needing a review or wanting a basic knowledge of the real estate business. This course meets four hours a week.

*NOTE: This course meets for 12 weeks except for the Saturday sessions, which meet for 15 weeks.*

### BA 272: REAL ESTATE APPRAISAL (3 cr)

(*Prerequisite: BA 271*) An introduction to accepted methods for estimating the value of real property, this course covers fundamentals of real estate appraisal of both land and improved property and techniques used by professional appraisers. This course meets four hours a week.

*NOTE: This course meets for 12 weeks.*

### BA 273: REAL ESTATE FINANCE (3 cr)

(*Prerequisite: BA 271*) This is a study of financing real property, the money market, sources and cost determinants of mortgage money, financial leverage, value of existing mortgage in relation to the current market and purchaser qualification. This course meets four hours a week.

*NOTE: This course meets for 12 weeks.*

### BA 274: REAL ESTATE INVESTMENT (3 cr)

(*Prerequisites: BA 270, BA 271*) This course gives the student a basic understanding of investment principles to ensure sound investment decisions and assessment of property potential. The student gains an awareness of the marketplace and the needs of the public through text, lecture and case study. This course meets four hours a week.

*NOTE: This course meets for 12 weeks.*

### BA 275: PROPERTY MANAGEMENT (3 cr)

This course covers residential and commercial rental property management. Topics include marketing of services, market and prospect analysis, recordkeeping, laws relating to rental properties, legal documents including leases and management contracts, property maintenance, employee relations, insurance, security and administration. This course meets four hours a week.

*NOTE: This course meets for 12 weeks.*

### BA 277: REAL ESTATE COMPREHENSIVE CONTRACTS (3 cr)

(*Prerequisites: BA 270, BA 271*) Instruction is provided in contract law relating to basis of equipment and premises, buyer-seller-agent relationships, basis of law governing contracts, written contracts, misrepresentations, special relationships and contract remedies. This course meets four hours a week.

*NOTE: This course meets for 12 weeks.*

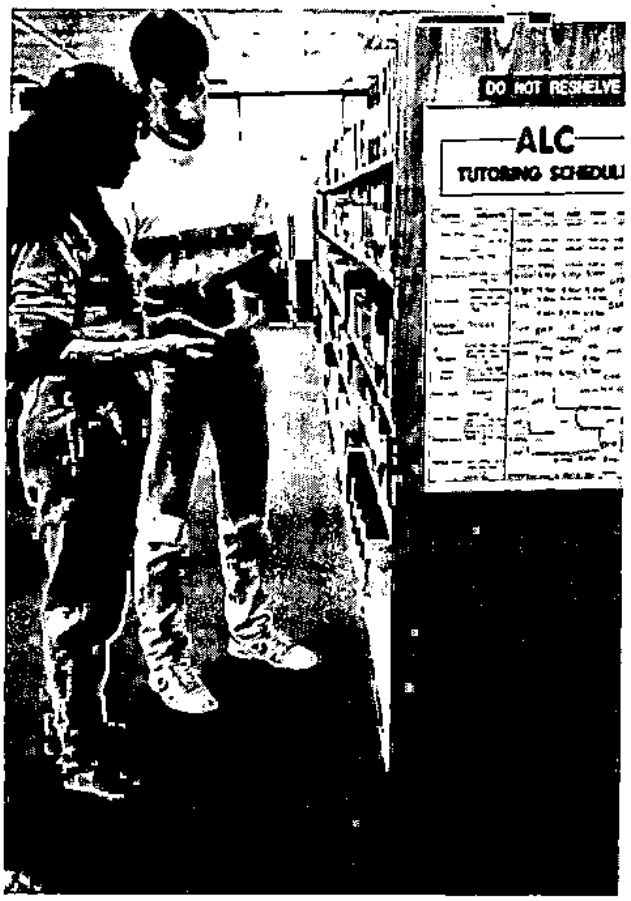
### BA 278: REAL ESTATE AND TAXES (3 cr)

(*Prerequisites: BA 270, BA 271*) This course deals with government involvement in real estate and taxes. Units cover municipal and state taxes affecting real estate, and the federal government's role in the sale and income derived from real estate. This course meets four hours a week.

*NOTE: This course meets for 12 weeks.*

### BA 284: SALESMANSHIP (3 cr)

Personal selling skills are accented along with how to promote oneself, goods and services. This course meets five hours per week.



### BA 285: FASHION CONCEPTS AND MERCHANDISING (3 cr)

This introductory course covers fashion terminology, elements of design, apparel sizing and styling, basic construction and current trends in the fashion industry. This course meets five hours per week.

### BA 286: ADVERTISING (3 cr)
**Generally Offered Fall Term**

This course gives the student a basic understanding of the many elements of advertising. The advertising plan, media selection and schedule, budget, design and production, and advertising effectiveness are included. This course meets five hours per week.

## SECRETARIAL STUDIES

### SS 101A: TYPING LAB I (B) (3 cr)

Typing by the touch method and basic arrangement of business letters, memos, reports, tables and forms are included. A minimum typing speed of 25 words per minute should be attained in this course. This course meets five hours per week. Personal equipment and supply fee $7.50.

### SS 101B: TYPING LAB I (I) (3 cr)

(*Prerequisite: SS 101A*) Basic typing skills are reviewed with emphasis on building speed, accuracy and number control. Production emphasis is on business letters, reports and forms. A minimum typing speed of 40 words per minute should be attained in this course. This course meets five hours per week. Personal equipment and supply fee $7.50.

*Upon completion of SS 101A and SS 101B, Instructional Division credit for SS 101L may be awarded.*

### SS 111: BUSINESS MATHEMATICS/ CALCULATORS (3 cr)

(*Prerequisite: MATH 099 or equivalent*) This course features a combined approach to teaching business mathematics and calculators. Students receive a thorough review of math fundamentals and their applications in solving business problems. Calculator instruction stresses use of the touch method. This course meets five hours per week.

### SS 112: SECRETARIAL ACCOUNTING (3 cr)

(*Prerequisite: SS 111, SS 132*) This course is a study of the complete bookkeeping cycle including preparation of the balance sheet, income statement and worksheet. Emphasis is on journalizing, posting, accounts payable and accounts receivable. Payroll accounting also is covered. Students work on a computerized package covering accounts receivable, accounts payable, and payroll. This course meets five hours per week.

*NOTE: Students may be required to furnish their own calculators.*

### SS 113: CASHIERING (3 cr)

Operation of the cash register, including the ability to solve procedural problems that occur at a register and checkout station, is developed in this course. Instruction also focuses on bank teller applications, fundamentals of retail sales, and store security. This course meets five hours per week.

### SS 133: WORD PROCESSING (3 cr)

(*Prerequisites: SS 101L, SS 132 or permission of academic advisor*) Students learn word processing software on the microcomputer. Emphasis is on practical office applications. This course meets five hours per week.

### SS 134: SHORTHAND I (GREGG) (3 cr)

This introductory course covers the theory and writing of Gregg shorthand. Transcription skills are introduced. This course meets five hours per week.

### SS 135: SHORTHAND I (ALPHABETIC) (3 cr)

Reading and writing of ABC Stenoscript shorthand is learned. Transcription skills are introduced. This course meets five hours per week.

### SS 136: SHORTHAND II (3 cr)

(*Prerequisites: SS 134 or SS 135 or knowledge of theory of a shorthand system and a minimum typing skill of 25 words a minute on a five-minute timed writing or SS 101L*) The goal for this course is a minimum dictation speed of 70 words per minute on new materials and transcription at a minimum rate of 14 words per minute. This course meets five hours per week.

