



# **Albuquerque Technical Vocational Institute**

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## **1998-99 Catalog**

**CollegeSource**

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# 1998-1999 CATALOG

ALBUQUERQUE TECHNICAL VOCATIONAL INSTITUTE

VOLUME 33

JULY 1998

**Main Campus**

525 Buena Vista SE  
Albuquerque, New Mexico 87106-4096

**Joseph M. Montoya Campus**

4700 Morris NE  
Albuquerque, New Mexico 87111-3704

**Rio Rancho Campus**

State Road 528 and Sara Road  
Rio Rancho, New Mexico 87124

**South Valley Campus**

5816 Isleta SW  
Albuquerque, New Mexico 87105



*TVI is an equal opportunity institution.*

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# ABOUT THIS CATALOG

The Catalog is the student's official guide to programs, courses and policies of Albuquerque Technical Vocational Institute. Beginning with an introduction that includes the TVI mission, vision, values and goal statements, the Catalog contains:

- ❑ general information about TVI: a summary of offerings and information about admission, registration, financial aid, academic regulations and student services;
- ❑ instructional programs: details about TVI's six departments, including course descriptions and requirements for earning degrees and certificates; and
- ❑ lists of TVI Governing Board members, administrative officers and faculty.

The TVI Catalog is a summary of information of interest to students; it is not a complete statement of programs and policies. Other important information is published in:

- ❑ the Schedule of Classes;
- ❑ the Student Handbook;
- ❑ the Financial Aid and Scholarship Guidebook; and
- ❑ handbooks published by instructional departments and other offices.

Not all programs and classes listed in the Catalog are offered at all campuses or every term. If fewer than 12 persons have applied to begin a program, it may be canceled that term. After a program begins, no required class will be canceled, regardless of enrollment, although support classes may be canceled due to insufficient enrollment.

Information in the Catalog is subject to change.

This Catalog is available in alternative formats from the Special Services office at Main Campus. It is published on the TVI home page, [www.tvi.cc.nm.us](http://www.tvi.cc.nm.us).

# INTRODUCING TVI

Now in its third decade, Albuquerque Technical Vocational Institute is an accredited community college offering courses in a variety of occupational, college transfer and adult/developmental education subjects. In 1998-99 TVI's programs include:

- ❑ certificates: in 41 business, health, technologies and trades occupations, as well as short-term occupational courses;
- ❑ associate degrees: in 34 occupational fields and liberal arts;
- ❑ college transfer: courses in pre-management, pre-engineering, other occupational subjects and 27 liberal arts disciplines transferable for freshman and sophomore credit at four-year institutions; and
- ❑ adult/developmental education: basic skills (including English as a second language and GED exam preparation) and remedial, preparatory and developmental classes for students preparing to meet admission requirements at TVI or other institutions.

Other TVI programs include concurrent enrollment for high school students, special services for students with disabilities, tutoring and self-paced learning centers. TVI also offers workshops; support for small business, custom training for local employers and programs for learners over 50.

TVI is accredited to grant certificates and associate of applied science, associate of arts and associate of science degrees by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools. In addition, specific programs have accreditation or approval by appropriate agencies.

## EQUAL OPPORTUNITY POLICY

The Albuquerque Technical Vocational Institute affirms that it will not discriminate on the basis of sex, race, color, national origin, religion, age or disability in any of its practices or procedures in accordance with applicable federal, state and local laws, nor will it condone any act of illegal discrimination or harassment on the part of its employees. This provision includes, but is not limited to, employment, admissions, testing, financial aid and educational services.

It is the policy of the Institute not to discriminate on the basis of sexual orientation, marital status or ancestry.

Any person who wants to file a complaint based on these laws should contact the equal opportunity officer in the Human Resources Office, 224-4600.

In accordance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973, Albuquerque TVI provides notice that no qualified individual with a disability shall, on the basis of the disability, be excluded from participation in, be denied the benefit of, or otherwise be subjected to discrimination related to any of the institution's educational programs or activities.

If a student has concerns about TVI's compliance, he or she should contact A. Paul Smarrella in Special Services, 224-3259.

## HISTORY

Authorized by the New Mexico Legislature in 1953, the Albuquerque Technical Vocational Institute was approved by district voters in 1964 to provide adults with skills necessary for success in the world of work. The first nine classes, for 155 students, were held in the summer of 1965 in surplus barracks and a vacated elementary school.

From the first, TVI's priority has been job training, broadly defined to include preparatory work, skill improvement for adults, vocational courses for high school students and, in recent years, liberal arts and college transfer. Today's job training programs are offered in business, health, technologies and trades subjects, with emphasis on up-to-date, hands-on skills needed by local employers. Internships, co-op programs and apprenticeships are available.

TVI was accredited by the North Central Association of Colleges and Schools in 1978. The first college-prep course, MATH 100, was offered in 1985. Degree-granting power was approved for TVI by the Legislature in 1986, beginning the transition to a community college. By the late 1980s, liberal arts was not only TVI's fastest growing component but also an increasingly important part of occupational instruction, and the University of New Mexico had arranged to offer all its remedial courses through TVI.

Until 1979, TVI was part of the Albuquerque Public Schools, with the APS Board of Education serving as the TVI Governing Board. The first election for an independent TVI board was held in September 1979, following approval by the Legislature. In 1994, the Legislature approved districting the Governing Board.

# TVI TODAY

With enrollment approaching 20,000, TVI is the second largest postsecondary institution in New Mexico. The Main Campus occupies 60 acres near downtown Albuquerque and the 42-acre Joseph M. Montoya Campus is in the Northeast Heights. Classes also are offered at the Rio Rancho Campus, the South Valley Campus and at the University of New Mexico, as well as various off-campus sites. Plans are being made for a permanent West Side presence.

TVI's classrooms, libraries and laboratories are modern and comfortable. Each student has access to state-of-the-art equipment, especially computers. TVI programs, facilities and services are accessible to the disabled.

Advisory committees from local businesses help assure that TVI students acquire the skills needed for success on the job, and TVI helps graduates find jobs. The Institute also cooperates with other two- and four-year schools on course articulation and student transfer.

TVI's Governing Board members are elected by voters in seven geographical districts within the Institute district, which includes all of Bernalillo County and part of Sandoval County.

Funding for TVI programs and most construction and equipment comes from a property tax levy in the Institute district and annual appropriations by the New Mexico Legislature. Tuition and fees are moderate, and financial aid is available to many students. Private contributions through the TVI Foundation are increasing every year.

TVI's academic year is divided into three terms: fall (begins in September), spring (begins in January) and summer (begins in May). Short sessions also are held in some programs. Most programs admit beginning students each term.

## MISSION, VISION, VALUES, GOAL

### Mission

Albuquerque Technical Vocational Institute (TVI) promotes and provides higher education, skill development and workforce training relevant to contemporary needs within the district and the state of New Mexico.

### Vision

Albuquerque Technical Vocational Institute is a progressive community college where students achieve goals and meet change.

### Values

Albuquerque Technical Vocational Institute values people, excellence, integrity, diversity, responsiveness, results and the community.

### Goal

The overall goal of the Albuquerque Technical Vocational Institute is to raise educational levels and to exceed student, workforce and community expectations.

To achieve this, TVI will:

- ❑ Encourage and support students by offering the best opportunities for occupational and workforce training, certificates, associate degrees, transfer credit, skill development and continuous learning.
- ❑ Respond quickly to community needs by promoting and maintaining program quality and relevant curricula to support economic development.
- ❑ Encourage and support faculty and staff in their roles and offer opportunities for growth, professional development and recognition.
- ❑ Meet change through innovation and technology.
- ❑ Foster communication, cooperation and collaboration within TVI and between and among other educational institutions and the community.
- ❑ Ensure that TVI is welcoming, friendly and service-oriented to attract and retain students.
- ❑ Provide affordable and accessible education.
- ❑ Respect and promote diversity.
- ❑ Develop, improve and maintain physical resources at TVI to facilitate learning.
- ❑ Maintain fiscal integrity and responsibility.
- ❑ Provide accountability through an ongoing system of evaluation, analysis and adjustment.

## GENERAL EDUCATION

The Albuquerque Technical Vocational Institute, a community college, provides basic, occupational and general education for a population which includes a broad spectrum of ages, cultural backgrounds and intellectual abilities. The Institute is committed to general education and related courses as an integral part of certificate and associate degree programs. The general education courses include mathematics, communication skills, social and natural sciences, humanities, foreign languages and fine arts. It is believed that general education enhances students' personal and professional attitudes, habits and skills as they pursue lifelong continuum of learning.

In certificate programs, related education courses cover competencies in communication, math and human relations to better prepare students for the world of work.

In associate degree programs, students are required to complete a minimum of 15 semester credit hours of general education in addition to courses in their major field of study. The required general education courses have been selected to enhance students' personal and professional habits, attitudes and skills. These courses are chosen to increase students' abilities to understand and participate more effectively as members of the community and to give breadth to their chosen careers.

The general education courses in the transfer liberal arts degree reflect the common requirements of the state's six universities and approximate the universities' core curriculum in the freshman and sophomore sequence.

## ASSESSMENT

Albuquerque TVI, in compliance with the North Central Association's Commission on Institutions of Higher Education, regularly conducts assessment of its instruction. Assess-

ment of student academic achievement is an effort throughout each of the instructional departments wherein the departments evaluate their success in fulfilling both course and program objectives. Towards this end, during a semester students may be requested to participate in forums, portfolios, testing or surveys that help the departments measure student success or satisfaction.

Specifically, in attempting to measure student academic achievement, instructional departments are trying to better understand those circumstances that lead to student success and mastery of course objectives and program goals. In applying measurement tools, departments gain knowledge and experience that help them to continue to do things well or to improve instruction where weaknesses are found.

## DISTANCE LEARNING

An increasing number of TVI credit courses are offered in innovative distance-learning formats designed to overcome barriers of time or space. Some courses are available through correspondence, some are taught over the Internet, some are shown on television and others use audio and video links to two or more classrooms. Printed materials and interaction with the instructor (in person, by telephone or via electronic mail) are available.

## COMMUNITY OFFERINGS

In addition to the adult/developmental and credit courses described in this Catalog, TVI offers a number of non-credit educational opportunities to the community, including free public access to the libraries at Main and Montoya campuses and (on a space-available basis) to the open computer lab in Stromberg Hall. The Workforce Training Center provides customized training, skills workshops and assistance to entrepreneurs. The Emeritus Academy assists students over 50 who want to enroll in credit courses and offers workshops on topics of interest to seniors.

# 1998-1999 ACADEMIC CALENDAR\*

## FALL TERM 1998

|                                                         |                          |
|---------------------------------------------------------|--------------------------|
| First day of instruction .....                          | August 31                |
| Last day to enroll                                      |                          |
| Full term classes .....                                 | September 4              |
| Short session classes .....                             | third day of the session |
| Midterm/graduation applications due .....               | October 20               |
| Thanksgiving holiday (no classes; offices closed) ..... | November 26-28           |
| Last day of the term .....                              | December 16              |

## SPRING TERM 1999

|                                                           |                          |
|-----------------------------------------------------------|--------------------------|
| First day of instruction .....                            | January 11               |
| Last day to enroll .....                                  | January 15               |
| Full term classes                                         |                          |
| Short session classes .....                               | third day of the session |
| Martin Luther King Day (no classes; offices closed) ..... | January 18               |
| Presidents' Day (no classes; offices open) .....          | February 15              |
| Midterm/graduation applications due .....                 | March 3                  |
| Graduation .....                                          | April 23                 |
| Last day of the term .....                                | April 28                 |

## SUMMER TERM 1999

|                                                             |                          |
|-------------------------------------------------------------|--------------------------|
| First day of instruction .....                              | May 17                   |
| Last day to enroll                                          |                          |
| Full term classes .....                                     | May 21                   |
| Short session classes .....                                 | third day of the session |
| Memorial Day holiday (no classes; offices closed) .....     | May 31                   |
| Midterm/graduation applications due .....                   | June 25                  |
| Independence Day holiday (no classes; offices closed) ..... | July 2-3                 |
| Last day of the term .....                                  | August 6                 |

\*Complete academic calendars appear in the Schedule of Classes each term.



# TVI Graduate Job Placement, 1996-1997\*

| Business Occupations                            | Total Graduates | Available for Work <sup>1</sup> | Percent Employed | Working in New Mexico | Average Salary <sup>2</sup> |
|-------------------------------------------------|-----------------|---------------------------------|------------------|-----------------------|-----------------------------|
| Accounting, certificate . . . . .               | 6               | 3                               | 100%             | 3                     | -                           |
| Accounting, degree . . . . .                    | 32              | 20                              | 85%              | 17                    | \$16,602                    |
| Administrative Assistant, certificate . . . . . | 11              | 8                               | 63%              | 5                     | \$13,204                    |
| Administrative Assistant, degree . . . . .      | 34              | 20                              | 95%              | 18                    | \$19,695                    |
| Bookkeeping, certificate . . . . .              | 3               | 2                               | 100%             | 2                     | \$12,320                    |
| Business Administration, certificate . . . . .  | 15              | 5                               | 80%              | 4                     | -                           |
| Business Administration, degree . . . . .       | 26              | 10                              | 80%              | 8                     | \$15,600                    |
| Court Reporting, certificate . . . . .          | 1               | 1                               | 100%             | 1                     | -                           |
| Court Reporting, degree . . . . .               | 2               | 2                               | 100%             | 2                     | \$16,640                    |
| Legal Assistant Studies, degree . . . . .       | 42              | 34                              | 88%              | 30                    | \$17,919                    |
| Microcomputer Mgmt Spec, certificate . . . . .  | 8               | 3                               | 33%              | -                     | -                           |
| Microcomputer Mgmt Spec, degree . . . . .       | 17              | 14                              | 64%              | 9                     | \$20,402                    |
| Pre-Management, degree . . . . .                | 16              | 2                               | 50%              | 1                     | -                           |
| Sales and Cashiering, certificate . . . . .     | 9               | 6                               | 50%              | 3                     | \$11,787                    |
| <b>Health Occupations</b>                       |                 |                                 |                  |                       |                             |
| Child, Youth, Family Devel, degree . . . . .    | 14              | 8                               | 100%             | 8                     | \$13,139                    |
| Healthcare Technician, certificate . . . . .    | 14              | 7                               | 100%             | 7                     | \$15,946                    |
| Health Unit Clerk, certificate . . . . .        | 30              | 16                              | 81%              | 13                    | \$16,856                    |
| Practical Nurse, certificate . . . . .          | 25              | 20                              | 95%              | 19                    | \$22,673                    |
| Medical Lab Technician, degree . . . . .        | 11              | 10                              | 90%              | 8                     | \$25,368                    |
| Nursing, degree . . . . .                       | 59              | 49                              | 98%              | 48                    | \$31,387                    |
| Nursing Assistant, certificate . . . . .        | 43              | 28                              | 93%              | 26                    | \$14,201                    |
| Pharmacy Technician, certificate . . . . .      | 14              | 9                               | 100%             | 9                     | \$15,912                    |
| Phlebotomist, certificate . . . . .             | 27              | 16                              | 88%              | 14                    | \$15,398                    |
| Respiratory Therapist, degree . . . . .         | 15              | 12                              | 100%             | 12                    | \$22,308                    |

\*Complete statistics are published in the Student Handbook and are available from Student Job Placement Services.

<sup>1</sup>Excludes those not located, seeking training-related job, continuing in school, serving in military, not seeking employment, not available for work

<sup>2</sup>Based on 40-hour work week

## Technologies

|                                                    |    |    |      |    |          |
|----------------------------------------------------|----|----|------|----|----------|
| Arch/Engin Drafting Tech, certificate . . . . .    | 5  | 2  | 100% | 2  | -        |
| Arch/Engin Drafting Tech, degree . . . . .         | 21 | 11 | 91%  | 10 | \$17,568 |
| Business Computer Prog Tech, certificate . . . . . | 6  | 4  | 100% | 4  | \$22,720 |
| Business Computer Prog Tech, degree . . . . .      | 18 | 10 | 90%  | 8  | \$22,787 |
| Design Drafting Eng Tech, degree . . . . .         | 9  | 9  | 78%  | 7  | \$22,505 |
| Electronics Engin Tech, degree . . . . .           | 6  | 6  | 100% | 6  | \$19,584 |
| Electronics Technology, certificate . . . . .      | 15 | 8  | 100% | 8  | \$25,827 |
| Electronics Technology, degree . . . . .           | 38 | 26 | 100% | 24 | \$31,107 |
| Instrumentation/Control Tech, degree . . . . .     | 3  | 2  | 100% | 2  | \$19,760 |
| Manufacturing Technology, certificate . . . . .    | 16 | 11 | 100% | 10 | \$39,108 |
| Manufacturing Technology, degree . . . . .         | 16 | 16 | 100% | 16 | \$47,505 |

## Trades & Service Occupations

|                                                |            |            |            |    |              |
|------------------------------------------------|------------|------------|------------|----|--------------|
| Air Cond/Heating/Refrig, certificate . . . . . | 10         | 7          | 100%       | 6  | \$22,005     |
| Auto Body Repair, certificate . . . . .        | 3          | 1          | 100%       | 1  | \$13,520     |
| Automotive Technology, certificate . . . . .   | 8          | 2          | 100%       | 2  | \$18,720     |
| Baking, certificate . . . . .                  | 12         | 4          | 100%       | 4  | \$13,962     |
| Carpentry, certificate . . . . .               | 2          | -          | -          | -  | -            |
| Commercial Printing, certificate . . . . .     | 8          | 2          | 100%       | 2  | \$12,480     |
| Construction Technology, degree . . . . .      | 16         | 8          | 100%       | 8  | \$22,020     |
| Criminal Justice, degree . . . . .             | 23         | 8          | 50%        | 4  | \$17,264     |
| Culinary Arts, degree . . . . .                | 13         | 7          | 100%       | 7  | \$16,578     |
| Diesel Equip Technology, certificate . . . . . | 3          | -          | -          | -  | -            |
| Electrical Trades, certificate . . . . .       | 12         | 9          | 89%        | 8  | \$20,238     |
| Environmental Tech, degree . . . . .           | 10         | 4          | 100%       | 4  | \$19,827     |
| Fire Science, degree . . . . .                 | 5          | 3          | 100%       | 3  | -            |
| Fitness Technician, certificate . . . . .      | 5          | 2          | 100%       | 2  | \$13,728     |
| Food Service Mgmt, certificate . . . . .       | 12         | 4          | 100%       | 4  | \$18,604     |
| Machine Tool Tech, certificate . . . . .       | 10         | 7          | 100%       | 7  | \$19,407     |
| Mechanical Technology, degree . . . . .        | 6          | 4          | 75%        | 3  | \$22,360     |
| Metals Technology, degree . . . . .            | 4          | 4          | 100%       | 3  | \$16,067     |
| Plumbing, certificate . . . . .                | 16         | 10         | 90%        | 9  | \$18,616     |
| Quantity Food Prep, certificate . . . . .      | 9          | 5          | 100%       | 5  | \$14,081     |
| Transportation Tech, degree . . . . .          | 2          | 1          | 100%       | 1  | -            |
| Truck Driving, certificate . . . . .           | 22         | 18         | 94%        | 14 | <sup>1</sup> |
| Welding, certificate . . . . .                 | 5          | 2          | 100%       | 2  | \$16,120     |
| <b>Totals . . . . .</b>                        | <b>843</b> | <b>523</b> | <b>91%</b> |    |              |

<sup>1</sup>Local \$21,396 per year; over the road \$28,641 per year

# ADMISSION AND REGISTRATION

Admission is the process of applying and being accepted to TVI. Registration (see page 16) is the process of selecting courses, receiving a schedule of classes and completing enrollment at TVI. The following requirements and procedures do not apply to students taking Adult Education classes.