### SS 204L: LEGAL TYPING I (3 cr)

(*Prerequisite: SS 102L and corequisite: SS 240*) Typing competence of at least 55 words per minute is the goal of this course. Instruction includes the preparation of mailable legal correspondence and forms from audio tape, typed copy and preprinted forms. This course meets five hours per week. Personal equipment and supply fee $7.50.

### SS 240: LEGAL TERMINOLOGY/ PROCEDURES (3 cr)

Meaning and spelling of legal terminology, familiarization with legal procedures, and client relationships are included in this course. This course meets five hours per week.

### SS 250: MACHINE TRANSCRIPTION (3 cr)

(*Prerequisites: SS 102L, SS 122*) This course builds speed and accuracy in the transcription of mailable copy at a minimum rate of 20 words per minute. This course meets five hours per week.

### CERTIFIED PROFESSIONAL SECRETARY (CPS) REVIEW

CPS is the recognized rating that measures secretarial proficiency. The review course helps prepare individuals to take the Certified Professional Secretary examination. Secretarial and clerical personnel who have experience will benefit from taking these courses.

The six-part examination is administered each May by the Institute for Certifying Secretaries. Upon successful completion of the CPS exam, T-VI will accept a possible 34 hours credit toward the Associate in Applied Science Degree in Secretarial Studies. For transfer information, contact the Secretarial Studies program advisor at either campus.

**SS 270: CERTIFIED PROFESSIONAL SECRETARY REVIEW, PART I (3 cr)**

Topics covered are behavioral science in business, business law, and economics and management. This course meets three hours a week.

**SS 271: CERTIFIED PROFESSIONAL SECRETARY REVIEW, PART II (3 cr)**

Topics covered are accounting, office administration and communications, and office technology. This course meets three hours a week.

## ENTREPRENEURSHIP

**ENTR 101L: ENTREPRENEURSHIP (6 cr)**

During the term the instructor meets with each student to determine specific goals, problems or needs. Programs are then tailored to the individual. Daily tasks/activities are accomplished through lecture, group activities and independent work. This course meets 10 hours a week. Personal equipment and supply fee $15.00.

# Technical Education

## ARCHITECTURAL/ENGINEERING DRAFTING TECHNOLOGY

**ARDR 103: RESIDENTIAL MATERIALS AND METHODS (3 cr)**

Properties of building materials are related to building design and construction methods. Blueprint reading, zoning, building codes, material estimates, energy conservation, and alternative building technologies are covered. The student learns the City of Albuquerque's requirements for obtaining a building permit. This course meets five hours a week.

**ARDR 105A: RESIDENTIAL DRAFTING (2½ cr)**

(*Prerequisites or corequisites: ARDR 103, ARDR 104L*) General drafting theory and techniques needed to produce construction drawings and related documents for residential structures are covered. This course has 1½ hours of theory and 3½ hours of laboratory per week.

**SUPPLY FEE: $15**

*NOTE: Students must provide their own instruments and supplies.*

**ARDR 105B: RESIDENTIAL DRAFTING (2½ cr)**

(*Prerequisite: ARDR 105A*) Graphic skills related to residential construction drawings are emphasized. The use of manufacturers' technical data and standard reference works is covered. This course has 1½ hours of theory and 3½ hours of laboratory per week.

**SUPPLY FEE: $15**

*NOTES: Students must provide their own supplies.*

*Upon completion of ARDR 105A and ARDR 105B, Instructional Division credit for ARDR 105L may be awarded.*

**ARDR 106L: INTRODUCTION TO CAD (2 cr)**

(*Prerequisite or corequisite: ARDR 105L*) This course includes an introduction to the microcomputer and its operating system, text and basic concepts in computer assisted drafting (CAD). This course has two hours of theory and three hours of laboratory per week.

**SUPPLY FEE: $10**

**ARDR 118L: ARCHITECTURAL COMPUTER ASSISTED DRAFTING (CAD) (2 cr)**

(*Prerequisite: ARDR 106L*) The student builds on CAD skills developed in Introduction to CAD. Intermediate drawing and editing commands are learned and electronic spreadsheets are introduced. This course has two hours of theory and three hours of laboratory per week.

**SUPPLY FEE: $10**

**ARDR 172: ARCHITECTURAL RENDERING (3 cr)**

(*It is suggested that ARDR 173 be taken prior to this course.*) Techniques in architectural rendering and illustration are explored. Students work with axonometric and perspective drawings in a variety of media such as pencil sketching, inking and color. This course has one hour of theory and four hours of laboratory per week.

**SUPPLY FEE: $10**

*NOTE: Students must provide their own supplies.*

### ARDR 175: GENERAL CONTRACTOR PREPARATION (3 cr)

This class is designed for persons interested in becoming general contractors in New Mexico. Licensing requirements, rules and regulations, business and law, the Uniform Building Code, construction methods and contract management are covered. This course meets five hours per week.

### ARDR 271: CONSTRUCTION MANAGEMENT (3 cr)

(*Prerequisite: ARDR 105L; corequisite: ARDR 116*) This course covers basic management systems required for effective project planning and scheduling; cost estimating, budgeting and cost control accounting; quality assurance; materials management; and the interrelationships among each. Students analyze how well and widely these systems are used in industrial, utility and commercial segments of construction. Microcomputer software is used where applicable. This course has four hours of theory and one hour laboratory per week.

### ARDR 272: COMPUTER ESTIMATING (3 cr)

(*Prerequisite: ARDR 105L; corequisite: ARDR 116*) Determination of probable costs of construction projects is emphasized. Topics include making quantity take-offs, determining local unit costs and job scheduling. Microcomputer software is used extensively. This course has two hours of theory and three hours of laboratory per week.

### DDET 104L: INTRODUCTION TO TECHNICAL DRAFTING (2 cr)

This course is an introduction to fundamental drafting techniques including proper care and use of drafting equipment, lettering, sketching, linework, scaling and geometric construction. This course has three hours of lecture and four hours of laboratory per week.

### DDET 111L: MECHANICAL DETAILING (3 cr)

(*Prerequisite: DDET 104L*) This course introduces the student to the development of detail drawings including layout, view selection, notation, dimensioning, Y-14.5 tolerancing, and revisions of mechanical parts. This course has three hours of lecture and four hours of laboratory per week.

### DDET 116L: BASIC ELECTRONIC DRAFTING (3 cr)

(*Prerequisite: DDET 104L*) This course presents electronic drafting fundamentals including symbolic representation of electronic components and devices, block and connection diagramming, cable drawings and circuit schematics. This course has three hours of lecture and four hours of laboratory per week.

## DATA PROCESSING

### DP 101A: ANSI COBOL (B) (3 cr)

(*Prerequisite or corequisite: DP 102*) Elementary structured programming projects directly related to business and accounting applications are designed, coded, debugged and executed. This course has 2½ hours of theory and 2½ hours of laboratory per week.

### DP 101B: ANSI COBOL (I) (3 cr)

(*Prerequisite: DP 101A*) This course is a continuation of DP 101A. More advanced, structured programming projects are designed, coded, debugged and executed. This course has 2½ hours of theory and 2½ hours of laboratory per week.

*NOTE: Upon completion of DP 101A and DP 101B, Instructional Division credit for DP 101L may be awarded.*

### DP 102: INTRODUCTION TO COMPUTERS/JOB CONTROL LANGUAGE (JCL) (3 cr)

Instruction is provided in computer vocabulary, logic and control, and structured programming techniques including hierarchy charts and topdown planning. Also included are utilities, sorts and JCL for mainframe and microcomputer systems. This course has four hours of theory and one hour of laboratory per week.