## ADMISSION

The Albuquerque Technical Vocational Institute has an open admission policy which provides individuals the opportunity to enroll in the Institute's certificate or degree programs as well as individual courses. Students are considered for admission to TVI without regard to sex, race, color, national origin, religion, age or disability. It is the policy of the Institute not to discriminate on the basis of sexual orientation, marital status or ancestry.

TVI's academic year is divided into three terms which begin in September, January and May. Students are urged to apply for admission at least two months before registration begins and may apply for any term up to one year in advance.

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, students who interrupt their programs may not be able to resume their studies at the time they want, because classes they need may not be offered every term. An interruption in enrollment may also mean a change in program and enrollment requirements upon the student's return.

## GENERAL ADMISSION REQUIREMENTS

Any person wishing to apply for admission to TVI must meet one of the following criteria:

- be at least 18 years of age; or
- have a high school diploma\*; or
- have a General Educational Development (GED) diploma; or

- qualify under concurrent enrollment (see below).

Note: Some programs have additional admission requirements (see program descriptions).

\* In order to meet this criterion, the school must be a regular high school or a home school. The regular high school must be approved by the state department of education in the institution's home state or by a regional accrediting agency approved by the New Mexico State Board of Education; the home school must be accredited by the Distance Education and Training Council Accrediting Commission (formerly known as the National Home Study Council).

## ADMISSION STATUS

A student's admission status is determined by the student's primary goal for taking courses at TVI:

**Certificate/Degree Status:** Certificate/degree students are those who have chosen a program of study and intend to earn a certificate or degree from TVI.

**Non-Degree Status:** Those who do not wish to earn a degree or certificate or have not yet chosen a major (degree or certificate program) are non-degree students. Students who enter TVI in non-degree status may request to change to certificate/degree status, declare a major and transfer credits earned in non-degree status by completing a Declare a Major form.

Note: Non-degree status will not satisfy eligibility requirements for financial aid, veterans' educational benefits or other assistance.

**Concurrent Enrollment:** In the fall and spring terms, qualified high school juniors and seniors may enroll in non-developmental credit courses at TVI. Students enroll in non-degree status and earn college credit as well as credit toward high school graduation.

TVI has concurrent enrollment agreements with the Albuquerque Public Schools, Bernalillo High School, Moriarty High School, Rio Rancho High School and several private schools.

Interested students should visit their high school counseling office, the APS Career Enrichment Center or any TVI admissions office.

## APPLYING FOR ADMISSION

### Returning Students

A returning student (any student who has previously attended TVI in certificate/degree or non-degree status and has been out for at least one term, summer term excluded) must visit the Admissions Office to update his/her status. Students who have been absent for more than one year will be required to complete a new admissions application.

### New Students

New students-those who have never attended TVI in certificate/degree status-should take the following steps:

1. Complete a TVI Application for Admission form, available from the Admissions Office.
2. Return the application to the Admissions Office. The application may be mailed 30 days before the term begins; after that, it must be hand delivered to the Admissions Office.

## Advisement and Counseling

Counselors, advisors and student technicians are available to assist students with identifying and/or meeting their educational goals.

## Program and Course Placement

**High School/GED Requirement:** Students wishing to enter a certificate or degree program who have not earned a high school diploma may be required (because of federal Ability to Benefit standards) to have minimum scores on the Accuplacer test. Results of the exam may affect the student's eligibility to enter his or her chosen program.

**Health Requirement:** 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.

**Program and/or Course Requirements:** Students enrolling in courses with prerequisites must be able to provide proof of meeting the prerequisites before enrolling. Prerequisites may be met with approved scores on Accuplacer, ACT, SAT or ASSET tests, by transfer credit from another institution or by successful completion of the prerequisite course. (Also see page 17.)

Students should take the Accuplacer as soon as possible after admission. Students may be exempt from Accuplacer testing if they:

- hold an associate degree or higher from an institution in the United States (these students may take courses for which ENG 101 and RDG 101 are prerequisites); or
- are non-degree students not enrolling in ENG or MATH courses and not registering for more than six credits per term (does not apply to concurrent enrollment students); or
- can provide proof of successful completion of previous college-level math and/or English courses.

## TRANSFER OF CREDIT

**Traditional Credit:** Credits earned at other institutions by certificate or degree-seeking students at TVI may be transferred and applied toward program requirements in accordance with the following guidelines:

1. An official transcript from each institution must be sent directly to the TVI Records Office for transfer credit evaluation. (Transcripts should be requested from the records office at the institution(s) previously attended.)
  - a. Credit for arts and sciences courses earned at regionally accredited postsecond-

ary institutions will be evaluated automatically upon receipt of the official transcript. Courses with D or better grades earned at public New Mexico institutions will be considered for transfer credit; courses from institutions outside New Mexico and private institutions in New Mexico must have C or better grades to be considered for transfer credit.

b. To receive transfer credit for occupational courses, the student must request that TVI's Records Office refer the transcript(s) to the department for review. An interview, demonstration of competence or both may be required before the decision regarding credit is made; demonstration of competence is required for all transfer credit which is at least ten years old. Courses will be evaluated according to the occupational program to be followed at TVI and may be substituted for TVI requirements as approved by the department dean.

2. Remedial courses and upper-division courses are not generally accepted.
3. Students may appeal the decision on acceptability of liberal arts transfer credit. The student should contact the Advisement Office to begin the appeal process.

**Non-Traditional Credit:** Students may be allowed to establish credit based on prior training. Specific criteria for acceptance of occupational credit have been established by each instructional department. Students interested in this option should contact their department office.

**Continuing Education Credit:** Current students who completed credit courses in TVI's Continuing Education Division prior to the winter 1991 term may apply to have that credit transferred to their TVI transcript. Interested students must request, through the Records Office, that an official copy of their Continuing Education record be sent to the department in which the course was offered.

## EXAMINATION CREDIT

**Occupational Challenge Exams:** Challenge examinations are offered for some occupational courses. Exams are available to applicants and currently enrolled students who wish to establish TVI credit for prior education, training and/or experience. The fee for most exams is \$15. The following restrictions apply:

- A student may attempt a challenge exam only once per course.
- A student may not take a challenge exam if, within the last ten years, he or she enrolled in the course at any other postsecondary institution or enrolled at TVI after the 15th day of the term (including Saturdays).
- A grade of TR will be recorded on the student's TVI transcript for those courses successfully challenged. TR credit will be recorded upon the student's completion of TVI credit coursework in the same or subsequent term. 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 may not be accepted by other postsecondary institutions.

**AP/CLEP Exams:** Students may earn up to 30 credit hours through Advanced Placement (AP) and College Level Examination Program (CLEP) tests. Details are available in

the Student Handbook and in advisement offices.

## Course Substitutions and Waivers

A course for which a student has already established credit may substitute for another course if allowed by the department offering the course for which substitution is requested. If the substitute course has fewer credit hours, the difference must be made up. A required course may be waived if the student has earned credit in a similar but not equivalent course and/or through training or work experience. The student must make up the waived credit hours.

## REGISTRATION

Students are required to register for each term they plan to attend. Registration and payment of fees must be made in accordance with the instructions published in the Schedule of Classes. Individuals may not "sit in" on classes for which they are not enrolled.

Registration for new and returning students begins approximately two months before the start of a term. Continuing students are mailed information about preregistration. Registration is held through the fifth day of the term for full-term classes and through the third day for short-session courses.

**Orientation:** Orientation sessions are offered to help new and returning students learn about TVI's services, programs and registration process. Students who have never attended a postsecondary institution are required to attend a TVI orientation before registering for classes. Information is in the Schedule of Classes.

**Schedule of Classes:** A class schedule is published prior to each term. Starting and ending dates, meeting times and locations, registration instructions and payment information are listed in the schedule, which is available in the registration offices.

**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 TVI grade point average of 2.5; and
- have no grade lower than C in the previous term; and
- secure permission from the Advisement Office.

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

**Permission to Enroll:** Students may enroll in some courses only by permission of the instructor or program advisor. Forms are available in advisement and department offices. Permission of an instructor to enroll does not constitute a waiver of a course, grant credit for another course or allow a course to be overfilled.

## COREQUISITES AND PREREQUISITES

Pre- and corequisites are listed in course descriptions and are subject to change with each new Catalog. It is the student's responsibility to meet the pre- and/or corequisites in effect for the term in which a course is taken, regardless of the Catalog under which the student entered or will graduate. Students may be barred from enrolling or may be disenrolled if pre- or corequisites are not met.

**Corequisite:** A corequisite is a course which is either recommended or required to be taken in combination with another course. If a course with a required corequisite is taken for audit, the corequisite also must be taken for audit. When a course which has a required corequisite is dropped, the corequisite must also be dropped.

**Prerequisite:** A prerequisite is a requirement which must be successfully completed before a student may enroll in a course. A student who receives a W, AU, I, NC, PR, D or F as a final grade may not enroll in any class for which the former is a prerequisite. A recommended prerequisite is one which is strongly suggested for successful completion of the course but is not required.

Most entry-level courses have prerequisites for math, English or reading. Students who have completed course prerequisites may be required to provide proof through transcripts or test scores. Students who do not meet course prerequisites may enroll in preparatory courses in Developmental Studies.

The following are alternatives or equivalents to meet entry-level course prerequisites. ACT, SAT and ASSET scores may not be more than five years old. Accuplacer scores may not be more than two years old.

| <b>Prerequisite</b>        | <b>Alternatives/Equivalents*</b>                                                                                                                          |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| ENG 099 . . . . .          | ENG 099 or above with passing grade or approved score on Accuplacer, ACT, SAT or ASSET                                                                    |
| ENG 100 . . . . .          | ENG 100 or above with passing grade or approved score on Accuplacer, ACT, SAT or ASSET                                                                    |
| MATH 099 . . . . .         | MATH 099 or above with passing grade or approved score on Accuplacer, ACT, SAT or ASSET                                                                   |
| MATH 100A . . . . .        | MATH 100A or above with passing grade or approved score on Accuplacer, ACT, SAT or ASSET                                                                  |
| MATH 100 or 100B . . . . . | MATH 100, 100B or above with passing grade or approved score on Accuplacer, ACT, SAT or ASSET                                                             |
| RDG 099 . . . . .          | RDG 099 or 100 with passing grade or approved score on Accuplacer, ACT, SAT or ASSET or other college lecture-type courses 101 or higher with C or better |
| RDG 100 . . . . .          | RDG 100 with passing grade or approved score on Accuplacer, ACT, SAT or ASSET or other college lecture-type courses 101 or higher with C or better        |

\* Approved scores are published in the Student Handbook.

## ENROLLMENT AND GRADE OPTION CHANGES

**Cancellation of Enrollment Before Term Begins:** If a student is not able to attend TVI when planned but has registered for classes, the student must cancel his or her registration at any registration office or through STARS before the beginning of the term. All fees are returned if registration is canceled before classes begin.

**Adding Courses:** Most courses may be added or sections changed through the fifth day of full-term and 12-week summer term classes and the third day of short-session classes. Students may enter most open-entry courses through the tenth week of a full term and the eighth week of the 12-week summer term. Registration deadlines and instructions are in the Schedule of Classes.

**Adding, Changing, Declaring Majors:** Students may add, change and/or declare a major (program) at any time during the term in which they are enrolled. In order to graduate with a specific major, students must either declare a major at the time of admission or complete a Declare a Major form in the advisement office prior to the term of graduation.

**Stepbacks:** Students may, with department approval, step back into most developmental courses through the second week of the term and into some lower level occupational courses (in the same discipline) through the fifth week of the term. Students may, however, step back into a self-paced, developmental math course through the tenth week of a full term and the eighth week of the 12-week summer term. Students who are having difficulty in a class and are considering this option should contact the instructor or an advisor.

**Course Repetition Limit:** A course may be repeated up to three times, regardless of grade option. A student wishing to repeat a course more than three times must obtain approval from the department dean's office. Topics, problems, internship and cooperative education courses, as well as physical fitness courses and full-term courses dropped prior to the 15th day of the term, are exempt from the course repetition limit.

**Dropping Courses or Withdrawing:** Full-term courses may be dropped through the 12th week of the term, 12-week summer courses through the 10th week and short-session courses through the Friday following the mid-point of the course. Full-term courses dropped on or before the 15th day of the term (including Saturdays) do not appear on the student's TVI transcript. A W grade will appear on the student's record for full-term and 12-week summer courses dropped after the 15th day and for all other courses dropped as of the first day of the session.

Students should not assume they will be dropped from their courses for non-attendance. Students who have not officially dropped a course will receive a final grade in the course. Drop and withdrawal deadlines are in the Schedule of Classes.

## NEW MEXICO RESIDENCY

Residence requirements for tuition purposes are established by the New Mexico Commission on Higher Education. A brochure detailing residency requirements and restrictions is available in the Admissions and Records offices.

A student is classified as a resident or non-resident for tuition purposes based on information supplied at the time of admission or readmission. A new or returning student with questions about his or her residency status should contact the Admissions Office.

A continuing non-resident student who has satisfied requirements for New Mexico residency may file a Petition for New Mexico Residency in the Records Office. Residency petitions will be accepted through the 15th day of each term (including Saturdays). All requirements for residency must be met before the first day of the term.

In general, 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 guardians who are non-residents of New Mexico. At the time the student applies for residency (if under 23 years of age), a copy of his or her parents' or guardians' 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. Information on the number and type of required overt acts is available in the Admissions and Records Offices.

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 in-state residency status to be denied or revoked.

### Other Residence Regulations

The spouses and dependents of persons who move to New Mexico to work full-time, practice a profession or conduct a business full-time (and who 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.

Active participating members of the New Mexico National Guard are eligible for resident student rates. A certification form is required for all new and returning students.

Non-citizens who are lawfully in the United States and have obtained permanent status

from the Immigration and Naturalization Service or non-citizens who serve on active duty in the armed forces of the United States may establish residency by meeting the durational and intent requirements. Any non-citizens on other visas (student, diplomatic, visitor or visiting scholar visa, including spouses and dependents) are non-residents for tuition purposes.

Persons 65 years of age and older who move to New Mexico for retirement, as well as their spouses and dependents, or those 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.

## TUITION AND FEES

Upon registering for courses, students receive a registration invoice. In order to complete registration, all charges must be paid. Payment deadlines are printed in the Schedule of Classes each term. Failure to pay all charges in full may result in the deletion of the student's schedule. Authorized agencies that have agreed to pay a student's training expenses are billed by the Institute.

Checks submitted for tuition and fees must have the student's ID number (Social Security number) written on them. If the student prefers not have the ID number on the check, he or she should pay in cash or by credit card. TVI staff will write student ID numbers on checks and money orders if the student has not already done so.

### TUITION

Tuition is charged according to a student's residency status and the number of credit hours carried. Special tuition rates do not exist for non-resident part-time students or non-resident students enrolling in the summer term.

Tuition rates for 1998-99 (subject to change without notice) are:

|                                                       | <b>Resident</b>         | <b>Non-Resident</b>     |
|-------------------------------------------------------|-------------------------|-------------------------|
| <i>Arts &amp; Sciences courses</i>                    |                         |                         |
| 1 to 11 credit hours and<br>more than 18 credit hours | \$30.50 per credit hour | \$84.50 per credit hour |
| 12 to 18 credit hours                                 | \$366.                  | \$1,014.                |
| <i>Occupational courses</i>                           |                         |                         |
| 1 to 11 credit hours                                  | none                    | \$84.50 per credit hour |
| 12 to 18 credit hours                                 | none                    | \$1,014.                |

**Senior Citizen Discount:** Senior citizens qualify for a reduced tuition rate of \$5 per credit hour, up to six credit hours per term. The tuition discount applies only to Arts & Sciences courses. To qualify, the student must be age 62 or older prior to the beginning of the term and must be classified as a New Mexico resident for tuition purposes.

To receive the senior citizen discount, eligible students must go to the Records Office at Main Campus or the Admission Office at the Montoya Campus and complete a Senior Citizens Tuition Discount form. The discount form must be approved by the tenth day of the term.

Note: The discount does not apply to Adult Education classes, workshops and other non-credit courses, or to occupational or developmental courses.

## FEES

Some courses have required fees (see course descriptions). Audit students pay the same fees as students enrolled for credit. Other fees include:

**Registration Fee:** There is a \$22.25 registration processing fee required each term (of that, \$2 is collected on behalf of the Student Association of TVI).

**GED Exam fee:** \$10

**Administrative Service Fee:** This \$10 fee is not paid by students; rather, it is charged to third-party agency agencies that sponsor students.

**Educational Service Fee:** This fee of \$75 is charged on third-party agency contracts requiring additional services; it is not paid by students.

**Transcript Fee:** Students may request up to five TVI transcripts, free of charge, per academic year. Additional copies will be issued for a fee of \$1 per copy.

**Occupational Challenge Exam Fee:** \$15 (may vary)

**Late Graduation Fee:** A \$20 late graduation fee will be charged to students who do not submit an Application for Graduation by the established deadline.

**Refunds:** Tuition, course fees and the registration fee are refundable only if TVI cancels a class or if the student withdraws by the refund deadline printed in the Schedule of Classes or if, after payment of nonresident tuition/fees, the student's status is changed to resident. The Health Occupations uniform fee is refundable if the student does not receive the uniform. Refund requests may be made at the Cashier's Office.

# FINANCIAL AID

TVI is committed to providing comprehensive financial assistance and information to the students of TVI. Although primary responsibility for educational costs rests with the student and his or her family, TVI, the federal government and the state of New Mexico all contribute to help students pursue a higher education. Students applying for financial aid should complete a Free Application for Federal Student Aid (FAFSA) available at all four TVI campuses.

Adult Education students are not eligible for financial aid.

The following is a summary of available financial aid programs and policies. Students should refer to the TVI Financial Aid and Scholarship Guidebook, available at student services areas of all four campuses, for details.

## GENERAL ELIGIBILITY REQUIREMENTS

To receive financial aid a student must:

- Be a U.S. citizen or an eligible noncitizen.
- Enroll at least half time (as defined by federal regulation); this applies to most Title IV programs.
- Enroll in an eligible major (see individual programs).
- Enroll in eligible courses. Some ineligible courses include GED and apprenticeship classes as well as those courses that apply to ineligible majors only. Financial aid does not pay for audited classes.
- Have a high school diploma, GED or passing scores from an exam indicating you have the ability to benefit from a program of study.
- Maintain satisfactory academic progress defined by federal regulations.
- Not be in default on any federal educational loans or owe a refund on a grant.
- Sign a statement of educational purpose, stating that the money will go toward educational purposes only.

## AWARDS

All financial aid awards are based on information provided by the student, availability of funds and on general eligibility requirements. Any award may be revised based on changes in enrollment, cost of attendance, family contribution or failure to meet satisfactory academic progress. Withdrawals or reductions in enrollment may affect an award or any future awards. The regularly scheduled date of disbursement of financial aid checks is Friday except on the initial dates of disbursement which are posted and sent with students' award letters.

### Grants

The Federal Pell Grant provides funds to undergraduate students without bachelor's degrees. Awards range between \$400 and \$3,000 per academic year, depending on a student's enrollment status, cost of attendance and family contribution.

Students who receive Federal Supplemental Educational Opportunity Grants (SEOG) must demonstrate exceptional financial need and the lowest expected family contribution.

State Student Incentive Grant (SSIG) recipients must demonstrate financial need, be New Mexico residents and enrolled at least half time.

Eligible State Child Care Grant recipients must be New Mexico residents, enrolled at least half time and have child care expenses.

### Loans

Federal Subsidized and Unsubsidized Stafford Loans, Nursing Student Loans for Service and Federal PLUS loans require separate applications. Before applying for a loan, a student must first complete the Free Application for Federal Student Aid (FAFSA). Loan applications are available from participating banks or at the Financial Aid Office at Main and Montoya campuses. Students receiving a loan must be enrolled for six credit hours. Congress also establishes loan limits that may be prorated depending on a student's classification. All first-time borrowers must attend an entrance interview with a financial aid officer before loans are processed. Students who meet Subsidized Stafford Loan eligibility requirements may borrow up to \$2,625 per year as first-year students and \$3,500 per year as second-year students.

### Work Study

Federal Work Study (FWS) and New Mexico Work Study are subsidized work programs. Work study jobs requires a separate application, which is available at all campuses. Available jobs are posted at Main and Montoya campuses. Work study employees cannot work during regularly scheduled classes nor may they work more than 40 hours per two-week period. Work study students are paid biweekly between \$5.15 and \$6.00 per hour, depending on the job. They must also carry six credit hours and maintain financial aid satisfactory academic progress while they are employed.

TVI also offers a Student Employment program. Students interested in TVI's student employment program must be enrolled in at least six credit hours, maintain a cumulative grade point average of 2.0 and complete a Free Application for Federal Student Aid.

## Scholarships and Other Aid

There are state, institutional and federal scholarships. Amounts, deadlines and eligibility requirements vary from scholarship to scholarship. For more information, students should contact the Financial Aid Office.

Aid is also available through the Veterans Administration, the New Mexico Division of Vocational Rehabilitation and the Job Training Partnership Act. Students interested in obtaining aid from these organizations should contact the agencies or the Financial Aid Office.

Eligible TVI students with children between the ages of 3 and 5 may apply to Tres Manos Child Development Center for low-cost child care. Applications are available through the Financial Aid Office.

## CHECK RELEASE

Main Campus students may pick up checks between 9:30 AM and 4:30 PM at the Cashier's Office in the Student Services Center. Montoya Campus students may pick up checks between 9:30 AM and 4:30 PM at the Cashier's Office in Tom Wiley Hall. A valid picture ID must be presented to pick up a check. If a check is not picked up within 15 days of the release date, it will be canceled. Eligible students receive award letters through the mail, notifying them of scheduled check release dates.

Non-compliance with federal regulations or TVI policy--such as unsatisfactory academic progress, insufficient enrollment or an ineligible major or class--will stop a check from being released. See General Eligibility Requirements below for other criteria that may stop a check from being released.

Students who apply for a student loan after the regularly scheduled release date will receive their checks in about six weeks. A student who is considered a first-time enrollee and first-time borrower will receive the first check 30 days after the first term of enrollment. In addition, Stafford Loans require two scheduled disbursements within a given term. All loan recipients must have their loan check authorized for release by the Financial Aid Office before they can pick up their checks at the Cashier's Office. Main Campus students should pick up their loan checks at the Cashier's Office at the Student Services Center; Montoya Campus students at the Cashier's Office at Tom Wiley Hall. To claim any amount due after charges have been paid, students must present a valid picture ID to the Cashier's Office.

## FINANCIAL AID SATISFACTORY ACADEMIC PROGRESS

Federal regulations require that financial aid recipients meet certain academic standards to be eligible for federal financial aid. To ensure financial aid recipients are making satisfactory academic progress, academic transcripts are reviewed at the end of each term to determine eligibility for the next term. All terms of attendance are reviewed, including periods in which the student did not receive financial aid. Transfer credits are taken into account when satisfactory progress is reviewed for students enrolled as liberal arts majors.

1. Qualitative Progress: Students must maintain a cumulative grade point average of at least 2.0 (a C average). Grade point values are: A = 4.0, B = 3.0, C = 2.0, D = 1.0, F = 0. Grades of I, CR, PR, NC, W, AU and TR are not calculated in the GPA. In the case

of a repeat course, only the higher grade is calculated into the grade point average.

2. **Completion Rate:** Students must complete a minimum of 70 percent of all course work (registered credit hours) attempted at TVI. Any course with a grade of withdraw (W), incomplete (I), progress (PR), audit (AU) or No Credit (NC) is not considered completed course work. Repeated courses are included in the calculation. Courses dropped before the 10th day of class are not counted as attempted credit hours.
3. **Maximum Time Frame:** Students must complete their program within 150 percent of the credit hours required by the program. Students who have reached the maximum allowable time will be suspended from receiving financial aid. Preparatory hours are excluded from this calculation. Repeated courses and transfer credits accepted by TVI towards a liberal arts degree are included in the student's maximum time frame calculation. Courses dropped before the 10th day of class are not counted against the calculation.

### **Financial Aid Probation**

Recipients are placed on one term of financial aid probation after the first term they fail to meet the qualitative or completion rate components of satisfactory academic progress. Students will receive federal student aid during the probationary term. Students are not eligible to receive a deferment for the term following their probationary term.

If a student has never received federal financial aid and is not making satisfactory academic progress at the time eligibility has been established, the student will be placed on probation during the student's first term of eligibility.

If a student does not meet all the standards outlined above by the end of the probationary term, the student will be suspended from receiving further financial aid.

### **Financial Aid Suspension**

Students are suspended from receiving financial aid if they do not meet satisfactory academic progress standards by the end of their probationary term. Students suspended from receiving financial aid are not eligible for a financial aid deferment. Students on financial aid suspension will not receive any form of federal or state financial aid (grants, loans, work study). Financial aid eligibility is reinstated when all standards of satisfactory progress are met.

### **The Appeal Process**

Students suspended from financial aid may appeal the suspension if there are mitigating circumstances affecting their progress. Students who would like to appeal the suspension must submit an appeal form and all required documentation to the Financial Aid Office. A committee will review the appeal and may grant reinstatement of financial aid for one term based on mitigating circumstances that directly contributed to deficient academic performance. Appeals are evaluated on a term-by-term basis.

### **DEFERMENT AUTHORIZATION**

Students who sign the Financial Aid Deferment Authorization Form are authorizing TVI to credit their account for tuition, fees, bookstore costs and any other charges they may incur while attending TVI. All charges are automatically deducted from financial aid. If financial aid is canceled for any reason or if it does not cover all charges, or if the

charges are not deducted from financial aid, students are responsible for paying in full any charges owed TVI. Students who fail to pay these charges by midpoint of the scheduled semester in which the expenses were incurred may be dropped from their classes and have a hold placed on their registration and academic records. They must also pay all costs necessary for collections including legal costs and attorney fees plus interest on the balance at the statutory rate. Furthermore, students who do not authorize a deferment and do not pay their charges (tuition, fees, etc.) by the scheduled deadline may be dropped from their classes. Deferment authorizations may be rescinded at any time upon written request by the student during enrollment at TVI.

Students placed on financial aid probation may receive a deferment for that probationary term but will not receive a deferment for the next term they attend until grades are posted for the probationary term and satisfactory academic progress has been reestablished. Students who are suspended are not eligible for deferments.

## REFUNDS AND REPAYMENTS

**Refunds:** TVI has a fair and equitable federal Title IV refund policy under which students or their parents can be refunded for a FPLUS loan, unearned tuition, fees, room and board and other charges for those periods of time the student did not register, withdrew or otherwise failed to complete a term.

**Pro-Rata Refunds:** Pro-rata refunds apply to students who received federal student aid, attended TVI for the first time and withdrew before they attended 60 percent of the enrollment period or term. The pro-rata refund is not less than that part of a student's tuition, fees, room and board and other charges equal to that portion of the student's enrollment period for which the student has been charged that remains on the student's last recorded day of attendance less any unpaid charges.

**Other Refunds:** All remaining refunds apply to federal aid recipients who do not meet the pro-rata refund definition. The federal refund policy applies to all students who withdraw, not just to students who provide written notice of withdrawal. The policy mandates that the percentage of institutional charges must be refunded. Students should consult the Financial Aid Guide for details.

**Repayment of Cash Disbursements:** If a student receives a federal cash disbursement for living expenses and withdraws from school, he or she must repay a portion of the amount received if the cash received is greater than the cost of living expenses at the time of withdrawal. See the Financial Aid Guide for details.

# ACADEMIC REGULATIONS

## DEFINITION OF TERMS

Note: These regulations do not apply to students taking Adult Education classes. Additional information about academic regulations is contained in the Student Handbook.

**Academic Year:** The academic year is divided into three terms: fall, spring and summer.

**Credit Hour:** Credit in courses offered by TVI is awarded in terms of hours of credit hours. Each hour of credit in a lecture class requires a minimum of 750 minutes of instruction per term; each hour of credit in a laboratory class requires a minimum of 1,875 minutes of instruction per term. For transfer purposes, one TVI credit hour generally equals one semester credit hour at other institutions.

**Course Numbering:** Courses numbered 1 through 100 are developmental or preparatory; 101 through 299 are intended for freshman and sophomore-level students.

**Classification of Students:** The following are standards for the academic classification of students;

- freshman: A student who has completed fewer than 30 credits at TVI
- sophomore: A student who has completed 30 or more credits at TVI
- part-time: A student carrying fewer than 12 credit hours per term
- full-time: A student carrying 12 or more credit hours per term

**Identification Cards:** Each student enrolled at TVI is issued a student identification card. ID cards entitle students to a variety of services and privileges including checking out library books and using the Health Center, as well as student discounts within the community.

**Attendance:** Students enrolled for credit or audit are expected to attend all class sessions. Instructors will take attendance.

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.

Students who miss the first three days of a scheduled occupational or Developmental Studies course may be dropped by the instructor. A student with excessive absences may be

dropped from a course. If a student is dropped from a course for non-attendance he or she is also dropped from corequisite courses. Students should not assume they will be dropped automatically.

A student who is dropped by an instructor for non-attendance is notified by mail. The instructor's decision is final, but if the student disagrees with the action he or she must contact the instructor within two working days of receipt of the notification.

Additional information about attendance is contained in the Health Occupations handbook and in individual course syllabi.

## GRADES

Final grades are recorded on the student's TVI transcript and calculated in both a term grade point average (GPA) and a cumulative GPA. (See page 18 for information on the recording of course drops and withdrawals on the student's TVI transcript.)

The grades awarded in all courses represent the quality of work done. Their meaning in most courses is as follows:

- A Excellent; four points per credit hour.
- B Above average; three points per credit hour.
- C Average; two points per credit hour.
- D Below average; one point per credit hour.
- F Failure; zero points per credit hour.
- CR Credit; grade is equivalent of at least a grade of C but is not computed in the grade point average.
- NC No Credit; grade is not computed in the grade point average.
- PR In Progress; course work not completed; grade is not computed in the grade point average.
- AU Audit; recorded for completion of enrollment in an audited course; no credit is earned.
- I Incomplete; grade is not computed in the grade point average (see Incomplete Grade Assignment and Removal).
- W Withdrew; used for student, instructor and administrative withdrawals.
- TR Credit for transfer, non-traditional or examination; grade is not computed in the grade point average.

### Grade Point Average

The grade point average (GPA) is computed by multiplying the number of credit hours of a course by the quality point value assigned to the letter grade: A=4, B=3, C=2, D=1, F=0. For example, a four-credit-hour course with a grade of A carries 16 quality points. Then the total number of quality points earned is divided by the total number of eligible credit hours attempted (GPA hours).

Grades of I, CR, PR, NC, W, AU and TR are not calculated in the GPA. Effective fall 1991, courses on the student's transcript or grade card which have an E in the repetition column are excluded from GPA calculation.

## Grade Options

**Traditional Grade:** Students may choose to enroll in Arts & Sciences and occupational courses for a traditional (letter) grade (A, B, C, D, F). Traditional grades are used in calculating GPAs. Students interested in transferring their TVI course work to another institution are encouraged to enroll in courses for a traditional grade.

**Audit:** Students may register in occupational or Arts & Sciences courses for audit if they have met the prerequisite(s) for the course. Students may not enroll in Adult & Developmental Education courses for audit.

Students who enroll for audit are expected to attend all class sessions but have no responsibilities for completing assignments.

Courses taken for audit will appear on the student's transcript as AU with no credits recorded and no grades assigned. Courses taken for audit are not included in the student's total course load for enrollment verification and cannot be used to meet prerequisite or corequisite requirements.

**Credit/No Credit:** Students may elect to take Arts & Sciences courses for credit/no credit (CR/NC) rather than for a traditional grade. CR/NC is not an option for General Honors or most occupational courses. All Developmental Studies courses are graded on a CR/NC basis. A maximum of nine credit hours graded CR/NC will be allowed toward the Arts & Sciences requirements in certificates or associate degrees.

**CR (Credit):** Students must meet all minimum requirements for the course. CR is the equivalent of at least the grade of C. Although the student will receive credit for completing the course, a grade of CR will not be computed in the GPA.

**NC (No Credit):** Students who do not satisfactorily complete minimum course requirements will receive NC. A grade of NC will not be computed in the GPA and the student will not receive credit for the course.

**Note:** Certain consequences may result from choosing the CR/NC option. Courses with grades of CR will not be allowed in some Business Occupations majors (programs). Some schools, scholarship committees and honorary societies do not accept this grading system and/or convert grades of CR to C and NC to F. Students planning to transfer to another institution should talk to an advisor at that institution about possible consequences of CR/NC grades.

**Open-Entry, Open-Exit:** Students may register for courses which have flexible entry and/or exit points with the open-entry, open-exit grading option. Depending on the course, the student may receive a traditional (A,B,C,D,F), credit/no credit (CR/NC) or an in progress (PR) grade.

**Incomplete Grade Assignment and Removal:** A grade of I (incomplete) is given when circumstances beyond the student's control have prevented completion of the work for a course within the official dates of a term. In no case is an I to be used to avoid a failing grade or to allow extra time to complete work normally expected.

Removal of an I grade can only be accomplished by completing the work in a manner acceptable to the instructor no later than the 10th day of the following term.

An I not made up by the 10th day of the following term will automatically revert to an F or NC on the student's record and cannot be changed by work completion or course repeat.

**Repeating Courses:** A student may choose to repeat a course for a better grade. Each course enrollment and all grades will appear on the student's transcript. Only the higher grade will be used to calculate the GPA when letter grades (A,B,C,D,F) are recorded for both the original course and each course repetition. This policy applies to courses with identical course abbreviations and numbers except for the following: topics, independent study, internship and cooperative education courses, and when course abbreviations and numbers change as a result of new programs and/or program revisions. It does not affect any courses taken prior to fall 1991.

Note: Certain forms of financial aid will not provide assistance to students who repeat courses previously completed successfully. Compliance with such regulations is the student's responsibility.

### Grade Appeals

Students with questions concerning a final grade in a course must contact the instructor within the first week of the following term. If the instructor is not available the student should contact an instructional administrator in the department in which the course was taken. If an error is identified, the instructor or instructional administrator will submit a grade correction to the Records Office.

If the matter is not resolved at the department level, the student may formally appeal the final grade by submitting a Grade Appeal Form (available in instructional offices) to the office of the dean of students. The appeal must be made by the end of the fourth week of the term following the term of the grade in question. If the dean of students determines that the appeal has merit to be heard, a review panel will be convened within three weeks of the appeal submission. The decision of the review panel will be final.

A student who fails a course after being unable to officially withdraw or drop due to circumstances beyond his/her control (for example, hospitalization or military service) may appeal in writing to the director of enrollment services/registrar. The appeal, along with supporting documentation, must be submitted by the end of the following term.

### ACADEMIC STANDARDS

**Honor Roll:** The Vice President's Honor Roll is compiled each term, listing students who completed 12 or more credit hours with traditional grades during the term and who achieved a term GPA of 3.5 or higher.

**Warning:** A student whose cumulative GPA is between 1.75 and 1.99 in a given term will receive a warning. Notification of academic warning appears on the student's grade report at the end of each term.

**Probation:** A student whose cumulative GPA (based on at least 16 GPA credit hours attempted at TVI) falls below 1.75 in a given term will be placed on probation effective with the following term of enrollment. Students are continued on probation if they withdraw from TVI while on probation. Notification of academic probation appears on the student's grade report at the end of each term.