### DP 103: COMPUTER MATHEMATICS I (3 cr)

(*Prerequisite: MATH 100 or equivalent*) Algebra fundamentals are covered in this course along with selected business and management math applications. Microcomputers are used to assist in the instructional process. This course meets five hours per week.

### DP 111A: ADVANCED ANSI COBOL (B) (3 cr)

(*Prerequisite: DP 101B*) This course continues the development of structured programming skills developed in DP 101A and DP 101B with emphasis on indexed file processing. This course has 2½ hours of theory and 2½ hours of laboratory per week.

### DP 111B: ADVANCED ANSI COBOL (I) (3 cr)

(*Prerequisite: DP 111A*) This course continues the development of structured programming skills developed in DP 111A with emphasis on file update and subprogram concepts. This course has 2½ hours of theory and 2½ hours of laboratory per week.

*NOTE: Upon completion of DP 111A and DP 111B, Instructional Division credit for DP 111L may be awarded.*

### DP 112A: VSE JCL/VSAM/UTILITIES (B) (3 cr)

(*Prerequisites: DP 101B, DP 102*) Emphasis is placed on the IBM system software including VSESP, JECL, VSE/JCL, VSE/ICCF, library functions, IBM utilities, and spooler, sort/merge, DASD access methods including VSAM, CICS configuration, tables used with COBOL and command level coding. This course has 2½ hours of theory and 2½ hours of laboratory per week.

### DP 112B: VSE JCL/VSAM/UTILITIES (I) (3 cr)

(*Prerequisite: DP 112A*) This course covers advanced VSE functions for release 2.1 with emphasis on advanced data management and label processing concepts, system operation and facilities, and system management techniques. System utilities such as librarian, clear disk and fastcopy are covered. Data protection facilities and VSE interface between POWER, VTAM and CICS are discussed. This course has 2½ hours of theory and 2½ hours of laboratory per week.

*NOTE: Upon completion of DP 112A and DP 112B, Instructional Division credit for DP 112L may be awarded.*

### DP 113: COMPUTER MATHEMATICS II (3 cr)

(*Prerequisite: DP 103*) This course continues the development of algebra, business math skills and introductory statistics. Elementary BASIC programs are used to teach formulas on microcomputers. This course meets five hours per week.

### DP 172L: FORTRAN PROGRAMMING (3 cr)

(*Prerequisite: DP 113 or MATH 150*) This is an introductory course in FORTRAN computer programming. This course has three hours of theory and two hours of laboratory per week.

### DP 173L: PASCAL PROGRAMMING (3 cr)

This course uses microcomputers and covers the Pascal language for personal or mainframe computers. This course has three hours of theory and two hours of laboratory per week.

### DP 174L: BASIC LANGUAGE PROGRAMMING (3 cr)

(*This course is for the non-DP students.*) This introduction to BASIC includes use of input and output statements, arithmetic operations, comparison and branching commands, use of subroutines and the library functions. Algorithms associated with technological computations are developed. This course has three hours of theory and two hours of laboratory per week.

### DP 176L: INTRODUCTION TO MICROCOMPUTERS (3 cr)

Instruction is provided in computer vocabulary. Students learn how to use personal computers to perform tasks related to their studies. This course has three hours of theory and two hours of laboratory per week.

**SUPPLY FEE:** $10

### DP 201L: PROGRAMMING TECHNIQUES (3 cr)

(*Prerequisites: DP 111L, DP 112L*) This course involves development of an interactive, on-line business application using a command level CICS, plus VSAM file handling. This course has three hours of theory and two hours of laboratory per week.

### DP 205A: ASSEMBLY LANGUAGE PROGRAMMING (B) (3 cr)

(*Prerequisites: DP 111B, DP 112B*) Students learn fundamental programming techniques necessary for writing and refining efficient programs in IBM mainframe assembly language. This course has three hours of theory and two hours of laboratory per week.

### DP 205B: ASSEMBLY LANGUAGE PROGRAMMING I (3 cr)

(*Prerequisite: DP 205A*) This course is a continuation of DP 205A. Students learn more complex techniques of writing and refining programs in IBM mainframe assembly language. This course has three hours of theory and two hours of laboratory per week.

*NOTE: Upon completion of DP 205A and DP 205B, Instructional Division credit for DP 205L may be awarded.*

### DP 206L: BASIC LANGUAGE PROGRAMMING (3 cr)

(*Prerequisite: DP 101L or proficiency in another programming language*) This course uses the BASIC language to further the student's knowledge of interactive programming, routines using menu selection, and search and retrieval routines. Also covered are file structures, database techniques, statistics, management methods and string manipulations. Mainframe and/or microcomputers are used. This course has three hours of theory and two hours of laboratory per week.

### DP 207: BUSINESS SYSTEMS ANALYSIS AND DESIGN (3 cr)

(*Prerequisite: DP 111L*) This course teaches structured techniques of systems analysis and design. The systems life cycle is presented, and several methods of analyzing existing systems are covered. Microcomputers are used to write documentation and run project management software. This course meets five hours per week.

### DP 208L: REPORT PROGRAM GENERATOR II (3 cr)

(*Prerequisite: DP 112L*) Students are introduced to the RPG II programming language used in business organizations. This course has three hours of theory and two hours of laboratory per week.

### DP 215L: COMPUTER SYSTEM SOFTWARE (3 cr)

(*Prerequisite: DP 205L*) This course covers topics designed to increase understanding of the use of microcomputers. This includes the study of operating systems, macro assembler programming, and microcomputer software packages. This course has three hours of theory and two hours of laboratory per week.

### DP 217: OPERATING SYSTEMS DESIGN AND IMPLEMENTATION (3 cr)

(*Prerequisite: DP 112L*) This course covers the theory of computer operating systems and introduces the student to the concepts of the Unix operating system. This course has three hours of theory and two hours of laboratory per week.

### DP 218: DATABASE CONCEPTS (3 cr)

(*Prerequisite: DP 207*) General concepts and organization of database systems are included along with practical application of database management systems through the use of networks, telecommunication lines and hardware. Mainframe and/or microcomputers are used. This course has three hours of theory and two hours of laboratory per week.

### DP 219L: C LANGUAGE PROGRAMMING (3 cr)

(*Prerequisite: DP 205L*) This course is an introduction to C programming language using microcomputers. This course has three hours of theory and two hours of laboratory per week.

### DP 220: ADA LANGUAGE PROGRAMMING (3 cr)

(*Prerequisite: DP 201L*) This is an introductory course in ADA language programming. This course has three hours of theory and two hours of laboratory per week.

### DP 297: ADVANCED C LANGUAGE PROGRAMMING (3 cr)

(*Prerequisite: DP 219L*) A continuation of DP 219L, this course assumes considerable programming experience. It stresses modular programming using functions and external source code files. Topics include advanced and structured data types, parameter passing, scope of variables, recursion and external file operations. This course has three hours of theory and two hours of laboratory per week.

# ELECTRONICS TECHNOLOGY

### ELEC 103A: ELECTRONICS FUNDAMENTALS (B) (4.5 cr)

(*Prerequisite: Knowledge of beginning algebra*) This is a study of DC electricity applied to electronics. Instruction includes basic conductor and semiconductor concepts, basic circuits, meters, time constants, relays, and DC properties of inductance and capacity. The laboratory acquaints students with components, circuits, wiring and measurements. This course has 2½ hours of theory and five hours of laboratory per week.