Note: Health Occupations programs may have specific requirements which affect a student's eligibility to continue in the program. Students should refer to the program hand-

## SUSPENSION

After two consecutive terms of probation a student will be suspended from TVI when both the term and cumulative GPA are below 1.75. The duration of the initial suspension is one term; for subsequent suspensions, one year. Notification of academic suspension appears on the student's grade report at the end of each term and in a notification letter sent to the student.

If a suspended student has preregistered for the next term, his/her schedule will be deleted and a refund of all fees and tuition will be authorized. A suspended student may be eligible to enroll in Developmental Studies courses during the student's initial suspension period.

**Suspension Appeals:** A student who has been suspended may submit a written appeal, explaining the unusual circumstances justifying why he or she should be readmitted, to the director of Admissions and Records, who will approve or deny the appeal. If the director denies the appeal, the student may appeal in writing to the Student Academic Appeals Committee by filing the appeal with the director of Admissions and Records for transmittal to the committee. The student may present the case to the committee in person or ask that the written appeal be considered. If the committee decides to readmit a suspended student, his or her academic status will be probationary.

## GRADUATION

TVI conducts one graduation ceremony each year at the end of the spring term. A student graduates in the term in which all graduation requirements are completed even if there is no graduation ceremony scheduled that term. In 1999, graduation is April 23.

**General Requirements:** To be eligible to receive a degree or certificate, students must meet the following requirements as well as those listed under the specific major (program) they wish to pursue:

- an overall cumulative GPA of 2.0 or better;
- completion of the last term of course work in residence at TVI;
- enrollment in the major in which they plan to graduate (see page 18 for information on adding, changing and declaring majors);
- completion at TVI of at least one-quarter of the required program coursework and credit hours for a certificate and at least 15 credit hours of the required program coursework for a degree after the program becomes available;
- completion of all program and course requirements (occupational coursework which is at least ten years old must be validated by the instructional department in which the course was offered); and
- completion and submission of an Application for Graduation within two terms of last enrollment.

Note: A maximum of nine credit hours of CR may be counted toward certificates or degrees in majors which allow the CR/NC option. Courses graded AU do not apply toward

the graduation residence requirement.

All debts to TVI must be paid in full before graduation.

**Application for Graduation:** Students in degree or certificate programs must submit a Graduation Application Packet by midterm of the term in which all graduation requirements are completed.

Students requesting a certificate or degree in more than one major must submit an application for each major. Students completing more than one certificate or degree program may not wait until the final program has been completed to apply for graduation. Applications must be submitted as each program is completed; failure to do so may cause incremental certificates to be denied.

Students using transfer credit, examination credit and/or course waivers/substitutions to fulfill program requirements must have all credit established and all documentation on file in the TVI Records Office prior to submitting the graduation application (see page 14 16).

On the Main Campus, application packets for vocational programs are available in instructional department offices; liberal arts packets are in the Advisement Center. At the Montoya, Rio Rancho and South Valley campuses, application packets are available in the Advisement/Counseling Offices.

Students who do not submit an application by the deadline must pay, in advance, a \$20 late graduation processing fee for each application. No application will be processed after the tenth week of the term.

**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.

**Choice of Catalog:** The application form for a degree or certificate requires a student to specify the catalog year listing degree or certificate requirements. A student may choose to graduate under the catalog that was in effect when he or she officially entered the specific major or any subsequent catalog, provided that:

- the selected catalog is not more than five years old when the degree or certificate requirements are completed and the student has been in continuous enrollment; and
- the certificate/degree program does not have a specific requirement about choice of catalog.

Regardless of the catalog under which a student will graduate, pre- and corequisites must be met for each course at the time of registration. 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's transcript must show enrollment in each successive term. Full-term courses dropped on or before the 15th day of the term or session (including Saturdays) do not appear on the student's TVI transcript. If an interruption in enrollment of one or more terms (excluding summers) occurs, graduation requirements applicable at the time of re-enrollment will apply.

**Updating Occupational Certificates:** A student who has received an occupational certificate may update his/her skills and earn a subsequent certificate in that program when:

- the previously earned certificate is ten years old or older, and

- 100% of the certificate coursework was completed within the past ten years; and
- the student has met all other graduation requirements as detailed in this section.

## STUDENT ACADEMIC RECORDS

Official academic records are maintained by the Records Office. These records include, but are not limited to, the admissions application, high school and/or college transcripts, grades and academic standing.

TVI's policy for maintaining confidentiality of student academic records is in accordance with the Family Educational Rights and Privacy Act of 1974 (FERPA, P.L. 93-380, 512). Copies of the Rights and Privacy Act are available for examination in the Records Office at the Main Campus and the Admissions Offices at the Montoya, Rio Rancho and South Valley campuses.

**Access to Student Academic Records:** All currently enrolled and former students may have access to their academic records. Other individuals and agencies who may have access to students' records include:

- TVI officials who have a legitimate educational interest in the records;
- officials of another school in which a student seeks to enroll, intends to enroll or is enrolled
- officials of the U.S. Department of Education, the Comptroller General, and state and local educational authorities;
- organizations providing the student's financial aid or determining or assisting in determining financial aid decisions concerning eligibility, amount, condition and enforcement of terms of said aid;
- federal, state and local officials or authorities if required by a state or federal law
- organizations conducting certain studies for or on behalf of the Institute
- accrediting institutions
- organizations or individuals conducting studies for or on behalf of TVI
- parents or legal guardians of a dependent student under the age of 18, as defined in the Section 152 of the Internal Revenue Code
- individuals serving a judicial order or a lawfully issued subpoena, provided that a reasonable effort is made to notify the student prior to compliance
- honor societies and other chartered student organizations for determining membership
- any person with the written consent of the student or the parent or legal guardian of students under 18
- appropriate parties in a health or safety emergency

**Public Directory Information:** TVI has defined public directory information as:

- student's name
- major field of study
- classification
- dates of attendance
- awards and honors
- degrees/certificates awarded

This information is available to the public and will be released unless an annual written

request to withhold the information is on file in the Records Office. Request forms may be obtained in the Records Office.

**Challenge of Contents:** Students have the right to challenge the content of their academic record if they feel the information is misleading, inaccurate or in violation of privacy or other rights. However, the fairness of a grade may not be challenged under this provision. Any dispute over the contents of the record will be handled through informal discussions between the student and the Records Office. If such informal meetings are not satisfactory, the student has the right to a formal hearing before an appeals committee. Students have the right to file with the U.S. Department of Education a complaint concerning alleged failures by TVI to comply with the requirements of FERPA.

**Release of Transcripts:** Unofficial TVI transcripts are available from the "Touch TVI" kiosks at all campuses and from the Records Office at Main Campus. Official TVI transcripts are available from the Records Office and from the Admissions Offices at the Montoya, Rio Rancho and South Valley campuses (additional processing time may be required). Students may request up to five official TVI transcripts, free of charge, per academic year. Additional transcripts cost \$1 each. No transcript is issued until all institutional obligations are paid.

Transcripts from other institutions received by TVI are not copied or returned to students.

**Change of Name:** Name changes will be processed only for currently enrolled students. Students must bring appropriate documentation (at least two types of identification showing the new name) to the Records Office on the Main Campus or the Admissions Offices at the Montoya, Rio Rancho or South Valley campuses. Examples of such documentation are: marriage certificate, birth certificate, driver's license, original social security card or court order for legal name change.

**Change of Address:** The student is expected to keep TVI informed of his or her current address. Address changes are processed only for currently enrolled students. Changes must be reported in writing to the Records Office on the Main Campus or the Admissions offices at the Montoya, Rio Rancho or South Valley campuses.

**Student Right to Know and Campus Security Act:** Student retention and completion data are available from TVI's Institutional Planning and Research Office. An abbreviated graduate job placement table is on page 10-11; the full report is in the Student Handbook. Campus security policies and crime statistics, as well as the Code of Conduct and the substance abuse and sexual harassment policies, are published annually in the Student Handbook.

# STUDENT SERVICES

Students-prospective, new, continuing and former-are provided with a wide range of services at TVI. The following services are available at all four campuses:

- admission and registration information;
- new and continuing student orientation;
- academic advisement; and
- services or referrals for counseling, financial aid and testing.

Services at the Main and Montoya campuses include support for students with disabilities, financial aid, testing, career planning, job placement and (at Main only) health and fitness care. Counseling, career planning and some testing services are available by appointment.

The hub of TVI student services is the Student Services Center at 900 University Boulevard SE. At the Joseph M. Montoya Campus, services are available in Tom Wiley Hall and in H Building. Students may call the TVI admissions information line, 224-3160, for directions to Main and Montoya services. Student Services at Rio Rancho may be reached by calling 892-7113; the number at South Valley Campus is 224-5000.

Details about student services, as well as academic and conduct regulations, campus maps, a glossary of college terms and tips for student success, are published in the TVI Student Handbook, which is distributed free at all campuses. "Touch TVI" kiosks at all campuses offer self-service information and access to TVI's home page and students' files. Information and assistance also are available from the dean of students office, 224-4342.

## Admissions and Advisement

Applications for admission to the Institute are accepted at all campuses. Professional advisors and staff in the Advisement Centers provide:

- information about TVI programs and requirements;
- directions to campus and community services;
- help with decisions about academic goals;
- information about other New Mexico schools; and
- information about transfers, testing, pre- and corequisites, majors, residency, graduation and concurrent enrollment.

## Personal and Career Development Counseling

TVI's Counseling Centers at Main and Montoya campuses are staffed by professional licensed counselors, a Native American advisor and support staff who provide career, educational and personal counseling; workshops and special-interest groups; information for those preparing for the GED test; and crisis intervention. The center's Career Resource Room has books, videos, Internet access and other research tools for students.

### Special Services

Special Services assists students with physical, mental, learning, visual, speech or hearing disabilities. Career counseling, program planning, classroom accommodations, adaptive equipment, coordination with community support agencies and specialized learning plans are available. For students enrolled in developmental, certificate and associate degree courses, limited curriculum adjustments can be made to accommodate disabling conditions. Follow-up services such as counseling and job-seeking help are also provided.

### Testing Services

TVI's Testing Centers, in the Student Services Center at Main Campus and in Tom Wiley Hall at Montoya Campus, offer a variety of tests, most of them free of charge. Study guides for most exams are available in the Testing Centers and in Admissions offices. Testing accommodations for individuals with disabilities are available upon request; documentation and prior notice are required.

Among the examinations administered at TVI are Accuplacer math, reading and English tests; computer literacy tests; the Healthcare Technician program entry exam; the Nursing Basic Math Test and Nursing Mobility Profile; the Spanish placement exam and typing tests.

The American College Test assessment tests for placement are not offered at TVI. Students wishing to take the tests must register for a national test date; information and registration packets are available in the Testing Centers. TVI accepts ACT scores from all students for placement in certain courses. TVI also honors SAT, AP and CLEP scores but does not administer these exams; for further information students may contact the Testing Centers.

### GED Exam

Anyone at least 17 years old who is not enrolled in high school may take the General Educational Development (GED) exam at TVI to earn a high school diploma. The exam contains sections on writing, reading, science, social studies and math. A \$10 fee is charged for the GED test.

A 17-year-old may take the exam only 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.

The Department of Adult & Developmental Education offers both a pre-test to determine readiness for the exam and free GED preparatory classes (see page 41).

## Student Job Placement

Student Job Placement provides a variety of job search services, including job listings, a job hotline (224-3061), resume assistance, mock interviews, on-campus interviews with employers, job market information, job fairs and workshops, videos and personalized assistance. Services vary according to eligibility. An abbreviated table showing graduate job placement is on page 10-11; the full report is in the Student Handbook.

For information concerning student internships and cooperative education courses, students may contact the Business Occupations, Technologies and Trades & Service Occupations departments.

## Health Care

The Health Center, located in the Student Services Center on Main Campus, is open weekdays from 8 AM to 5 PM. First aid and basic primary care services are offered. Services are free except for complete physical exams and some immunizations. Details about private-provider student health insurance are available at the Student Activities Office in the Student Services Center at Main Campus and in Wiley Hall on the Montoya Campus.

## Campus Life

Albuquerque TVI offers its students a number of activities which are meant to enrich life on campus and to provide for a well-rounded education. Lists of activities and services, along with the campus code of conduct, are published in the Student Handbook.

**Child care:** TVI maintains affiliation with Tres Manos Child Development Center, 823 Buena Vista SE on the south side of Main Campus, to provide daytime care for children of low-income students. Neighborhood residents may also use Tres Manos. Cost of services is on a sliding scale and preference is given to single parents. (Also see page 24.)

**Parking:** Parking is free at most campus lots, although spaces are limited. At Main Campus, students and employees may purchase parking permits for the gated lot east of the Student Services Center.

Parking stickers are required for all campus lots and are available free at the information counter in the Admissions Office at Main and Montoya and in the administrative offices at Rio Rancho and South Valley campuses. Parking violations may result in disciplinary action against car owners. Cars parked in tire lanes and in spaces reserved for the handicapped are subject to towing.

TVI students and employees also may purchase parking permits for the University of New Mexico south lot on César Chavez Boulevard. A shuttle bus stops at the Main Campus.

## ACADEMIC SUPPORT SERVICES

These services are available free to students and, in some cases, to the public. Libraries and other facilities are generally open weekdays and, when classes are in session, evenings and Saturdays. Hours are listed in the Student Handbook.

**Libraries:** The libraries at the Main and Montoya campuses offer books, videotapes,

maps, pamphlets, newspapers, magazines, encyclopedias and dictionaries, as well as computerized information retrieval systems. Special collections are maintained in all TVI occupational subjects. Services include help in locating materials, instruction in using a library, study facilities, interlibrary loans, magazine back issues and coin-operated copying machines.

The Main Campus Library is in Jeannette Stromberg Hall; the Montoya Campus Library is in J Building.

Information about the libraries' electronic resources is available on the TVI home page: [www.tvi.cc.nm.us](http://www.tvi.cc.nm.us).

**Instructional Media Resources:** This unit provides audiovisual, media production and distance learning technical support. Other services include assistance in the design, preparation and application of audiovisual materials for instruction, information and promotional activities.

The Main Campus IMR offices are in Stromberg Hall and Salazar Hall. At Montoya, IMR is in K Building.

## ASSISTANCE CENTERS FOR EDUCATION

The Assistance Centers for Education (ACE) offer one-to-one and small-group learning assistance, reinforcing classroom concepts, fostering independent thinking and developing problem-solving skills. Services are available free to students and, in some cases, to members of the public.

The Main Campus ACE, in Jeannette Stromberg Hall, is the home of the open computer lab, which is for use by students and, on a space-available basis, by the public. The lab has Pentium computers with various software for educational and personal uses on a first come, first served basis. Staff members are on duty to provide general assistance.

Other ACE components are:

**Tutorial/Learning Centers:** The T/LCs provide all TVI students with free individual tutoring services on a walk-in basis. Subjects covered are math, English, chemistry, physics and biology. Vocational tutors are available for Technologies (including computer programming), Health Occupations and accounting courses. The centers also offer audio and video tapes which support TVI's instructional programs as well as handouts for self-study. Self-paced programs are available in computer use, academic skills improvement and test preparation. Each center has computers for student and public use. The T/LCs are accredited by the College Reading and Learning Association. The Main Campus T/LC is in Stromberg Hall. At Montoya, the T/LC is in J Building.

**Adult Education Learning Centers:** The centers provide individualized instruction and independent study in reading, math, writing and English as a second language. A variety of instructional resources is available, such as audio cassette tapes, video tapes, textbooks and software. Instruction is provided on an open-entry basis by tutors. The Main Campus center is in Stromberg Hall. The Montoya center is in J Building.

**Math Applications Learning Lab:** The Adult & Developmental Education Department offers extra assistance in the Math Applications Learning Lab. For the many students who learn by doing, this lab provides the hands-on practice needed to understand principles and formulas commonly used in basic math and algebra classes. At Main Campus the lab is in Ken Chappy Hall. At Montoya the lab is in J Building.

**Writing and Reading Assistance Center:** Adult & Developmental Education students have access to one-on-one and small-group help with writing and reading projects in the WRAC. This help includes instruction in pre-writing techniques, outlining strategies, essay organization, summary writing, grammar, vocabulary building, reading comprehension, test preparation, study skills and other concepts covered in reading and writing courses. Resource materials and computers with writing and reading software are also available. This lab is located in Ken Chappy Hall on the Main Campus and in J Building at Montoya.

**Developmental Studies Math Tutoring:** Instructional technicians provide one-to-one and small-group instruction to Developmental Studies students at both campuses. The math tutoring centers also offer weekly small-group workshops, computer-aided instruction, a resource library and a lending library of math videos and calculators. At Main Campus the center is in Ken Chappy Hall; at Montoya it is in J Building.

# ADULT & DEVELOPMENTAL EDUCATION

The Department of Adult & Developmental Education offers non-credit courses in adult education and credit courses in developmental studies. Students who wish additional information may call 224-3939.

## ADULT EDUCATION

### NON-CREDIT SKILLS COURSES

Our goal in Adult Education at TVI is to help students identify and achieve basic educational goals. To do that, we offer free non-credit courses in basic reading, math, writing, English as a second language and job/life skills. These courses may help students prepare for higher education, job advancement or personal fulfillment. The Adult Education Program is a separate non-credit component of TVI. Adult Education students receive the same services as other TVI students (library access, for example) but do not follow the procedures outlined in this Catalog for admission/registration and are not eligible for financial aid.

**Se Habla Español.** Nuestro objetivo en el programa de Educación Para Adultos en TVI es ayudar a los estudiantes a identificar y realizar sus metas educacionales básicas. Para cumplir con ello, ofrecemos cursos, sin crédito, en Inglés como segunda idioma (ESL), cursos que tratan las destrezas académicas fundamentales, así también como el mundo del trabajo y de la vida cotidiana. Todas estas clases podrán conducir al estudiante hacia más educación, avance en el trabajo y/o realización personal.

**Locations.** Adult Education classes are offered during the day and in the evening at each of the TVI campuses as well as at many sites throughout Bernalillo County. Additional information on Adult Education sites is available at any of the TVI campuses.

**Registration.** Anyone interested in registering for an Adult Education course may do so in person at any of the TVI campuses or community sites where courses are offered. Adult Education offices are located in KC-1 on Main Campus, H-124 on Montoya Campus and in the Main Office area at South Valley Campus. Prior to registering for classes, students are required to complete the CASAS assessment for placement into classes.