**SUPPLY FEE:** $15

### ELEC 103B: ELECTRONICS FUNDAMENTALS (I) (4.5 cr)

(*Prerequisite: ELEC 103A*) This course covers the principles of component reaction when alternating voltages are applied. The course includes a study of AC analysis in reference to impedance, reactance, vectors, circuit analysis, tuned circuits, transformers and filters. The laboratory includes the use of the oscilloscope as a tool in electronics. This course has 2½ hours of theory and five hours of laboratory per week.

**SUPPLY FEE:** $15

*NOTE: Upon completion of ELEC 103A and ELEC 103B, Instructional Divison credit for ELEC 103L may be awarded.*

### ELEC 104: ELECTRONICS MATHEMATICS (3 cr)

(*Prerequisite: MATH 100 or equivalent*) This course covers algebra and trigonometry with emphasis on DC and AC circuit analysis. This course meets five hours per week.

### ELEC 105L: DIGITAL CIRCUITS (3 cr)

(*Corequisite: ELEC 104 or strong mathematics background*) The fundamental concepts and applications of digital logic circuits are covered. Number systems and arithmetic operations are studied. Boolean algebra is applied to combinational logic. The basic logic gates and MSI and LSI circuits are used to develop operational digital circuits. This course has three hours of theory and three hours of laboratory per week.

**SUPPLY FEE:** $10

### ELEC 114A: SEMICONDUCTOR DEVICES (B) (3 cr)

(*Prerequisite: ELEC 103B*) The basic concepts of semiconductor fundamentals are explored and developed to achieve a thorough understanding of the diode and transistor. Emphasis is placed on approximating transistor amplifying circuits from a practical standpoint. These techniques are verified in the laboratory for both normal and abnormal circuit conditions.

**SUPPLY FEE:** $10

### ELEC 114B: SEMICONDUCTOR DEVICES (3 cr)

(*Prerequisite: ELEC 103B*) Further study of op amps and JFETS and their application in simple power supplies and amplifiers is covered.

**SUPPLY FEE:** $10

*NOTE: Upon completion of ELEC 114A and ELEC 114B, Instructional Division credit for ELEC 114L may be awarded.*

### ELEC 117: INTRODUCTION TO LASERS (3 cr)

(*Prerequisites: ELEC 103L, ELEC 104*) This course introduces the student to the basic operation of the laser. The helium neon laser is used to discuss the nature of light, laser operation and laser safety. This course has three hours of theory and two hours of laboratory per week.

### ELEC 118A: ELECTROMECHANICAL DEVICES (B) (3 cr)

(*Prerequisites: ELEC 103L, ELEC 105L*) This course covers introduction, theory and application of mechanical devices and their control circuits. This course has 2½ hours of theory and 2½ hours of laboratory per week.

### ELEC 118B: ELECTROMECHANICAL DEVICES (I) (3 cr)

(*Prerequisites: ELEC 118A*) Topics include hydraulics, pneumatics, vacuum, AC and DC stepper motors and servomechanisms. Upon completion of both these courses students obtain skills in the assembly, operation and troubleshooting of small scale electromechanical systems. This course has 2½ hours of theory and 2½ hours of laboratory per week.

*NOTE: Upon completion of ELEC 118A and ELEC 118B, Instructional Division credit for ELEC 118L may be awarded.*

### ELEC 203A: INTRODUCTION TO MICROPROCESSORS (B) (3 cr)

(*Prerequisite: ELEC 105L*) The microcomputer is explained using a block diagram consisting of the 8088 CPU, memory and I/O devices. Interconnections, address bus, data bus and control signals are emphasized. Assembly language programs are written to interface wired circuit boards to the microcomputer. An EPROM is included. This course has 2½ hours of theory and 2½ hours of laboratory per week.

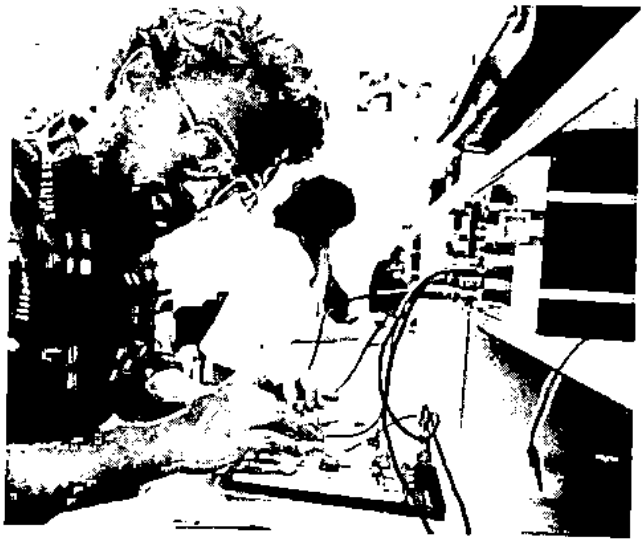
**SUPPLY FEE:** $10

### ELEC 203B: INTRODUCTION TO MICROPROCESSORS (I) (3 cr)

(*Prerequisite: ELEC 203A*) Computer hardware including clock circuitry, bus drivers, input and output ports, and memory is covered. Troubleshooting different computer components is emphasized. This course has 2½ hours of theory and 2½ hours of laboratory per week.

**SUPPLY FEE:** $10

*NOTE: Upon completion of ELEC 203A and ELEC 203B, Instructional Division credit for ELEC 203L may be awarded.*



# Trades and Industrial Education

### ACHR 101A: AIR CONDITIONING, HEATING AND REFRIGERATION THEORY/LAB I (B) (4 cr)

Students learn shop safety, basic tools and equipment, mechanical components and basic refrigeration cycle. Maintenance and servicing, including soldering and brazing, also are covered. Electrical circuits are analyzed, and correct methods for wiring basic circuits are covered. This course meets seven hours per week.

**SUPPLY FEE:** $20

### ACHR 101B: AIR CONDITIONING, HEATING AND REFRIGERATION THEORY/LAB I (I) (4 cr)

(*Prerequisite: ACHR 101A*) More complex systems are introduced. Lab work in diagnosing and servicing small systems is emphasized. This course meets six hours per week.

**SUPPLY FEE:** $20

### ACHR 101C: AIR CONDITIONING, HEATING AND REFRIGERATION THEORY/LAB I (A) (4 cr)

(*Prerequisite: ACHR 101B*) This course covers circuitry and controls commonly used in commercial and industrial applications. Emphasis is on understanding wiring diagrams for installation and troubleshooting purposes. This course meets seven hours per week.

**SUPPLY FEE:** $20

*NOTE: Upon completion of ACHR 101A, ACHR 101B and ACHR 101C, Instructional Division credit for ACHR 101L may be awarded.*

### ACHR 102: CONTROL CIRCUITRY/MATH I (3 cr)

This course is designed to lay the groundwork required for diagnosis and service of refrigeration and electrical equipment with emphasis on DC circuits as applied to Ohm's Law. Students are taught algebra as applied to electricity. This course meets five hours per week.

### ACHR 202A: SHEET METAL THEORY/LAB (B) (4.5 cr)

In this introductory course, students learn pattern layout on paper for heating, air conditioning and general sheet metal and carry it through in the lab to the finished sheet metal fittings. Lessons are custom designed for the needs of students already working in the field and wanting to upgrade their skills. This course meets 7½ hours per week.

**SUPPLY FEE:** $20

### ACHR 202B: SHEET METAL THEORY/LAB (A) (4.5 cr)

(*Prerequisite: ACHR 202A*) This continuation of ACHR 202A provides advanced instruction in the use of tools, safety, pattern development and fabrication. Design, layout and application of air distribution duct systems are covered. Lab projects are oriented toward typical heating and ventilation applications. This course meets 7½ hours per week.

**SUPPLY FEE:** $20

*Upon completion of ACHR 202A and ACHR 202B, Instructional Division credit for ACHR 202L may be awarded.*

## AUTOMOTIVE BODY REPAIR

### AUBO 101A: AUTOMOTIVE BODY REPAIR I (4 cr)

Instruction covers theory and practice in body shop safety, basic body repair tools, dent repair by metal finishing and plastic filler unibody fasteners, and interior detailing. This course meets seven hours a week.

**SUPPLY FEE:** $50

### AUBO 101B: AUTOMOTIVE BODY WELDING (4 cr)

(*Prerequisite: AUBO 101A*) Students learn how to set up and operate oxyacetylene, shielded metal-arc and gas metal-arc welding equipment. Procedures for cutting, welding and brazing automotive sheet metal are covered. This course meets six hours a week.

**SUPPLY FEE:** $40

### AUBO 101C: AUTOMOTIVE BODY REFINISHING (4 cr)

(*Prerequisite: AUBO 101B*) Class will cover the theory and practice of minor body repair, cleaning, sanding, spray gun handling, undercoats with comprehensive refinishing systems, and exterior detailing. This course meets seven hours a week.

**SUPPLY FEE:** $40

*NOTES: Upon completion of AUBO 101A, AUBO 101B and AUBO 101C, Instructional Division credit for AUBO 101L may be awarded.*

*Upon receiving Instructional Division credit for AUBO 101L and AUTC 102, an Automotive Body Repair Detailing certificate may be awarded.*

### AUBO 102/AUTC 102/DIME 102: MATH/BASIC ELECTRICITY (3 cr)

This course teaches the student basic math principles as they relate to measuring tools, equipment, graphs and schematics. The theory of mechanical power, basic electricity principles, related terminology, and electrical component identification also are covered. The students are introduced to diagnosis equipment, testing procedures and theory related to automotive electrical systems troubleshooting and repair procedures. This course meets five hours a week.

## AUTOMOTIVE TECHNOLOGY

### AUTC 101A: AUTOMOTIVE BRAKES (4 cr)

This course offers basic theory and practice in brake system construction, operation and repair. Students overhaul hydraulic brake components, machine drums and rotors on the brake drum lathe. The students also rebuild disc and standard brakes. This course meets six hours a week.

**SUPPLY FEE:** $20

### AUTC 101B: AUTOMOTIVE SUSPENSION AND ALIGNMENT (4 cr)

This course offers basic theory and practice in front-end rebuilding and alignment principles of front-end geometry, steering and front suspension systems. Ball-joints, "A" frames, rebuilding McPhearson struts and wheel balancing also are covered. This course meets seven hours a week.

**SUPPLY FEE:** $20

### AUTC 101C: AUTOMOTIVE BASIC ENGINE OVERHAUL (4 cr)

Students learn basic internal combustion engine theory, complete engine service and repair procedures, and the use of precision measuring tools. This course meets seven hours a week.

**SUPPLY FEE:** $20

*NOTE: Upon completion of AUTC 101A, AUTC 101B and AUTC 101C, Instructional Division credit for AUTC 101L may be awarded.*

*NOTE: Upon completion of AUTC 101A, AUTC 101B, AUTC 101C and AUTC 102, the Instructional Division certificate for Basic Auto Servicing may be awarded.*

### AUTC 111A: AUTOMOTIVE AUTOMATIC TRANSMISSION (4 cr)

Students receive instruction in diagnostic and repair procedures involving automatic transmissions and transaxles. This course meets six hours a week.

**SUPPLY FEE:** $20

### AUTC 111B: AUTOMOTIVE MANUAL TRANSMISSION (4 cr)

Students receive instruction on diagnostic and repair procedures involving clutches, manually shifted transmissions, transaxles and differential units. This course meets six hours a week.

**SUPPLY FEE:** $20

### AUTC 111C: AUTOMOTIVE DRIVE TRAIN (4 cr)

(*Prerequisites: AUTC 111A, AUTC 111B*) This course covers in-depth diagnostic and repair procedures for manual drive train and axles, and automatic transmission/transaxles. Instruction is provided in diagnostic and repair procedures for clutches and differential units. This course meets six hours a week.

**SUPPLY FEE:** $20

### AUTC 111D: AUTOMOTIVE AIR CONDITIONING (4 cr)

Basic principles of the automotive cooling system and their relation to the heating and air conditioning systems in refrigeration and heat exchange are studied. System diagnosis, components analysis and testing, and servicing procedures are demonstrated with the use of air conditioning equipment. This course meets six hours a week.

**SUPPLY FEE:** $20

*NOTE: Upon completion of AUTC 111A, AUTC 111B, AUTC 111C and AUTC 111D, Instructional Division credit for AUTC 111L may be awarded.*

### AUTC 113/DIME 113: TRANSPORTATION ELECTRONICS (3 cr)

(*Prerequisite: AUBO 102/AUTC 102/DIME 102*) This course provides the information required to test and replace malfunctioning electronic components. The theory of solid-state devices, basic principles of electronics, and interpretation of circuit diagrams are included. Signal tracing characteristics, and the operation of semi-conduction diodes and rectifier circuits are covered. Lab experiments are conducted on full wave rectifiers, voltage rectifiers, transistors, thyristors, integrated circuits, operational amplifiers, digital gates and timing circuits. This course meets five hours a week.

*NOTE: Upon receipt of Instructional Division credit for AUTC 101L, AUTC 102, AUTC 111L and AUTC 113, the student may be awarded a Basic Auto Repair certificate.*

### AUTC 201A: AUTOMOTIVE ELECTRICITY (4 cr)

This course emphasizes the principles of basic electricity and automotive electrical circuits used in the operation, testing and servicing of storage batteries, cranking motors, alternators, generators and regulators. Instruction includes motor wiring diagrams and lighting systems as well as appropriate test equipment such as volt meters, ampmeters and ohmeters. This course meets 6½ hours a week.

**SUPPLY FEE:** $20

### AUTC 201B: AUTOMOTIVE FUEL SYSTEMS (4 cr)

(*Prerequisite: AUTC 201A*) Fundamentals of carburetor operations and circuits, fuel system and carburetion trouble-shooting, servicing and overhaul procedures are covered. This course meets 6½ hours per week.

**SUPPLY FEE:** $20

### AUTC 201C: AUTOMOTIVE TUNE-UP AND EMISSIONS I (4 cr)

(*Prerequisite: AUTC 201B*) The basic principles of automotive tune-up and their relationship to automobile exhaust emissions, basic emissions system diagnosis, component analysis, testing and servicing procedures meeting current standards are stressed with the use of infrared and electronic testing equipment. This course meets 6½ hours per week.

**SUPPLY FEE:** $20

### AUTC 201D: AUTOMOTIVE TUNE-UP AND EMISSIONS II (4 cr)

(*Prerequisite: AUTC 201C*) This course covers basic principles of computers, feedback sensors, computer-controlled carburetors, throttle body fuel injection, rail injection, and how computers work and control emissions. Testing and servicing of components meeting current standards are stressed with the use of infrared and electronic test equipment. This course meets 6½ hours per week.

**SUPPLY FEE:** $20

*NOTES: Upon completion of AUTC 201A, AUTC 201B, AUTC 201C and AUTC 201D, Instructional Division credit for AUTC 201L may be awarded.*

*Upon receipt of Instructional Division credit for AUTC 101L, AUTC 102, AUTC 111L, AUTC 113 and AUTC 201L, the student may be awarded an Automotive Technology certificate.*

## DIESEL MECHANICS

### DIME 101A: DIESEL I THEORY/LAB (B) (4 cr)

This course covers the operating principles of the two- and four-cycle engine, air induction and exhaust systems, fuel systems, cooling systems, governors and basic engine adjustments. This course meets seven hours a week.