**Costs.** Classes and textbooks are provided free to students.

**Attendance.** Teachers take attendance at each class session. If a student is absent four classes in a row, the teacher tries to contact the student. A student may be dropped from the class after four consecutive absences. Students who have missed or dropped classes are encouraged to go to the Adult Education Learning Centers at the Main and Montoya campuses to continue their studies.

**Standards of Progress.** Each student receives a certificate that indicates the total number of hours he or she attended in each course. No letter grades are given.

**Classes.** Course offerings reflect the needs of the community and may change from term to term. Generally, the Adult Education program offers courses in three areas of study: basic skills (including preparation for the GED high school equivalency exam), English as a second language and job/life skills. Some courses are offered in full-term format, and others are offered in a shorter format. Courses are full term unless otherwise noted.

### Adult Education Basic Skills Courses

The Adult Education program offers a range of classes in reading, mathematics and writing.

#### **BSK 040      Basic Language Skills**

Explores basic reading/writing strategies using phonics, development of sight vocabulary and collaborative use of materials in themes relevant to students' lives.

#### **BSK 041      Basic Language Skills II**

Improves developmental phonics, dictionary skills, grammar, response to reading and self-expression.

#### **BSK 050      Basic Skills Reading**

Analyzes non-fiction and fiction to identify main idea, point of view and organizational patterns. Includes summarizing, drawing conclusions and responding to readings.

#### **BSK 051      Reading in Literature and Arts (half term)**

Covers reading and analysis of literature (short stories, poetry, drama and commentary) with multi-cultural themes to improve comprehension and prepare for the literature and arts test of the GED.

**BSK 052      Reading in Social Studies (half term)**

Studies history, behavioral sciences, political science, geography and economics using critical thinking to prepare for the social studies test of the GED.

**BSK 053      Reading in Science (half term)**

Covers critical reading in a broad spectrum of science disciplines: introduction to plant and animal biology, human biology, earth science, chemistry and physics to prepare for the science test of the GED.

**BSK 060      Math Fundamentals**

Presents overview of the language and basic concepts of math as well as a refresher in addition, subtraction, multiplication and division using whole numbers and decimals.

**BSK 061      Whole Numbers, Decimals and Fractions (half term)**

Covers decimal counting system (whole and fractional parts) and development of problem-solving skills necessary for success on the GED exam and in personal and job-related situations.

**BSK 062      Ratios and Proportions, Percents and Data Analysis (half term)**

Provides instruction in constructing ratios and proportions to solve word problems; analysis/interpretation of data contained on tables, charts and graphs; and calculation of percentage.

**BSK 063      Basic Geometry, Measurement and Algebra Topics**

Covers measurement/geometry and fundamental algebra necessary for success on the GED exam and in practical problem-solving.

**BSK 071      Spelling and Grammar**

Provides comprehensive refresher in language mechanics, usage and spelling improvement--prerequisite or corequisite for BSK 072, Basic Skills Sentence and Paragraph Writing.

**BSK 072      Sentence and Paragraph Writing (half term)**

Focuses on sentence structure, grammar, punctuation, syntax and paragraph development with practice in analyzing writing assignments to ascertain purpose and composing narrative, descriptive, informative and persuasive paragraphs.

**BSK 073      Essay Writing (half term)**

Presents systematic study of the steps in the writing process, essay structure and organizational methods to produce five to seven essays on topics representative of those given on the GED writing skills test.

**BSK 080      Basic Skills Learning Center**

Includes individualized study and tutoring in basic skills math, reading and/or writing with access to computer, video and audio programs as well as other instructional materials

in the Adult Education Learning Center at Main or Montoya campus.

**BSK 081 Basic Skills Integrated**

Provides comprehensive refresher of basic reading, writing and math skills taught both on campus and at community sites to help students prepare for the GED examination or improve competencies. Computer-assisted instruction available in some locations.

**BSK 082 Spanish GED**

Prepares students for the GED exam conducted in Spanish, including instruction in math, writing, grammar and reading. Some English as a second language instruction in mechanics and usage to prepare for the English competency portion of the Spanish GED exam is included.

**BSK 082 GED En Español**

Preparación para el examen de GED en español, incluyendo instrucción en matemáticas, escritura, gramática, y lectura. Preparación incluido por el porción del examen que está en inglés.

### Adult Education English as a Second Language Courses

The TVI Adult Education Program also offers a wide range of classes for people for whom English is a second language.

**ESL 040 ESL Literacy**

For students who have had no previous exposure to written or spoken English. Introduces alphabet, phonemic system, basic vocabulary and simple sentences in meaningful, communicative contexts.

**ESL 050 ESL Beginning I**

Develops English language skills with an emphasis on pronunciation practice, listening, comprehension, conversation and basic grammar.

**ESL 051 ESL Beginning II**

Expands students' communication range, which may include listening and reading for meaning, responding to written and oral communication relevant to daily life, learning grammatical skills and conventions for oral and written English.

**ESL 060 ESL Intermediate**

Focuses on practice in communication skills for everyday life, which may include voicing opinions and responding appropriately in conversations on familiar topics, discussing short reading selections, learning and reviewing grammatical skills and conventions of oral and written English.

**ESL 070 ESL Advanced**

Covers conversation, writing, reading and evaluation of materials and study of advanced

grammar in meaningful, communicative contexts.

**ESL 071            Transitional ESL**

For students who can function comfortably in English and who are ready for the workplace or plan to continue their studies in developmental, vocational, or liberal arts classes. Provides study of and practice in communication skills with practical information regarding educational programs and support services.

**ESL 081            ESL Integrated**

Comprehensive, community-based classes for students at all levels of English proficiency. Presents reading, writing, listening, speaking and grammatical skills through group work, paired practice and self-paced instruction.

**ESL 082C          Citizenship**

Covers basic English, American history and government for students who have a working knowledge of English and are preparing to become American citizens.

**ESL 082            ESL Special Topics**

Presents various topics. See Schedule of Classes.

Note: Students may also study any ESL subject on an individual basis at the Main Campus or Montoya Campus Adult Education Learning Centers.

### **Adult Education Job/Life Skills Courses**

The job/life skills courses offered by the Adult Education program are primarily intended to provide adults with training that will make them more effective both at home and in the workplace.

**JLS 040            Job/Life Skills**

Examines critical life issues--self-esteem, study skills, parenting and job skills--and explores occupational choices and job placement services at TVI.

**JLS 041            Computer Literacy for Adult Education**

Introduces computer hardware and terminology, word processing programs and use of the Internet.

**JLS 042            Job Search Skills (half term)**

Studies positive presentation techniques through job applications, resumes and interviews; exploration of sources of employment particularly helpful for students transitioning from welfare to work.

Note: Students may also study any job/life skills subject on an individual basis at the Main Campus or Montoya Campus Adult Education Learning Centers.

# DEVELOPMENTAL STUDIES

## CREDIT COLLEGE-PREPARATORY COURSES

There are many reasons why students are not ready for college-level studies. Some did not enroll in the right courses in high school; others once had the skills but now need to brush up; and some students' lives have been full of responsibilities, circumstances or priorities that made it difficult for them to be successful.

Faculty and staff in TVI Developmental Studies work with students to develop the basic academic, study and life skills necessary for college success, whether those students choose to follow a liberal arts or a vocational path. Credit courses in reading, writing, math and science are offered as are introductory courses to some vocational programs. The department also offers credit courses to help students develop useful strategies and skills such as time management, stress management, calculator use and test preparation. Students are placed in the appropriate courses based on their needs, interests, academic abilities and test scores.

Developmental Studies courses are graded CR (credit) and NC (no credit). This helps students build their skills without the added pressure of the traditional grading system (A,B,C,D,F). While credit from Developmental Studies courses is not transferable to other degree-granting institutions, these courses typically help students meet admissions requirements and program prerequisites.

Eligible students may receive financial aid for up to 30 credit hours in Developmental Studies courses. Students using veterans' benefits should check with VA certification advisors (in the Financial Aid Office) as some Developmental Studies courses are not eligible for benefits.

### English

#### **ENG 096      Special Topics      1-3 credit hours**

Presents various topics in developmental English (see descriptions at end of Developmental Studies section).

#### **ENG 098      Basic Writing and Reading Skills      3 credit hours**

*(Prerequisite: appropriate placement by exam)* Focuses on reading and writing in everyday life. Students practice study-read strategies, write paragraph-length compositions, pay special attention to the construction of powerful sentences and review English grammar, usage and punctuation. (3 theory hours + 1 lab hour a week)

#### **ENG 099      Practical Writing      3 credit hours**

*(Prerequisite: ENG 098, ESL 098 or equivalent)* Provides the opportunity to focus on writing tasks related to daily life, school and the workplace. Student writers polish skills in writing effective paragraphs and review English grammar, usage and punctuation. (3 theory hours + 1 lab hour a week)

**ENG 100 Writing the Academic Essay 3 credit hours**

*(Prerequisite: ENG 099, ESL 099 or equivalent)* Presents ways to organize, support logically, revise and edit effective academic essays. Reviews English grammar, usage and punctuation. Satisfactory completion of ENG 100 meets prerequisite for ENG 101. (3 theory hours + 1 lab hour a week)

### English as a Second Language

**ENG 098L ESL LAB 1 credit hour**

For ESL students enrolled in ENG 098, 099 or 100. Teaches students to recognize and correct grammatical errors commonly made in writing assignments by native speakers of a language other than English. Also provides practice in speaking, listening and vocabulary development. (2 lab hours a week)

**ENG 099L ESL Lab 1 credit hour**

For ESL students enrolled in ENG 098, 099 or 100. Teaches students to recognize and correct grammatical errors commonly made in writing assignments by native speakers of a language other than English. Also provides practice in speaking, listening and vocabulary development. (2 lab hours a week)

**ENG 100L ESL Lab 1 credit hour**

For ESL students enrolled in ENG 098, 099 or 100. Teaches students to recognize and correct grammatical errors commonly made in writing assignments by native speakers of a language other than English. Also provides practice in speaking, listening and vocabulary development. (2 lab hours a week)

### Mathematics

**SSKL 092 Introduction to the Scientific Calculator (half term) 1 credit hour**

Introduces functions on the calculator keyboard. Includes statistics, programming and graphing functions. Useful preparation for math, science and Technologies courses. Calculators provided. (2 theory hours + 1 lab hour a week) Course fee: \$5

**SSKL 094 Reducing Math Anxiety (half term) 1 credit hour**

Offers students a chance to gain understanding of math anxiety and modify related behaviors through the use of group discussion, journal entries and math study skills. (2 theory hours a week)

**MATH 096 Special Topics 1-3 credit hours**

Presents various topics in developmental math.

**MATH 097 Introductory Mathematics 6 credit hours**

*(Prerequisite: appropriate placement by exam)* Provides individualized and small-group instruction in basic mathematics: whole numbers, fractions, decimals, percents and ratios

and proportion. Satisfies prerequisite for MATH 099. (5 theory hours + 3 lab hours a week)

**MATH 099 Basic College Mathematics 3 credit hours**  
(Prerequisite: MATH 097 or equivalent) Integrates topics from basic mathematics, geometry and algebra. Helps prepare students to enter programs in Business Occupations, Technologies, Trades & Service Occupations, Health Occupations or MATH 100A. (3 theory hours + 1 lab hour a week)

**MATH 099H Basic Math for Health Occupations 3 credit hours**  
(Prerequisite: MATH 097 or equivalent) Covers material necessary for the Nursing/Medical Laboratory Technician basic math test: basic arithmetic, the metric system and other measuring systems. Meets prerequisite requirement for MATH 100A. (3 theory hours a week)

**MATH 100A Algebraic Problem Solving I 3 credit hours**  
(Prerequisite: MATH 099 or equivalent) First of a two-course series in elementary algebra. Includes signed numbers, solving linear equations, formulas, graphing, solving systems of equations and applications. Satisfies prerequisite for MATH 100B, MATH 111 (MATH 100B is recommended) and MATH 119. (3 theory hours + 1 lab hour a week)

**MATH 100B Algebraic Problem Solving II 3 credit hours**  
(Prerequisite: MATH 100A) Second of a two-course series in elementary algebra. Includes exponents and polynomials, rational expressions, factoring, roots and radicals and quadratics. Satisfies prerequisite for MATH 120 and is recommended for MATH 111. (3 theory hours + 1 lab hour a week)

**MATH 100 Algebraic Problem Solving 3 credit hours**  
(Prerequisite: appropriate placement by exam) Covers same material as MATH 100A and MATH 100B at a fast pace. One-term course designed for students with demonstrated ability in basic algebra. Satisfies prerequisite for MATH 111, MATH 119 and MATH 120. (3 theory hours + 1 lab hour a week)

### Reading and Study Skills

**RDG 096 Special Topics 1-3 credit hours**  
Presents various topics for reading instruction.

**RDG 099 Reading Improvement 3 credit hours**  
(Prerequisite: ENG 098 or equivalent) Introduces reading required for success in occupational majors and the workplace. Students work on comprehending and applying critical thinking to the workplace and academic setting. (3 theory hours + 1 hour lab a week)

**RDG 100 Reading and Critical Thinking 3 credit hours**  
(Prerequisite: RDG 099 or equivalent) Focuses on reading required for success in college.

Students work on comprehension, problem solving, note-taking, summarizing and computer-assisted research skills. (3 theory hours + 1 lab hour a week)

**SSKL 096      Special Topics      1-3 credit hours**  
Presents various topics in study skills (see descriptions at end of Developmental Studies section).

**SSKL 100      Student Success      3 credit hours**  
Provides an opportunity to learn and adopt methods to promote success in school. Includes time management, test-taking, study reading and other school success strategies. (3 theory hours + 1 lab hour a week)

## Science

**SCIE 096      Special Topics      1-3 credit hours**  
Presents various topics in developmental science.

**BIO 100      Introduction to Biology      3 credit hours**  
*(Prerequisites: MATH 099 and RDG 099 or equivalent)* Explores basic concepts through taxonomy, anatomy, cells and tissues and genetics while developing a sense of scale, microscope skill, observation and diagramming. Course complements but does not replace CHEM 100. (3 theory hours + 1 lab hour a week)

**CHEM 100      Basics of Chemistry      3 credit hours**  
*(Recommended pre- or corequisite: MATH 100A or equivalent)* For students who did not take high-school chemistry. Provides essential background for next level success, in particular BIO 123, BIO 136 and CHEM 111. Includes applied math skills, reading and science study habits. (3 theory hours + 1 lab hour a week)

## Occupational Support Courses

**OCC 096      Special Topics      1-3 credit hours**  
Presents various occupational topics.

**ACCT 100      Introduction to Accounting      3 credit hours**  
Provides students with information about basic accounting cycle. Additional topics such as payroll and taxes covered as time permits. Class helps students prepare for entry-level accounting-related courses. (3 theory hours + 1 lab hour a week)

**BA 100      Business Careers/Technology Awareness      3 credit hours**  
Explores various business careers and business technologies. Emphasis on developing listening, speaking and employability skills. Recommended for students interested in business studies. (3 theory hours + 1 lab hour a week)

**CP 100 Introduction to Computer Programming 3 credit hours**

*(Prerequisite: MATH 099 or equivalent)* Provides preparation for first-term Computing Technology and gives overview of computer systems. Includes flow-charting, logic, data processing concepts and programming in QBASIC. Provides preparation for entry-level programming courses. (3 theory hours + 1 lab hour a week)

**CSCI 098 Computer Basics (one-third term) 1 credit hour**

Provides opportunities to develop beginning computer skills. Includes keyboarding and mouse usage, common word processing tasks and understanding computer system components. Introduces students to computer concepts used in many Adult & Developmental Education courses. (3 theory hours + 1 lab hour a week)

**CSCI 100 Basic Keyboarding/Computer Skills 3 credit hours**

Emphasizes keyboarding as well as computer concepts and basic word processing. Course recommended for beginning keyboarding students. (3 theory hours + 1 lab hour a week)

**DRFT 100 Introduction to Drafting 3 credit hours**

Introduces concepts of drafting, including line weights, orthographic projections, dimensioning, pictorials and applied drafting skills. Free-hand sketching, geometric constructions, lettering, drafting math and occupational information are also presented. Course helps students prepare for Architectural/Engineering Drafting Technology, Construction Technology, Design Drafting Engineering Technology and related programs. (3 theory hours + 1 lab hour a week)

**ELEC 100 Introduction to Electronics for Technologies/Trades 3 credit hours**

Includes Ohm's, Kirchoff's and Power laws; circuit analysis; magnetism and generators. Additional topics such as motors, inductance and capacitance covered as time permits. Reasoning skills and applied mathematics emphasized. Course recommended for Trades majors that require principles of electricity. (3 theory hours + 1 lab hour a week)

**HLTH 100 Introduction to Health Occupations 3 credit hours**

Explores various medical careers and an introduction to medical terminology and selected body systems. Course concepts integrated with the study of anatomy, physiology and pathophysiology. (3 theory hours + 1 lab hour a week)

### Special Topics Courses

A variety of courses are offered under special topics. In Developmental Studies, some topics courses are offered regularly; others are offered only occasionally. Students should check the Schedule of Classes each term. Listed below are topics courses regularly offered.

**ENG 096 Spelling Strategies (half term) 1 credit hour**

Focuses on essential spelling skills. Includes faulty pronunciation, consonant and vowel spellings, dictionary use, proofreading and spelling rules. May be taken concurrently with other English or ESL courses. (2 theory hours)

**ENG 096A      Intensive English Grammar: Sentence Combining      1 credit hour  
(half term)**

For students who would like to add style and variety to their sentences. Opportunities to apply grammar concepts to writing. Includes sentence fragments, run-on sentences, coordination and subordination and punctuation. May be taken concurrently with other English or ESL courses. (2 theory hours)

**ENG 096B      Intensive English Grammar: Sentence Effectiveness      1 credit hour  
(half term)**

For students struggling with English grammar who would like to focus on writing effective sentences. Attention paid to sentence revision and applying grammatical principles to writing. Includes sentence coordination and subordination, punctuation, subject-verb agreement, pronoun usage and modifier usage. May be taken concurrently with other English or ESL courses. (2 theory hours)

**ESL 096      Conversations in English as a Second Language      1 credit hour  
(half term)**

For students who would like practice in reading and expressing themselves verbally in English. Focuses on identifying main and supporting ideas from reading selections and communicating those ideas in a small-group setting. Class members choose topics to explore; topics typically include American culture and customs, current events and social issues. May be taken concurrently with other ESL courses. (2 theory hours)

**SSKL 096      Individual Learning Skills (self-paced)      1 credit hour**

Through diagnostic testing and/or self-analysis students identify individual learning skills for improvement. Topics include vocabulary building, writing improvement and time management. Students complete a minimum of 1.5 hours of course work in the Writing and Reading Assistance Center (WRAC). Students must be enrolled in other courses. (1 theory hour a week)

# ARTS & SCIENCES

Arts & Sciences provides liberal arts courses to support vocational degree and certificate programs and offers the associate of arts in liberal arts degree. All courses are transferable to other degree-granting institutions as freshman and sophomore electives or requirements. All courses in Arts & Sciences have tuition charges. In addition, science, computer science and art courses have course fees.