**SUPPLY FEE:** $20

### DIME 101B: DIESEL I THEORY/LAB (I) (4 cr)

(*Prerequisite: DIME 101A*) This course continues material learned in DIME 101A. Precision measuring tools, interpretation of mechanical drawings and thread repair procedures are covered. This course meets six hours a week.

**SUPPLY FEE:** $20

### DIME 101C: DIESEL I THEORY/LAB (A) (4 cr)

(*Prerequisite: DIME 101B*) Emphasis is on the use of the test equipment, repair practices, corrective actions, tune-up procedures on two- and four-stroke engines and engine support systems. Operating principles of major brands of fuel systems also are covered. This course meets seven hours a week.

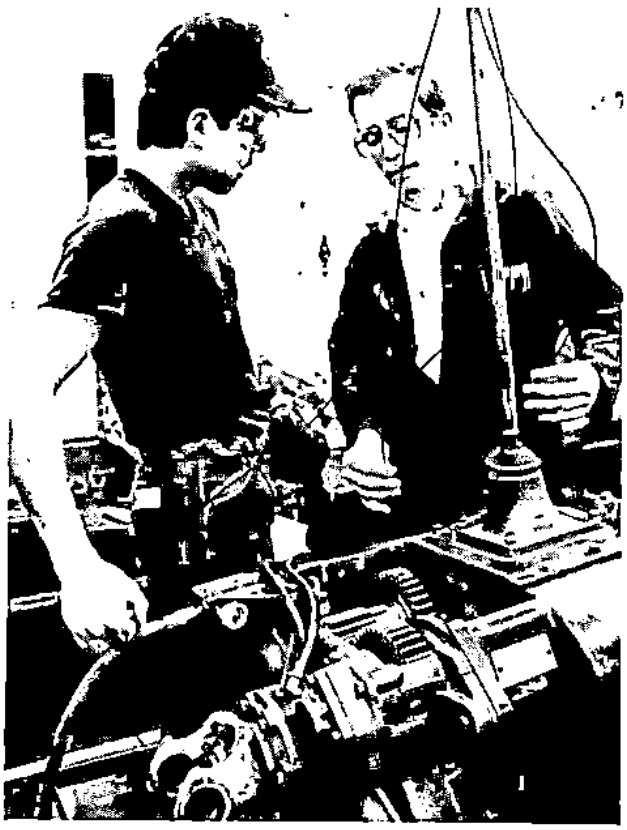
**SUPPLY FEE:** $20

*NOTE: Upon completion of DIME 101A, DIME 101B and DIME 101C, Instructional Division credit for DIME 101L may be awarded.*

### DIME 111A: DIESEL II THEORY/LAB (B) (4 cr)

(*Prerequisite: DIME 101A, DIME 101B, DIME 101C*) This course usually is offered in the fall. This course on the diesel drive train introduces the theory related to test equipment, diagnosis, troubleshooting and analysis procedure. Shop safety is also covered. This course meets seven hours a week.

**SUPPLY FEE:** $20



### DIME 111B: DIESEL II THEORY/LAB (I) (4 cr)

(*Prerequisite: DIME 111A*) This course usually is offered in the winter. This course is a continuation of DIME 111A. Basic theory of troubleshooting is continued. Drive line repairs and hydraulic systems are introduced. This course meets six hours a week.

**SUPPLY FEE:** $20

### DIME 111C: DIESEL II THEORY/LAB (A) (4 cr)

(*Prerequisite: DIME 111B*) This course usually is offered in the summer. An in-depth study of the drive train and hydraulic system is presented with emphasis on service and repair. This course meets seven hours a week.

**SUPPLY FEE:** $20

*NOTE: Upon completion of DIME 111A, DIME 111B and DIME 111C, Instructional Division credit for DIME 111L may be awarded.*

## ELECTRICAL TRADES

### ELTR 101A: ELECTRICAL TRADES THEORY/LAB I (B) (4 cr)

This course covers the fundamentals of basic electricity. Topics include history and development of electrical trades, job opportunities, safety, electrical drawing, electrical circuitry, electrical meters, power sources, conductors, insulators, semiconductors and electrical devices. This course also presents training in Red Cross first aid and CPR for which certification is issued upon successful completion. This course meets seven hours a week.

**SUPPLY FEE:** $15

*NOTE: Students are required to furnish tools.*

### ELTR 101B: ELECTRICAL TRADES THEORY/LAB I (I) (4 cr)

(*Prerequisite: ELTR 101A*) Advanced instruction is provided in the fundamentals of basic electricity. Subjects include combination and series/parallel circuitry, magnetism, electromagnetism, transformers, inductance, capacitance and RLC circuits. This course meets seven hours a week.

**SUPPLY FEE:** $15

*NOTE: Students are required to furnish tools.*

### ELTR 101C: ELECTRICAL TRADES THEORY/LAB I (A) (4 cr)

(*Prerequisite: ELTR 101B*) The student studies DC and AC generators; DC and AC motors; solid state components; wiring methods for single pole, three- and four-way switches; receptacles; and GFCI protected circuits. This course meets six hours a week.

**SUPPLY FEE:** $15

*NOTES: Students are required to furnish tools.*

*Upon completion of ELTR 101A, ELTR 101B and ELTR 101C, Instructional Division credit for ELTR 101L may be awarded.*

### ELTR 102: ELECTRICAL TRADES MATHEMATICS I (3 cr)

The student reviews basic arithmetic functions and is introduced to electrical formulas which include Ohm's and Kirchhoff's laws. Problem solving includes calculations of material and circuit load requirements; rules for series, parallel and combination circuits; and mechanical work and power. This course meets five hours a week.

### ELTR 111A: ELECTRICAL TRADES THEORY/LAB II (B) (4 cr)

*(Prerequisite: ELTR 101C)* Fundamentals of electricity are applied to the design and installation of residential circuitry. Safety, tools, materials, devices, single-pole switches and receptacle projects are covered. The National Electric Code is studied in detail. This course meets seven hours a week.

**SUPPLY FEE:** $15

*NOTE: Students are required to furnish tools.*

### ELTR 111B: ELECTRICAL TRADES THEORY/LAB II (I) (4 cr)

*(Prerequisite: ELTR 111A)* Three- and four-way switching circuits, pilot switches, baseboard heaters, door chimes, electrical times and swamp cooler connections are covered. This course meets seven hours a week.

**SUPPLY FEE:** $15

*NOTE: Students are required to furnish tools.*

### ELTR 111C: ELECTRICAL TRADES THEORY/LAB II (A) (4 cr)

*(Prerequisite: ELTR 111B)* Zone boiler heating systems, low-voltage lighting, overhead and underground services, conduit bending and pipe threading are covered. The National Electric code is studied in depth. This course meets six hours a week.

**SUPPLY FEE:** $15

*NOTES: Students are required to furnish tools.*

*Upon completion of ELTR 111A, ELTR 111B and ELTR 111C, Instructional Division credit for ELTR 111L may be awarded.*

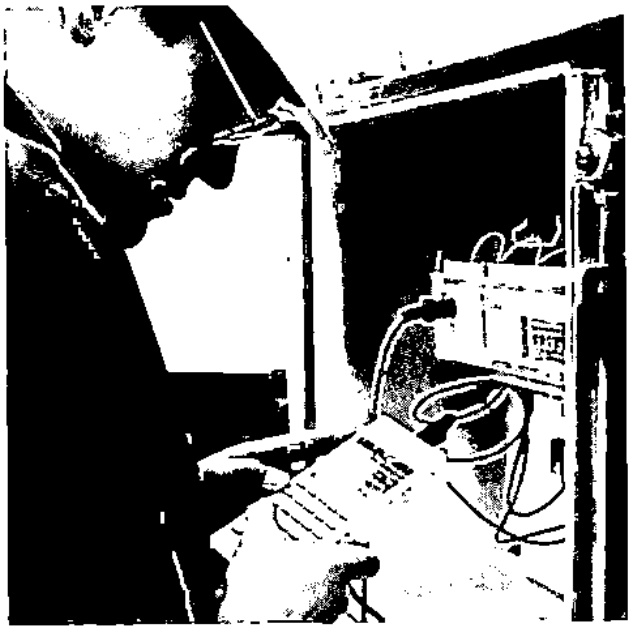
### ELTR 112: ELECTRICAL TRADES MATHEMATICS II (3 cr)

*(Prerequisite: ELTR 102)* This course advances the student's knowledge of electrical formulas into algebraic concepts and trigonometric functions as they apply to power production, magnetic circuitry, generators and three-phase motors. This course meets five hours a week.

### ELTR 113: ELECTRICAL TRADES BLUEPRINT READING I (3 cr)

*(Prerequisite: ELTR 101C)* Basic instruction is provided in reading and interpreting blueprints and specifications. Emphasis is on terminology, symbols, notations, scaling, dimensioning and basic blueprint drawing techniques. Construction methods, materials and structural support of residential, commercial and industrial buildings also are covered. This course meets five hours a week.

*NOTE: Upon receiving credit for ELTR 101L, ELTR 102, ELTR 111L, ELTR 112 and ELTR 113, the Instructional Division Certificate for Residential Wiring may be awarded.*



### ELTR 201A: ELECTRICAL TRADES THEORY/LAB III (4 cr)

This class begins with a thorough discussion of basic safety practices in the industry. The class provides basic instruction in the use of tools and materials needed in the construction of commercial installations. National Electrical Code (NEC) requirements are included in the course work. This course meets six hours per week.

### ELTR 201B: ELECTRICAL TRADES THEORY/ LAB III (4 cr)

*(Prerequisite: ELTR 201A)* This course provides continuing instruction in the safety practices of the trade. Pipe threading and cutting, knockout punches, hammer drilling and anchors are taught. Instruction in power actuated tools, cable cutting and splicing, wire pulling, conduit and conduit benders is included. This course meets 6½ hours per week.

### ELTR 201C: ELECTRICAL TRADES THEORY/LAB III (4 cr)

*(Prerequisites: ELTR 201A, ELTR 201B)* This intermediate course provides further instruction in safety and in National Electrical Code (NEC) requirements. Instruction is provided in the identification and use of materials, hydraulic benders, three phase systems, transformers, and three phase motors. This course meets 6½ hours per week.

### ELTR 201D: ELECTRICAL TRADES THEORY/LAB III (3 cr)

*(Prerequisites: ELTR 201A, ELTR 201B, ELTR 201C)* This advanced course provides instruction in safety and National Electrical Code (NEC) requirements. Class topics include motor control circuits, intrusion and fire alarm systems, and power distribution systems. This course meets six hours per week.

*NOTE: Upon completion of ELTR 201A, ELTR 201B, ELTR 201C, ELTR 201D, Instructional Division credit for ELTR 201L may be awarded.*

### ELTR 202: ELECTRICAL TRADES BLUEPRINT READING II (3 cr)

*(Prerequisite: ELTR 113 or equivalent)* Advanced instruction in reading blueprints and specifications is provided. The blueprints include transformers, feeders, distribution panels, subfeeder panels, lighting circuits, motors and controllers, signal systems and power requirements. This course meets five hours per week.

## MACHINE TOOL

### MATT 101A: MACHINE TOOL TECHNOLOGY THEORY/LAB I (4 cr)

This course provides basic instruction in shop safety, benchwork, machine construction and nomenclature, speeds and feeds, and cutting tool physics. Basic instruction in the operation of drill presses, pedestal grinders, engine lathes and milling machines is also provided. This course meets six hours per week.

### MATT 101B: MACHINE TOOL TECHNOLOGY THEORY/LAB I (4 cr)

*(Prerequisite: MATT 101A)* This intermediate course provides further instruction in shop safety and machining theory. More complex machining processes are taught in the operation of the engine lathe, milling machine, and introduction of the surface grinder. This course meets seven hours a week.

### MATT 101C: MACHINE TOOL TECHNOLOGY THEORY/LAB (4 cr)

*(Prerequisites: MATT 101A, MATT 101B)* This advanced course continues with further instruction in shop safety and machining theory. More advanced work is pursued in the operations of the various machine tools in the lab including the lathe, milling machine, and grinding equipment. Advanced measurement is also covered. This course meets seven hours a week.

*NOTE: Upon completion of MATT 101A, MATT 101B and MATT 101C, Instructional Division credit for MATT 101L may be awarded.*

### MATT 102: MACHINE TOOL TECHNOLOGY—MATHEMATICS/BLUEPRINT READING I (3 cr)

This class provides a review of basic math and an introduction of simple formula manipulation. An introduction to shop drawings, and sketching of orthographic and isometric views are included. Computations of various machining parameters such as speeds and feeds, tapers, and threading are taught. This course meets five hours per week.

## PLUMBING

### PLMB 101A: PLUMBING THEORY LAB I (4 cr)

This course provides basic instruction in safety and the proper use of tools and equipment. Included in the course work is the nomenclature of the trade and the identification of plumbing fittings and pipe. An introduction to basic hydraulics and pneumatics is also presented. This course meets six hours per week.

### PLMB 101B: PLUMBING THEORY LAB I (4 cr)

*(Prerequisite: PLMB 101A)* This intermediate course continues with basic instruction in safety and the proper use of general tools and equipment. The course provides instruction in layout, assembly, installation, alteration and the repair of pipe systems. This course meets six hours per week.

### PLMB 101C: PLUMBING THEORY LAB I (4 cr)

*(Prerequisites: PLMB 101A, PLMB 101B)* This advanced course continues with further instruction in the use of the tools and equipment of the trade. Safety instruction is also emphasized. Sources of heat and operational procedures are introduced. This course meets six hours per week.

*NOTE: Upon completion of PLMB 101A, PLMB 101B and PLMB 101C, Instructional Division credit for PLMB 101L may be awarded.*

### PLMB 102: PLUMBING MATHEMATICS/BLUEPRINT READING I (3 cr)

This class covers basic arithmetic, fractions, decimals, cubic and weight measurements, ratio and proportion, and area and volume calculations. Content includes pressure and capacities, hydraulics, pipe length calculations, and surface and direct measurements. Basic instruction in sketching, reading working shop drawings, blueprints and specifications for residential and light commercial work is also provided. This course meets five hours per week.

## SPORTSCRAFT

### SCSE 101A: SPORTSCRAFT/SMALL ENGINE MECHANICS THEORY/LAB I (4 cr)

This basic course provides entry-level skills needed to repair outdoor power products, motorcycles and outboard marine engines. Nomenclature of the trade is taught along with an emphasis on safety and the proper use of handtools. Two- and four-stroke cycle engine theories are also examined. This course meets six hours per week.

### SCSE 101B: SPORTSCRAFT/SMALL ENGINE MECHANICS THEORY/LAB I (4 cr)

*(Prerequisite: SCSE 101A)* This intermediate course continues with instruction in safety and the application and use of handtools. Student mechanics study special tools, measuring devices and test equipment. Cooling and lubrication systems are also covered. This course meets six hours per week.