## GENERAL HONORS PROGRAM

Offering intensive interdisciplinary study, the General Honors Program increases opportunities for liberal arts education. Taught in a small-group seminar format, Honors courses emphasize discussion, student participation and self-expression. Students interested in these courses must have completed nine hours in Arts & Sciences, have a 3.2 or higher cumulative GPA and have earned a B or better in ENG 101. For information and registration, interested students should see an advisor.

## COURSE SELECTION

Students seeking TVI associate degrees in fields other than liberal arts should consult individual programs' requirements for liberal arts courses. Course prefixes for each discipline are listed below.

Courses numbered 101 or above are considered college freshman-level work; courses numbered 200 and above are sophomore level and may require substantial reading, writing and research skills in addition to the prerequisites.

Students should follow instructions regarding prerequisites and corequisites (see page 17).

If a student wishes to audit either a lecture or laboratory, the corequisite lecture or laboratory must also be taken for audit.

Students should consult an academic advisor for help with course selection.

## LIBERAL ARTS

The associate of arts in liberal arts degree is designed to meet diverse educational interests. The degree provides the general curriculum of the first two years of baccalaureate study for transfer purposes or as an end in itself. This degree includes a general education curriculum of 35 credit hours accepted by New Mexico's colleges and universities as the general education core for degree completion.

Courses in disciplines not currently included in the Arts & Sciences curriculum and courses not offered by the Arts & Sciences Department may be accepted as transfer credit toward the degree requirements. For information about transfer work, students should contact the Advisement Office.

### ASSOCIATE OF ARTS IN LIBERAL ARTS

| Discipline                              | Course Prefix                                         | Credit Hours |
|-----------------------------------------|-------------------------------------------------------|--------------|
| <b>Communications</b>                   |                                                       |              |
| English                                 | ENG (writing): 101, 102, 119, 212, 219, 220, 221, 222 |              |
| Journalism                              | JOUR                                                  |              |
| Must include ENG 102                    |                                                       | 6            |
| Communication Studies                   | COMM 221 or 130                                       | 3            |
| <b>Computer Science</b>                 |                                                       |              |
|                                         | CSCI 101                                              | 3-4          |
| <b>Social and Behavioral Sciences</b>   |                                                       |              |
| Anthropology                            | ANTH                                                  |              |
| Economics                               | ECON                                                  |              |
| Geography                               | GEOG                                                  |              |
| Political Science                       | PSCI                                                  |              |
| Psychology                              | PSY                                                   |              |
| Sociology                               | SOC                                                   |              |
| Must include at least two disciplines   |                                                       | 9            |
| <b>Biological and Physical Sciences</b> |                                                       |              |
| Astronomy                               | ASTR                                                  |              |
| Biology                                 | BIO                                                   |              |
| Chemistry                               | CHEM                                                  |              |
| Physics                                 | PHYS                                                  |              |
| Must include one lab course             |                                                       | 7-8          |
| <b>Humanities</b>                       |                                                       |              |
| Cultural Studies                        | CST                                                   |              |
| History                                 | HIST                                                  |              |
| Humanities                              | HUM                                                   |              |

|                                                                                                                                |                  |           |
|--------------------------------------------------------------------------------------------------------------------------------|------------------|-----------|
| Literature                                                                                                                     | ENG (literature) |           |
| Philosophy                                                                                                                     | PHIL             |           |
| Religious Studies                                                                                                              | RLGN             |           |
| Must include at least two disciplines . . . . .                                                                                |                  | 9         |
| <b>Mathematics</b>                                                                                                             | <b>MATH</b>      |           |
| One course numbered above 120 (except MATH 215) . . . . .                                                                      |                  | 3         |
| <b>Fine Arts and Foreign Languages</b>                                                                                         |                  |           |
| Art                                                                                                                            | ART              |           |
| Music                                                                                                                          | MUS              |           |
| French                                                                                                                         | FREN             |           |
| Spanish                                                                                                                        | SPAN             |           |
| Theater                                                                                                                        | THEA             |           |
| Must include at least two disciplines<br>(No more than three credit hours of applied or studio art allowed) . . . . .          |                  | 9         |
| <b>Electives</b>                                                                                                               |                  |           |
| Any Arts & Sciences course, including General Honors<br>(No more than one credit hour of physical education allowed) . . . . . |                  | 13-15     |
| <b>Total</b> . . . . .                                                                                                         |                  | <b>64</b> |

**ANTH 110 Language, Culture and the Human Animal 3 credit hours**  
*(Prerequisite: RDG 100)* Introduction to linguistics and anthropology. Study of the systematic nature of language: phonology, morphology, syntax, semantics and pragmatics.

**ANTH 120 Archaeology: Discovering Our Past 3 credit hours**  
*(Prerequisite: RDG 100)* Overview of archaeological theory and methods including data from archaeological sites in various geographical areas and different time periods.

**ANTH 130 Cultures of the World 3 credit hours**  
*(Prerequisite: RDG 100)* Basic concepts of cultural anthropology. Survey of cultural characteristics of a variety of existing cultures in their native environments with societal examples in cross-cultural comparisons.

**ANTH 150 Evolutionary Anthropology 3 credit hours**  
*(Prerequisite: RDG 100)* Introduction to biological anthropology and concepts of organic evolution. Emphasis on fossil history of primates, prehistory of man and human genetics within a paleoecological context, modern primate behavior and its relevance to human evolution.

**ANTH 222 Ancient Mesoamerica 3 credit hours**  
*(Prerequisite: RDG 100)* Mesoamerican archaeology traced from the earliest inhabitants

through the Aztec period. Emphasis on cultural processes and dynamics of cultural evolution.

**ANTH 231 North American Indians 3 credit hours**  
*(Prerequisite: RDG 100)* Comparative ethnology of North American Indian tribes on geographic, ecologic and cultural bases. Exploration of lives of North American Indians before European influence and the diversity of cultures on the North American continent.

**ANTH 238 Cultures of the Southwest 3 credit hours**  
*(Prerequisite: RDG 100)* Basic concepts related to cultural patterns of the American Southwest from A.D. 1600 to the present. Interactions of the ethnic groups that populate the Southwest.

**ANTH 255 Southwestern Anthropology 3 credit hours**  
*(Prerequisite: RDG 100)* Interpretations and dynamics of southwestern archaeology from the time of the earliest inhabitants until European contact.

**ANTH 296 Topics in Anthropology 1-3 credit hours**  
*(Prerequisite: RDG 100)* Various topics. See Schedule of Classes.

**ART 101 Introduction to Art 3 credit hours**  
Fundamental concepts of visual arts: the language of form and media of artistic expression. Possible museum exhibition attendance.

**ART 106 Drawing I 3 credit hours**  
*(Recommended: ART 101)* Exploring basic drawing concepts with dry and wet media: still life, landscape, portraiture or the figure. Course fee: \$20.

**ART 121 Two-Dimensional Design 3 credit hours**  
*(Recommended: ART 101)* Visual awareness through direct experience with visual form: elements of line, shape, value, texture, color theory, space and volume, painting principles and visual vocabulary. Course fee: \$20.

**ART 122 Three-Dimensional Design 3 credit hours**  
*(Recommended: ART 101 and ART 106)* Concepts, techniques, processes and vocabulary involved in working in the third dimension. A variety of media and issues of space, form, mass and volume, line, texture, scale, proportion and the making of objects and spatial contexts. Course fee: \$20.

**ART 151 Art of the American Southwest 3 credit hours**  
Interrelationships of three southwestern cultures emphasizing major forms of expression in pottery, textiles, jewelry, architecture, painting and photography.

**ART 201 History of Art I 3 credit hours**  
Survey of Near Eastern, Egyptian, Greek, Roman, early Christian, Byzantine, early Medi-

eval, Romanesque and Gothic art and architecture. *Fall, summer only.*

**ART 202 History of Art II 3 credit hours**

Survey of Italian and Northern Renaissance, Baroque, Rococo and 19th-century Western European painting, sculpture and architecture. *Spring, summer only.*

**ART 250 Modern Art 3 credit hours**

Major figures, movements and stylistic developments in western art from 1850 to the present.

**ART 260 Architectural History: Ancient through Modern 3 credit hours**

Survey of the history of Western architecture from the pyramid to the post-modernist house; technological, stylistic and functional characteristics of monuments within their cultural contexts.

**ASTR 101 Introduction to Astronomy I 3 credit hours**

*(Prerequisite: RDG 100. Recommended: MATH 100B)* Descriptive and historical introduction to the science of astronomy focusing on the solar system including the sun, planets, comets and meteors.

**ASTR 102 Introduction to Astronomy II 3 credit hours**

*(Prerequisites: RDG 100 and MATH 100B)* Exploration of life cycles of stars and stellar systems and the structure of the universe. Study of the births, lives and deaths of stars, the nature of the Milky Way galaxy and current concepts on cosmology and the large-scale structure of the universe.

**ASTR 111L Astronomy Laboratory 1 credit hour**

*(Pre- or corequisite: ASTR 102)* Optional lab for investigation of the principles discussed in ASTR 102. Course fee: \$20.

**ASTR 296 Topics in Astronomy 1-3 credit hours**

*(Prerequisite: RDG 100)* Various topics. See Schedule of Classes.

**BIO 110 Biology for Non-Majors 3 credit hours**

*(Prerequisite: RDG 100)* Biological principles and current topics for non-biologists or liberal arts students: cellular and molecular biology, microbiology, human genetics, ecology, complexity theory and animal behavior.

**BIO 111 Environmental Science 3 credit hours**

*(Prerequisite: RDG 100)* Study of the environment, including basic ecology, a comparison of scientific approaches and world views with respect to ecology and the environment, relationship of humans to the environment and solutions to local, regional and global environmental problems.

- BIO 111L Environmental Science Laboratory 1 credit hours**  
*(Prerequisite: RDG 100)* Optional lab for investigation of the principles discussed in BIO 111; analysis of water, soil and air pollutants. Moderately strenuous field trips to special interest sites may be scheduled outside lab hours. Course fee: \$20.
- BIO 112L Biology for Non-Majors Laboratory 1 credit hour**  
*(Prerequisite: RDG 100. Pre- or corequisite: BIO 110)* Optional lab which includes use of microscopes, culturing bacteria, chemical analysis of biomolecules, plant and animal behavior. Course fee: \$20.
- BIO 121/121L Principles of Biology I 4 credit hours**  
*(Prerequisite: RDG 100. Recommended: MATH 100B and CHEM 111)* Basic principles of biology for students wishing to pursue majors in the sciences. Cellular level processes including biological chemistry, cell metabolism, photosynthesis, control and transmission of hereditary materials and nucleic acid structure and function. Emphasis on critical thinking skills and scientific methodology. Required enrollment in 3-hour lecture and 3-hour lab. Course fee: \$20.
- BIO 122/122L Principles of Biology II 4 credit hours**  
*(Prerequisite: BIO 121/121L)* Continuation of concepts developed in BIO 121/121L. Organism-level processes: taxonomy, comparative anatomy and physiology of plants and animals with emphases on evolutionary trends, embryology, behavior and ecology and the development of scientific reasoning with an evolutionary perspective. Required enrollment in a 3-hour lecture and a 3-hour lab. Course fee: \$20.
- BIO 123 Biology for Health Sciences 3 credit hours**  
*(Prerequisite: RDG 100. Recommended: MATH 100B and either CHEM 111, BIO 100 or SCIE 100)* Principles of cell biology, cell chemistry, genetics and organismic biology with an emphasis on human systems.
- BIO 124L Biology for Health Sciences Laboratory 1 credit hour**  
*(Pre- or corequisite: BIO 123)* Exercises and demonstrations related to cell biology, biochemical processes and genetics.
- BIO 136 Human Anatomy and Physiology for Non-Majors 3 credit hours**  
*(Prerequisite: RDG 100. Recommended: BIO 100 or CHEM 100)* Examination of the structure (anatomy) and function (physiology) of the human body. Investigating molecular, cellular, tissue and organ levels and study of organ systems.
- BIO 139L Human Anatomy/Physiology for Non-Majors Lab 1 credit hour**  
*(Pre- or corequisite: BIO 136)* Lab exercises which complement concepts presented in BIO 136, including histological study, biochemical processes, mammal organ dissections and use of models to illustrate anatomical arrangement. Course fee: \$20.

- BIO 219 Principles of Cell Biology 3 credit hours**  
*(Prerequisites: BIO 121/121L and 122/122L and either CHEM 111/112L or 121/121L)* Cell structure and cellular processes, including structure and function of membranes, the cytoskeleton, the nucleus, DNA replication, gene expression, energy usage and production, metabolism, cell receptors, intercellular communication and cancer biology. *Fall only.*
- BIO 221 Introductory Genetics 3 credit hours**  
*(Prerequisite: BIO 123/124L or 121/121L or permission of instructor Corequisite: BIO 222)* Structure, function and transmission of hereditary factors. *Fall, spring only.*
- BIO 222 Introductory Genetics Problems 1 credit hour**  
*(Corequisite: BIO 221)* Recitation and problem-solving techniques in genetic analysis related to BIO 221. *CR/NC only. Fall, spring only.*
- BIO 223L Introductory Genetics Laboratory 1 credit hour**  
*(Pre- or corequisites: BIO 221 and 222)* Lab exercises using fruit flies and lower organisms to illustrate the principles introduced in BIO 221. Course fee: \$20. *Fall, spring only.*
- BIO 224/224L Southwestern Natural History 4 credit hours**  
*(Prerequisite: RDG 100)* Lecture and labs or field trips (one or more overnight) presenting the natural history and identification of southwestern flora and fauna. Required enrollment in a 3-hour lecture and a 3-hour lab. Course fee: \$20. *Summer; fall only.*
- BIO 237 Human Anatomy and Physiology I 3 credit hours**  
*(Prerequisites: Either BIO 123/124L or 121/121L and either CHEM 111/112L or 121/121L)* Integrated study of human structure and function that covers the integumentary, skeletal, muscular and nervous systems.
- BIO 238 Human Anatomy and Physiology II 3 credit hours**  
*(Prerequisite: BIO 237)* Continuation of BIO 237, covering structure and function of the cardiovascular, respiratory, digestive, urinary, reproductive and endocrine systems.
- BIO 239 Microbiology 3 credit hours**  
*(Prerequisites: Either BIO 123/124L or BIO 121/121L and either CHEM 111/112L or 121/121L. Corequisite: BIO 239L)* Concepts of microbiology, host-parasite relationships, infection and immunity.
- BIO 239L Microbiology Laboratory 1 credit hour**  
*(Prerequisites: BIO 115L taken prior to summer 1993 or either BIO 123/124L or 121/121L and either CHEM 111/112L or 121/121L. Corequisite: BIO 239)* Investigation of a variety of techniques designed to facilitate the growth, identification and control of microorganisms. Course fee: \$20.
- BIO 247L Human Anatomy and Physiology I Laboratory 1 credit hour**  
*(Prerequisites: Either BIO 123/124L or 121/121L and either CHEM 111/112L or 121/121L.*

*Pre- or corequisite: BIO 237*) Lab exercises in anatomy and physiology which complement topics covered in BIO 237, including specimen dissection and cadaver study. Course fee: \$20.

**BIO 248L Human Anatomy and Physiology II Laboratory 1 credit hour**  
(*Prerequisites: Either BIO 123/124L or 121/121L and either CHEM 111/112L or 121/121L. Pre- or corequisite: BIO 238*) Lab exercises in anatomy and physiology which complement BIO 238, including specimen dissection and cadaver study. Course fee: \$20.

**BIO 260/260L Botany 4 credit hours**  
(*Prerequisite: BIO 122/122L*) Introduction to the diversity of the plant kingdom: Algae, Bryophyta, Pterophyta, Gymnosperms and Angiosperms; covering plant morphology, anatomy, sexual and asexual reproduction. Required enrollment in a 3-hour lecture and a 3-hour lab. Course fee: \$20.

**BIO 282 Parasites of the Southwest 3 credit hours**  
(*Prerequisites: RDG 100 and one previous college-level course in biology*) Basic animal parasitology focusing on organisms likely to be encountered by health workers in the southwestern United States.

**BIO 290 Biology of HIV 3 credit hours**  
(*Prerequisites: RDG 100 and one previous college-level course in biology*) Focus on HIV, the causative agent of AIDS, history and origin of the virus, basic immunology, epidemiology and viral biology; in-depth study of the AIDS virus, biological social ramifications of AIDS epidemic. *Spring only.*

**BIO 296 Topics in Biology 1-3 credit hours**  
(*Prerequisite: RDG 100*) Various topics. See Schedule of Classes.

**CHEM 101 Concepts of Chemistry 3 credit hours**  
(*Prerequisite: ENG 100 or RDG 100*) Non-mathematical introduction to chemistry as it applies to the world, covering qualitative treatment of chemical and physical properties of matter and topics of special interest. Not a preparatory class for other chemistry classes.

**CHEM 111 Introduction to Chemistry 3 credit hours**  
(*Prerequisites: RDG 100 and MATH 100A*) Qualitative and quantitative aspects of general chemistry: atomic and molecular structure, periodic table, acids and bases, mass relationships, solutions and brief introduction to organic chemistry.

**CHEM 112L Introduction to Chemistry Laboratory 1 credit hour**  
(*Pre- or corequisite: CHEM 111*) Three-hour lab. Experiments complementing CHEM 111. Course fee: \$20.

**CHEM 121/121L General Chemistry I 4 credit hours**  
(*Prerequisites: RDG 100 and MATH 120*) First term of a two-term sequence for students in

sciences, engineering or pre-med. Atomic and molecular structure, chemical periodicity, mass and energy relationships and chemical reactions. Required enrollment in a 3-hour lecture and a 3-hour lab. Course fee: \$20.

**CHEM 122/122L General Chemistry II 4 credit hours**  
(Prerequisites: CHEM 121/121L within past three years and MATH 121) Acids and bases, equilibrium, kinetics, thermodynamics, solubility, electro- and nuclear chemistry. Introduction to coordination and organic chemistry. Required enrollment in a 3-hour lecture and a 3-hour lab. Course fee: \$20.