### SCSE 101C: SPORTSCRAFT/SMALL ENGINE MECHANICS THEORY/LAB I (4 cr)

*(Prerequisites: SCSE 101A, SCSE 101B)* This advanced course includes further instruction in the safe use of tools and equipment. Basic ignition and fuel systems are studied. Complete engine disassembly and overhaul is performed in this class. This course meets six hours per week.

*NOTE: Upon completion of SCSE 101A, SCSE 101B and SCSE 101C, Instructional Division credit for SCSE 101L may be awarded.*

**SCSE 102: MATH/BASIC ELECTRICITY (3 cr)**

This course presents math principles that the student can use with measuring tools, test equipment, graphs and schematics. The theory of mechanical power, basic electricity principles, electronic component identification and related terminology are also studied. Students are introduced to electrical systems, troubleshooting and repair procedures. This course meets five hours per week.

## WELDING

**WELD 101A: ARC WELDING (4 cr)**

This is a basic course in arc electric welding. Instruction is in welding safety, the welding circuit, welding symbols, types of welding machines, beading, buildups and various types of joints. This course meets seven hours a week.

**SUPPLY FEE: $70**

*NOTE: Student must furnish welding gloves.*

**WELD 101B: OXYACETYLENE WELDING (4 cr)**

Welding safety, identification of metals, types of joints, cutting procedures, tubing welding, welding alloys, brazing and fusion welding are stressed. This course meets six hours a week.

**SUPPLY FEE: $75**

*NOTE: Student must furnish welding gloves.*

**WELD 101C: INERT GAS WELDING (4 cr)**

(*Prerequisites: WELD 101A, WELD 101B*) Instruction is provided in basic tungsten inert gas (TIG) and metallic inert gas (MIG) welding. Inert gases, inert gas welding equipment, welding safety, basic welding procedures and practices are covered. This course meets seven hours a week.

**SUPPLY FEE: $85**

*NOTES: Student must furnish welding gloves.*

*Upon completion of WELD 101A, WELD 101B and WELD 101C, Instructional Division Credit for WELD 101L may be awarded.*

**WELD 102: WELDING MATHEMATICS/BLUEPRINT READING I (3 cr)**

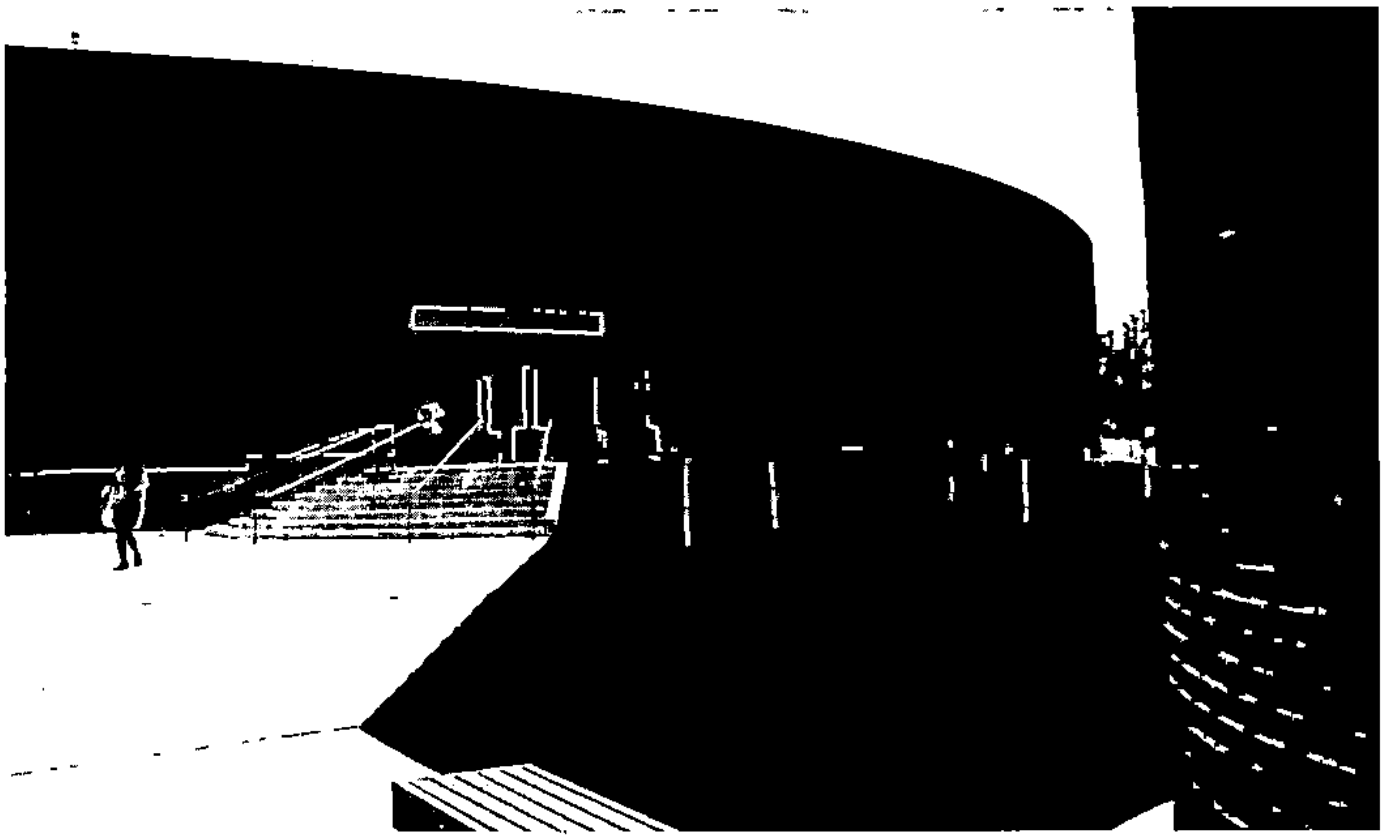
This is a course in basic drawing interpretation, welding symbols, terms and detailed fittings applied to the welding area. Instruction also is provided in basic arithmetic. Surface and direct measurements, graphs and charts, and payroll calculations are studied. This course meets five hours a week.

**WELD 170: WELDING SKILL IMPROVEMENT (3 cr)**

This class includes instruction in safety practices, general tools and equipment, sources of heat, operational procedures, metals and their properties, and applications of oxyacetylene and arc welding. Instruction is geared for the specific needs of all majors. This course meets five hours per week.

**WELD 171: ADVANCED WELDING SKILLS IMPROVEMENT (3 cr)**

This course provides instruction in advanced welding processes. MIG and TIG welding and other processes such as plasma arc, resistance, flux core, carbon and submerged arc welding are included. This course meets five hours per week.



# Index

TVI
COMMUNITY
COLLEGE

BCSD 101 - Law Enforcement I
This course includes a study of criminal law, juvenile law, criminal procedures, patrol procedures, probation and parole. Additional topics include interviewing techniques, report writing procedures, officer safety and survival, search and seizure, booking and custody, legal aspects of evidence and emergency first aid. (Equivalent: LAWE 101)

BCSD 201 - Law Enforcement II
This course includes a study of criminal investigation, traffic accident investigation and enforcement, community relations and corrections methods. Additional topics include investigative report writing, evidence collection, identification and presentation, appropriate force levels, search techniques, crime scene protection, diagramming and sketching, prisoner handling and physical conditioning for police. (Equivalent LAWE 102)