**CHEM 212 Organic Chemistry and Biochemistry 4 credit hours**  
(Prerequisite: CHEM 111/112L or 121/121L) Introduction to organic and biochemistry for students in health or environmental occupations; survey of organic functional groups including chemistry of living organisms. Emphasis on medical aspects.

**CHEM 253L Quantitative Analysis 5 credit hours**  
(Prerequisite: CHEM 122L) Theory and techniques of volumetric and gravimetric analysis. Two one-hour lectures and six-hour lab. *Spring only.*

**CHEM 296 Topics in Chemistry 1-3 credit hours**  
(Prerequisite: RDG 100) Various topics. See Schedule of Classes.

**COMM 110 Mass Media and Society 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101) Examination of the roles media have in American society and their effects on other forms of communication.

**COMM 130 Public Speaking 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101) A blend of theory and practical application. Focus on organizing and delivering, listening and responding to various types of presentations.

**COMM 221 Interpersonal Communication Studies 3 credit hours**  
(Prerequisite: RDG 100. Pre- or corequisite: ENG 101) Overview of perception, emotions, nonverbal communication, language, listening, defensiveness and relational conflict. Emphasis on developing communication styles and skills to enhance effectiveness in professional and personal relationships.

**COMM 223 Introduction to Nonverbal Communication Studies 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101) Examination of how the face and eyes, gestures, touch, voice, physical appearance, space, time and environment communicate in personal and professional interactions.

**COMM 225 Small-Group Communication Studies 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101) Examination of group types, characteristics, dynamics, conflicts, norms, roles, leadership, problem solving and decision making

in small group processes.

**COMM 232 Business and Professional Communication Studies 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101) Emphasis on developing, organizing and supporting ideas in interpersonal business encounters, groups, teams, meetings, interviews and platform presentations.

**COMM 240: Organizational Communication Studies 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101) Communication networks, power and authority, manager/employee relationships, leadership and interviewing in organizational contexts.

**COMM 270 Communication Studies for Teachers 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101) Systems approach to classroom communication at any level, providing a means to analyze, develop and facilitate effective communication.

**COMM 289 Listening 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101 and COMM 221) Investigation and application of current research in listening theory. Analysis of the appropriateness and applicability of five major types of listening in academic, business, media and interpersonal contexts.

**COMM 290 Gender Communication Studies 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101 and COMM 221) Focus on communication differences between men and women; implications and consequences of these differences and discussion of various strategies for change in business, media, educational and intimate contexts.

**COMM 291 Intercultural Communication Studies 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101 and COMM 221) Focus on culture and the differences in communication values and styles, both verbal and nonverbal. Analysis of intercultural encounters and development of skills for more effective intercultural communication.

**COMM 292 Family Communication Studies 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101 and COMM 221) Examination of family systems theory, communication patterns, rules, roles, themes, power, intimacy, ethnicity and conflict in families.

**COMM 293 Topics in Communication Studies 3 credit hours**  
(Prerequisite: RDG 100. Recommended: ENG 101 and COMM 221) Various topics. See Schedule of Classes.

**CSCI 101      Computer Literacy      4 credit hours**

Fundamental computer literacy which introduces computer hardware and software topics with a mixture of lecture and hands-on instruction: common user applications (word processing, spreadsheets, data bases), operating systems (Windows 3.1, Windows 95) and the basics of using networked computers (e-mail and the Web). Typing proficiency useful but not required. Course fee: \$10.

**CSCI 155      Introduction to Computer Programming      4 credit hours**

*(Prerequisite: MATH 121 with a grade of B or better, MATH 150)* Introduction to programming designed for those interested in programming as a career or as a useful problem-solving skill; the relationship between programming and problem solving, using programs written in C and C++. Course fee: \$10.

**CSCI 163      Intermediate Computer Literacy      3 credit hours**

*(Prerequisite: CSCI 101 or permission of instructor)* Creating graphics and Web documents; research using the Internet. Course fee: \$10.

**CSCI 296      Topics in Computer Science      1-3 credit hours**

Various topics. See Schedule of Classes.

**CST 150      Introduction to Cultural Studies      3 credit hours**

*(Prerequisite: RDG 100)* Survey of a range of contemporary topics in global perspective, including gender, race, class and ethnicity. Exploration of non-dominant cultures and non-traditional social issues.

**CST 250 A, H, N, S      Ethnic Studies      3 credit hours**

*(Prerequisite: RDG 100)* Investigation of present-day perspectives and historical and social conditions which have shaped and affected the lives of a specific group of American people. Emphasis on how these groups create mosaic of philosophy, art and identity. A: African American Studies; H: Chicano Studies; N: Native American Studies; S: Asian American Studies.

**CST 296      Topics in Cultural Studies      1-3 credit hours**

*(Prerequisite: RDG 100)* Various topics. See Schedule of Classes.

**ECON 101      Introduction to Economics      3 credit hours**

*(Prerequisite: RDG 100)* Broad survey of the theories, history and relationships of economics.

**ECON 200      Macroeconomics      3 credit hours**

*(Prerequisite: RDG 100)* Theories and problems of economic policy, including the contrast of the Classical and Keynesian models, money and banking, inflation, unemployment and economic growth.

- ECON 201      Microeconomics      3 credit hours**  
*(Prerequisite: RDG 100)* Laws of demand and supply and the workings of the price systems in a free market. Basic economic theory applied to problems of production, monopoly, taxation, consumer welfare and the environment.
- ECON 296      Topics in Economics      1-3 credit hours**  
*(Prerequisite: RDG 100)* Various topics. See Schedule of Classes.
- ENG 101      College Writing      3 credit hours**  
*(Prerequisites: ENG 100 or equivalent, Recommended: RDG 100)* Text-based essay composition, including critical reading, summary writing and synthesis.
- ENG 102      Analytic and Argumentative Writing      3 credit hours**  
*(Prerequisite: ENG 101)* Analytic and argumentative writing with readings and research in exposition and literature.
- ENG 119      Technical Communications      3 credit hours**  
*(Prerequisite: ENG 101)* Introductory study of written and verbal communication in business and industry.
- ENG 150      Study of Literature      3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Introduction to the study of literature. *Fall only*
- ENG 206 D, F, S, W      Popular Literature      3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Analysis of a popular literary form. S: Espionage Fiction; D: Detective Novel; F: Science Fiction; W: Western.
- ENG 210      Film as Literature      3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Study of film as visual literature, surveying major trends in the history of film.
- ENG 211      Topics in Literature      3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Various topics.
- ENG 212      Topics in Language and Writing      3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Various topics. See Schedule of Classes.
- ENG 213 D, F, W      Film Genres      3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Survey of film genre or national cinema. F: Film Noir; W: Western; D: Comedy.
- ENG 219      Technical Writing      3 credit hours**  
*(Prerequisite: ENG 102)* Writing in industry, research laboratories, business and other professional settings.

- ENG 220 Expository Writing 3 credit hours**  
*(Prerequisite: ENG 102)* Advanced composition, concentrating on critical reading of prose, writing expository and argumentative essays. *Fall only.*
- ENG 221 Creative Writing: Fiction 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Fiction writing as a creative process.
- ENG 222 Creative Writing: Poetry 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Poetry writing as a creative process.
- ENG 240 Traditional Grammar 3 credit hours**  
 Survey of traditional grammar, introducing linguistic terminology and methods for identifying and understanding parts of speech, parts of sentences and basic sentence patterns.
- ENG 250 Analysis of Literature 3 credit hours**  
*(Prerequisite: ENG 102 or equivalent)* Methods of literary analysis and critical writing applied to literary techniques, conventions and themes. *Spring only.*
- ENG 251 Introduction to Dramatic Literature 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Introduction to structure and nature of drama as a literary form: Greek, Renaissance, Enlightenment and Modern. *Spring only.*
- ENG 252 Introduction to Shakespeare 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Study of Shakespeare's work: sonnets, tragedies, comedies and histories. *Fall only.*
- ENG 262 Survey of Earlier World Literature 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Poetry, fiction and drama from primarily non-English cultures: ca. 1500 B.C. to A.D. 1650 *Fall only.*
- ENG 263 Survey of Later World Literature 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Poetry, fiction and drama from primarily non-English cultures: ca. 1650 to present. *Spring only.*
- ENG 270 Modern Literature 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* American and European literature of the 20th century.
- ENG 282 Modern Latin American Literature 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Chronicles, diaries, drama, poetry, essays and fiction of Latin America.
- ENG 294 Survey of Earlier English Literature 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* British literature from Old English to 1798. *Fall only.*

- ENG 295 Survey of Later English Literature 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* English literature from the late 18th century to the present. *Spring only.*
- ENG 296 American Literature 3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Short stories, poetry, drama and non-fiction from colonial U.S. to the present.
- FREN 101 Beginning French I 4 credit hours**  
 Beginning course to develop French language skills--emphasizing listening, comprehension and speaking.
- FREN 102 Beginning French II 4 credit hours**  
*(Prerequisite: FREN 101 or permission of instructor)* Further development of FREN 101 skills.
- FREN 201 Intermediate French 3 credit hours**  
*(Prerequisite: FREN 102 or permission of instructor)* Enhancement of skills from FREN 102 and further knowledge of the language and culture of France.
- FREN 202 Intermediate French II 3 credit hours**  
*(Prerequisite: FREN 201 or permission of instructor)* Continuation of FREN 201.
- FREN 296 Topics in French 1-4 credit hours**  
*(Prerequisite: varies)* Various topics. See Schedule of Classes.
- GEOG 101 Physical Geography 3 credit hours**  
*(Prerequisite: RDG 100)* Introduction to the geography of the natural environment: weather systems, climate regions, vegetation, soils, water resources, plate tectonics and volcanic, structural, erosional, fluvial, coastal, desert and glacial landforms.
- GEOG 102 Human Geography 3 credit hours**  
*(Prerequisite: RDG 100)* Introduction to the cultural landscape: population, migration, languages, religions, folk customs, political units, economic development, agriculture, industry, urbanization and systematic analysis of global environmental issues.
- GEOG 201 World Regional Geography 3 credit hours**  
*(Prerequisite: RDG 100)* Global geography with emphasis on regional characteristics, similarities and differences; landforms, climates, history, cultures and current economic and political problems.
- GEOG 296 Topics in Geography 1-3 credit hours**  
*(Prerequisite: RDG 100)* Various topics. See Schedule of Classes.

- GNHN 121A General Honors: The Ancient Legacy** **3 credit hours**  
*(Prerequisites: See page 51 and permission of instructor)* Analysis of classic texts of the Greek, Hebrew, Roman and Christian traditions; ideas about virtue, knowledge, politics, religious faith and education. *Fall only.*
- GNHN 121M General Honors: The Modern Legacy** **3 credit hours**  
*(Prerequisites: See page 51 and permission of instructor)* Analysis of classic texts of Western culture from the Renaissance through the early 20th century; ideas about the individual, society, state, history, nature, progress and religion. *Spring only.*
- GNHN 221 Topics in General Honors** **1-3 credit hours**  
*(Prerequisites: See page 51 and permission of instructor)* Various topics. See Schedule of Classes.
- HIST 101 Western Civilization I** **3 credit hours**  
*(Prerequisite: RDG 100. Recommended: ENG 101)* Events, personalities, issues, rises and falls, covering ancient times through 1648.
- HIST 102 Western Civilization II** **3 credit hours**  
*(Prerequisite: RDG 100. Recommended: ENG 101)* Exploration of such topics 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 credit hours**  
*(Prerequisite: RDG 100. Recommended: ENG 101)* Survey of economic, political, intellectual and social development of the U.S. from 1492 to 1877.
- HIST 162 History of the United States II** **3 credit hours**  
*(Prerequisite: RDG 100. Recommended: ENG 101)* Continuation of HIST 161, covering 1865 to the present.
- HIST 230 Twentieth-Century Russia** **3 credit hours**  
*(Prerequisite: RDG 100. Recommended: ENG 101)* Survey of Russian History from czarist absolutism through communist totalitarianism to the tentative introduction of a pluralist society.
- HIST 240 Vietnam: War, Politics and Culture** **3 credit hours**  
*(Prerequisite: RDG 100. Recommended: ENG 101)* Causes of the war, military and political aspects, conduct and consequences of years of conflict in Vietnam; issues surrounding U.S. involvement in Vietnam and changes in the culture, institutions and political thought of the U.S. during and after the war.
- HIST 260 History of New Mexico** **3 credit hours**  
*(Prerequisite: RDG 100. Recommended: ENG 101)* New Mexico's history from 1500 to the present; contributions of and interactions among Native Americans, Hispanics, Anglos and others.

- HIST 270      The American West      3 credit hours**  
*(Prerequisite: RDG 100. Recommended: ENG 101)* American settlement west of the Mississippi River: exploration, fur trade, overland trails, ranching, mining, contacts with Native Americans, frontier violence and environmental issues.
- HIST 282      Modern Latin American History      3 credit hours**  
*(Prerequisite: RDG 100. Recommended: ENG 101)* Latin American history from the beginning of the revolutionary period in 1810 to the present.
- HIST 296      Topics in History      1-3 credit hours**  
*(Prerequisite: RDG 100. Recommended: ENG 101)* Various topics. See Schedule of Classes.
- HUM 111      Early World Civilizations      3 credit hours**  
*(Prerequisite: RDG 100)* History, art, literature, religion and ideas of early world civilizations: Egypt, Mesopotamia, India, China, Greece, Rome, Europe, Africa and pre-Columbian America.
- HUM 121      Modern World Civilizations      3 credit hours**  
*(Prerequisite: RDG 100)* Continuation of HUM 111. History, art, literature, music and ideas of world civilizations from the Renaissance to present.
- HUM 247      Topics in Humanities      1-3 credit hours**  
*(Prerequisite: RDG 100)* Various topics. See Schedule of Classes.
- JOUR 151      Writing for the Media I      3 credit hours**  
*(Prerequisite: ENG 101 or permission of instructor)* Practical introduction to journalism emphasizing journalistic conventions, gathering, writing news for print and broadcast media.
- JOUR 251      Writing for the Media II      3 credit hours**  
*(Prerequisite: JOUR 151 or permission of instructor)* Advanced study in journalistic conventions, gathering and writing news for print and broadcast media, including a variety of types of stories and legal and ethical topics.
- JOUR 253      Writing and Editing for the Media      1-3 credit hours**  
*(Pre- or corequisite: JOUR 151)* Reviews and critiques of journalistic efforts and techniques for improving and strengthening writing style. Open to anyone but targeted for students working in the mass media.
- MATH 111      Mathematics for Elementary and Middle School Teachers I      3 credit hours**  
*(Prerequisite: MATH 100A)* Introduction to the intuitive and logical background of arithmetic, sets, arithmetic algorithms, bases, integer properties, number theory and problem solving.

**MATH 112 Mathematics for Elementary and Middle School Teachers II 3 credit hours**

*(Prerequisite: MATH 111)* Continuation of MATH 111. Properties of rational and irrational numbers, real numbers as fractions and decimals, intuitive geometry and measurement.

**MATH 119 Methods of Problem Solving 4 credit hours**

*(Prerequisite: MATH 100A)* Strategies for solving mathematical problems relying heavily on data patterns; sequences, set theory, combinatorics, probability, descriptive statistics, linear and quadratic modeling.

**MATH 120 Intermediate Algebra 4 credit hours**

*(Prerequisite: MATH 100B)* Linear equations and inequalities, polynomials, exponents, rational expressions and equations, radical expressions and equations, quadratic equations; introduction to graphing and functions.

**MATH 121 College Algebra 3 credit hours**

*(Prerequisite: MATH 120)* Focus on functions and their graphs; investigation of linear, quadratic, polynomial, rational, exponential and logarithmic functions.

**MATH 123 Trigonometry 3 credit hours**

*(Prerequisite: MATH 121 or 150)* Use of graphing calculators to study trigonometric and inverse trigonometric functions; radian and degree measure, basic trigonometric identities, polar coordinates, solving triangles and other applications.

**MATH 129 The Art of Mathematics 3 credit hours**

*(Prerequisite: MATH 119 or 120)* Illustration of the creative nature of mathematics through problems, readings, discussions of topics such as set theory, logic, number theory, basic geometry and probability.

**MATH 145 Introduction to Probability and Statistics 3 credit hours**

*(Prerequisite: MATH 119 or 120)* Introduction to basic concepts in probability and statistics-simple data analysis and descriptive statistics, probability and probability models, sampling and statistical inference-with applications from varied fields.

**MATH 150 Advanced Algebra 4 credit hours**

*(Prerequisite: MATH 121)* Exploration of polynomial, rational, exponential and logarithmic functions using graphing calculators.

**MATH 162 Calculus I 4 credit hours**

*(Prerequisites: MATH 123 and 150)* Introduction to derivatives and definite integrals using graphing calculators: differentiation, antidifferentiation, limits, extrema, curve sketching and applications.

**MATH 163      Calculus II      4 credit hours**

*(Prerequisite: MATH 162)* Continuation of MATH 162. Use of graphing calculators to cover integration techniques, numerical integration, improper integrals, some differential equations, series and applications.

**MATH 180      Elements of Calculus I      3 credit hours**

*(Prerequisite: MATH 121 or 150)* Use of graphing calculators to study limits, derivatives, applications to graphing, extrema, antiderivatives, definite integrals. Emphasis on business and biological applications.

**MATH 181      Elements of Calculus II      3 credit hours**

*(Prerequisite: MATH 180)* Continuation of MATH 180. Substitution, integration by parts, numerical integration; introduction to multivariate calculus and some differential equations.

**MATH 215      Mathematics for Elementary and Middle  
School Teachers III      3 credit hours**

*(Prerequisite: MATH 112)* Continuation of MATH 112. Topics from later elementary and middle school curricula: probability, descriptive statistics, algebra, coordinate geometry, logic and LOGO software.

**MATH 245      Fundamentals of Probability and Statistics      3 credit hours**

*(Prerequisite: MATH 180)* Basic ideas in probability and statistics: descriptive statistics, sample spaces, random variables, probability densities, expectation, variance, confidence intervals, hypothesis testing, correlation, simple regression analysis. Emphasis on business applications.

**MATH 264      Calculus III      4 credit hours**

*(Prerequisite: MATH 163)* Continuation of MATH 163. Multivariate and vector calculus: level curves and surfaces, partial derivatives, gradients, tangent planes, directional derivatives, multiple integrals, cylindrical and spherical coordinates, applications.

**MATH 296      Topics in Mathematics      1-3 credit hours**

*(Prerequisite: varies)* Various topics. See Schedule of Classes.

**MUS 103      Fundamentals of Music      4 credit hours**

*(Recommended: Experience with voice or instrument)* Beginning course in fundamentals of music: notation, scales, key signatures and intervals. Introduction to aural comprehension through singing intervals, scales, triads, dictating simple rhythmic and melodic patterns.

**MUS 139      Music Appreciation I      3 credit hours**

Basic musical elements and their development from early Greece to the Classical period. Nontechnical; required attendance at live musical performances.

**MUS 140 Music Appreciation II 3 credit hours**

Study of symphonic music, chamber music and vocal literature from the Romantic period to the 20th century. Nontechnical; required attendance at live musical performances.

**MUS 296 Topics in Music 1-3 credit hours**

Various topics. See Schedule of Classes.

**NUTR 120 Personal and Practical Nutrition 3 credit hours**

Personal, practical view of topics in nutrition of concern to the consumer; individual nutrient needs, fitness, disease prevention and weight control. Emphasis on changes of nutritional needs through the life cycle.

**NUTR 244 Human Nutrition 3 credit hours**

*(Prerequisite: Any one of the following: CHEM 111/112L or 121/121L; BIO 121/121L or 123/124L)* Nutrition as it affects normal body function and total health. Designed for health majors who will use this information in various professions.

**NUTR 293 Topics in Nutrition 1-3 credit hours**

Various topics. See Schedule of Classes.

**PHIL 110 Introduction to Philosophical Thought 3 credit hours**

*(Prerequisite: RDG 100. Recommended: ENG 101)* Survey of the philosophical issues addressed by great thinkers of the western tradition. Questions about knowledge, reality, goodness, the idea of God, government and society and the self.

**PHIL 156 Logic and Critical Thinking 3 credit hours**

*(Prerequisite: RDG 100)* Introduction to the tools of reason helpful in everyday decision-making, skills for argument analyses and effective communication of ideas. Survey of informal fallacies and formal deductive systems.

**PHIL 241 Topics in Philosophy 1-3 credit hours**

*(Prerequisite: RDG 100)* Various topics. See Schedule of Classes.

**PHIL 245 B, M, T Ethics 3 credit hours**

*(Prerequisite: RDG 100)* Discussion of ethical problems that may arise in specific fields. B: Business; M: Biomedical; T: Technology.

**PHIL 250 Philosophy of Education 3 credit hours**

*(Prerequisite: RDG 100)* Critical examination of classical and contemporary educational theories and philosophical movements in education. Emphasis on the relationship of philosophical theory and educational practice.

**PHIL 257 Formal Logic 3 credit hours**

*(Prerequisite: RDG 100)* Introduction to formal deductive logic: propositional logic, truth tables, argument forms and fallacies, predicate (symbolic) logic and method of proof.

- PHYS 102 Introduction to Physics 3 credit hours**  
*(Prerequisite: RDG 100. Recommended: MATH 100B)* Survey of basic concepts and phenomena of physics.
- PHYS 151 Physics I 4 credit hours**  
*(Prerequisites: RDG 100 and MATH 121, 150 or 180. Corequisite: PHYS 153L. Recommended: Working knowledge of trigonometry)* Non-calculus treatment of mechanics, sound and heat. Satisfies premedical, pre dental, preoptometry and certain Technologies requirements.
- PHYS 152 Physics II 4 credit hours**  
*(Prerequisites: RDG 100 and PHYS 151. Corequisite: PHYS 154L)* Non-calculus treatment of electricity, magnetism and optics.
- PHYS 153L Physics in Laboratory 1 credit hour**  
*(Prerequisite: RDG 100. Corequisite: PHYS 151)* Real-time experiments in mechanics, heat and sound. Computer data collection and analysis. Course fee: \$20
- PHYS 154L Physics II Laboratory 1 credit hour**  
*(Prerequisite: RDG 100. Corequisite: PHYS 152)* Experiments in electricity, magnetism and optics. Some computer simulations and data collection. Course fee: \$20
- PHYS 160 General Physics I 4 credit hours**  
*(Prerequisite: RDG 100. Pre- or corequisite: MATH 162. Recommended: Coenrollment in PHYS 163L and PHYS 167)* Calculus-based study of mechanics and sound waves for science and engineering students.
- PHYS 161 General Physics II 4 credit hours**  
*(Prerequisite: PHYS 160. Pre- or corequisite: MATH 163)* Calculus-based treatment of heat, electricity and magnetism for science and engineering students.
- PHYS 163L General Physics Laboratory 1 credit hour**  
*(Pre- or corequisite: PHYS 160)* Real-time experiments in mechanics and waves. Computer data collection and analysis. Course fee: \$20
- PHYS 262 General Physics III 4 credit hours**  
*(Prerequisite: PHYS 161. Pre- or corequisite: MATH 264)* Calculus-based treatment of optics and topics in modern physics for science and engineering students.
- PSCI 110 The Political World 3 credit hours**  
 Introduction to politics emphasizing how people can understand their own political systems and those of others.
- PSCI 200 U.S. Politics 3 credit hours**  
 Survey of American politics: theory of democracy and political institutions, governmental

branches and their bureaucracies.

**PSCI 210 State and Local Politics 3 credit hours**

Analysis of state and local politics, using New Mexico and other states as examples. *Fall, spring only.*

**PSCI 220 Comparative Government and Politics 3 credit hours**

Comparison of the roles of public opinion, electoral systems, political parties, interest groups, governmental institutions and policy performance in European democracies, developing third world nations and communist political systems.

**PSCI 240 International Politics 3 credit hours**

Various significant factors in international politics; nationalism, ideology, deterrence, balance of power, international law and international conflict and collaboration.

**PSCI 260 Political Ideas 3 credit hours**

Classical and contemporary political ideas and ideologies; introduction to many of the enduring political issues which are presented in descriptive, analytical and normative terms. *Fall only.*

**PSCI 296 Topics in Political Science 1-3 credit hours**

Various topics. See Schedule of Classes.

**PSY 105 Introduction to Psychology 3 credit hours**

*(Prerequisite: RDG 100)* Psychology as the scientific study of behavior and mental processes: methodology, psychobiology, learning, memory, personality, psychological disorders, therapy, personality and social psychology.

**PSY 200 Statistical Principles 3 credit hours**

*(Prerequisite: PSY 105. Recommended: MATH 119 or 120)* Basic statistics principles for the description and interpretation of psychological data: frequency distributions, graphing, measures of central tendency, variability, regression, correlation, hypothesis testing and analysis of variance. *Fall, spring only.*

**PSY 220 Developmental Psychology 3 credit hours**

*(Prerequisite: PSY 105)* Physical, social, emotional and intellectual development across the life span. Emphasis on research and applications.

**PSY 230 Psychology of Adjustment 3 credit hours**

*(Prerequisite: PSY 105)* Normal human adjustment and coping in personal and interpersonal arenas: stress and mood management, self-esteem, social adjustment, communication and relationships.

**PSY 231 Human Sexuality 3 credit hours**

*(Recommended: ENG 101)* Physiological, cultural, social and individual factors that in-

fluence sexual behavior, sex roles and sex identity.

**PSY 232 Clinical Psychology 3 credit hours**

*(Prerequisite: PSY 105)* Clinical psychology as a profession and research area: psychometrics and assessment, systems of prevention and therapy, forensic psychology, program evaluation, professional and ethical issues.

**PSY 233 Psychology and Film 3 credit hours**

*(Prerequisite: RDG 100)* Psychiatric disorders as portrayed in films, offering an opportunity to see realistic manifestations of "madness," and cinema's ability to reflect and to affect perceptions of mental illness and treatment.

**PSY 240 Brain and Behavior 3 credit hours**

*(Prerequisite: PSY 105 or BIO 121/121L)* Survey of the role of the nervous system in the control of behavior and mental processes. *Fall only.*

**PSY 260 Psychology of Learning and Memory 3 credit hours**

*(Prerequisite: PSY 105)* Study of learning in the laboratory, ranging from simple processes such as conditioning to complex ones such as transfer, memory and concept formulation. *Fall only.*

**PSY 265 Cognitive Psychology 3 credit hours**

*(Prerequisite: PSY 105)* Theories and research on various mental processes: memory (encoding, storage and retrieval), attention, comprehension, categorization, reasoning, problem solving, language and motor skills. *Spring only.*

**PSY 271 Social Psychology 3 credit hours**

*(Prerequisite: PSY 105 or SOC 101)* Social interaction: communication, perception of the self and others, attitudes and leadership. *Spring only.*

**PSY 296 Topics in Psychology 3 credit hours**

*(Prerequisite: RDG 100)* Various topics. See Schedule of Classes.

**PSY 299 Death and Dying 3 credit hours**

*(Prerequisite: RDG 100)* Psychological, emotional and sociological aspects of death in American culture.

**RLGN 107 Living World Religions 3 credit hours**

*(Prerequisite: RDG 100)* Introduction to the academic study of religion, focusing on major world religions: religions of antiquity, Hinduism, Buddhism, Taoism, Judaism, Christianity, Islam and religion in primal cultures.

**RLGN 247 Topics in Religious Studies 3 credit hours**

*(Prerequisite: RDG 100)* Various topics. See Schedule of Classes.

- SOC 101 Introduction to Sociology 3 credit hours**  
*(Prerequisite: RDG 100)* Basic concepts and theories of contemporary sociology: culture, socialization, social groups, deviance, sexuality, race and ethnicity, gender, age, family, medicine and religion.
- SOC 111 Criminal Justice System 3 credit hours**  
*(Prerequisites: RDG 100 and SOC 101)* Overview of criminal justice processes. Exploration of law, law enforcement, prosecution, defense, trial and sentencing.
- SOC 211 Social Problems 3 credit hours**  
*(Prerequisite: SOC 101)* Analysis from a sociological perspective of a range of problems in contemporary U.S. society: racism and prejudice, crime and delinquency, mental disorders, family changes, poverty and substance abuse.
- SOC 212 Juvenile Delinquency 3 credit hours**  
*(Prerequisite: SOC 101)* Theories of juvenile delinquency, child abuse, the juvenile justice system, probation, treatment and corrections for juveniles.
- SOC 213 Deviant Behavior 3 credit hours**  
*(Prerequisite: SOC 101)* Theories of deviance and examination of behaviors such as rape, murder, theft, drug use, alcoholism, prostitution, mental disorders and suicide.
- SOC 214 Sociology of Corrections 3 credit hours**  
*(Prerequisite: SOC 101)* Theory, practice and legal basis for investigation, treatment and supervision of offenders in custody, on probation or parole; history of penology and its relationship to various penal philosophies.
- SOC 215 Criminology 3 credit hours**  
*(Prerequisite: SOC 101)* Causes of crime with emphasis on sociological factors, the various faces of crime, the criminal past and present and criminology theory.
- SOC 216 Ethnic and Minority Groups 3 credit hours**  
*(Prerequisite: SOC 101)* Relationships among majority and minority and ethnic groups: prejudice, discrimination, stereotyping, pluralism and social mobility.
- SOC 225 Sociology of the Family 3 credit hours**  
*(Prerequisite: SOC 101)* Major theories of the family and the status of the modern family in an era of varied family forms.
- SOC 230 Society and Personality 3 credit hours**  
*(Prerequisite: SOC 101 or PSY 105)* Introduction of topics in social psychology, such as personality theories, concepts of self, human relationships, small group dynamics and organizational theories.



- SPAN 203 Intermediate Spanish II Conversation 3 credit hours**  
*(Pre- or corequisite: SPAN 202 or permission of instructor)* Designed to increase skills in speaking Spanish.
- SPAN 275 Accelerated Beginning Spanish 4 credit hours**  
*(Prerequisite: RDG 100 or permission of instructor)* SPAN 101 and 102 in one term; recommended for language enthusiasts or those who have had exposure to Spanish either in the home or from previous study.
- SPAN 276 Accelerated Intermediate Spanish 3 credit hours**  
*(Prerequisite: SPAN 102 or SPAN 275 or permission of instructor)* SPAN 201 or 202 in one term; recommended for language enthusiasts or those who have had exposure to Spanish either in the home or from previous study.
- SPAN 280 Readings in Spanish Literature 3 credit hours**  
*(Prerequisite: SPAN 202 or SPAN 276 or permission of instructor)* Selected readings from literature written in Spanish by Spanish and Spanish-American authors.
- SPAN 296 Topics in Spanish 1-3 credit hours**  
*(Prerequisite: varies)* Various topics. See Schedule of Classes.
- THEA 122 Introduction to Theater 3 credit hours**  
*(Recommended: ENG 101)* Study of the history and role of theater past and present: the nature of theater art, theater traditions ranging from the Ancient Greeks to Epic Theater, elements that make up a production.
- THEA 296 Topics in Theater 1-3 credit hours**  
 Various topics. See Schedule of Classes.
- TLS 296 Topics in Liberal Arts 1-4 credit hours**  
 Various topics. See Schedule of Classes.

## AEROSPACE STUDIES

Students may register at TVI for the University of New Mexico Aerospace Studies (Air Force). Uniforms and textbooks are provided. Credits in Aerospace Studies may not be applied to any associate degree or certificate at TVI. Students enrolled in this program may not be eligible to receive financial aid or Veterans Administration benefits. Because these courses are offered at the main campus of UNM, students should contact UNM before enrolling:

Evette E. Aponte, Lt. Col., USAF, Commander  
University of New Mexico AFROTC Detachment 510  
Aerospace Studies Building, 1901 Las Lomas NE  
277-4502

**AFAS 010 Leadership Laboratory 0 credit hours**

Progressively challenging leadership and management experiences: physical fitness activities; lectures on military policies, ethics, customs and courtesies, military drill and ceremonies. Required enrollment for admission into cadet corps.

**AFAS 120 Air Force Today 1 credit hour**

*(Corequisite: AFAS 010)* Introduction to Air Force environment; organization and missions of the Air Force units, officership and military professionalism. *Alternating fall terms only.*

**AFAS 121 Air Force Today 1 credit hour**

*(Corequisite: AFAS 010)* Introduction to Air Force environment; organization and missions of Air Force units, officership and military professionalism. *Alternating spring terms only.*

**AFAS 250 Development of Air Power 1 credit hour**

*(Corequisite: AFAS 010)* An examination of factors contributing to the development of air power from its beginnings to present day and the evolution of air power concepts and doctrine. Meets once weekly. *Alternating fall terms only.*

**AFAS 251 Development of Air Power 1 credit hour**

*(Corequisite: AFAS 010)* See AFAS 250 course description. *Alternating spring terms only.*

# BUSINESS OCCUPATIONS

The vision of the Business Occupations Department is building business careers. This vision is accomplished by providing education, training and skills students can use to achieve career goals. The department focuses on superior customer service, technology, distance learning and student recruitment and retention as it serves a diverse population of students who will participate in business strategies for the next century. Offerings include department certificates, certificate programs, associate of applied science degrees and an associate of arts degree as follows:

|                                        |                                                     |
|----------------------------------------|-----------------------------------------------------|
| Accounting                             | Certificate and Associate of Applied Science Degree |
| Administrative Assistant               | Certificate and Associate of Applied Science Degree |
| Banking                                | Certificate and Associate of Applied Science Degree |
| Business Administration                | Certificate and Associate of Applied Science Degree |
| Business Graphics<br>and Communication | Certificate and Associate of Applied Science Degree |
| Court Reporting                        | Certificate and Associate of Applied Science Degree |
| Hospitality and Tourism                | Certificate and Associate of Applied Science Degree |
| International Business                 | Certificate and Associate of Applied Science Degree |
| Legal Assistant Studies                | Associate of Applied Science Degree                 |
| Microcomputer Management               | Certificate and Associate of Applied Science Degree |
| Network Management                     | Certificate and Associate of Applied Science Degree |
| Pre-Management                         | Associate of Arts Degree                            |
| Bookkeeping                            | Certificate (three terms)                           |
| Continuous Quality<br>Improvement      | Verification of Completion (six one-credit courses) |
| Customer Service<br>Representative     | Verification of Completion (one term)               |
| Data Entry                             | Verification of Completion (7.5-week course)        |
| Entrepreneurship                       | Verification of Completion (one term)               |

|                           |                                              |
|---------------------------|----------------------------------------------|
| Food Service Management   | Certificate                                  |
| Judicial Studies          | Certificate                                  |
| Office Assistant          | Certificate                                  |
| Real Estate               | Verification of Completion                   |
| Sales and Cashiering      | Certificate (one term)                       |
| Stenotranscription        | Certificate                                  |
| Business Resource Centers | Enhanced learning opportunities for students |

Business Occupations classes may be taught day, evening and/or Saturday at all four TVI campuses, at arranged on-site locations and through distance learning delivery methods.

Some programs, courses and elective courses are not offered every term. A student who registers for a Business Occupations program may be required to take English, reading and/or math placement tests. Advanced students may earn credit for on-the-job-training through cooperative education and internship courses.

The New Mexico Two-Year/Four-Year Business Articulation Matrix, as well as articulation agreements with several New Mexico postsecondary educational institutions, offer course transfer opportunities for Business Occupations students (program directors have details).

Business Occupations programs that have received national accreditation are:

|                          |                                                         |
|--------------------------|---------------------------------------------------------|
| Accounting               | Association of Collegiate Business Schools and Programs |
| Administrative Assistant | Association of Collegiate Business Schools and Programs |
| Business Administration  | Association of Collegiate Business Schools and Programs |
| Microcomputer Management | Association of Collegiate Business Schools and Programs |
| Pre-Management           | Association of Collegiate Business Schools and Programs |
| Court Reporting          | National Court Reporters Association                    |
| Legal Assistant Studies  | American Bar Association                                |

The North Central Association of Colleges and Schools, TVI's accrediting agency, requires that the Business Occupations Department provide outcomes assessment for each of its program areas. All Business Occupations students are required to participate in outcomes assessment. Test scores do not affect graduation status. Program directors have information regarding outcomes assessment testing procedures.

All occupational courses must be passed with a minimum grade of C to meet prerequisite requirements and certificate and degree requirements.

All Business Occupations Department students do not have the option of taking occupational courses on a credit/no credit basis except the following Court Reporting courses: CR 104, CR 210, CR 220, and CR 230. Students in those Court Reporting courses must communicate with the Financial Aid Office before selecting a grade option.

A keyboarding skill of 25 words per minute is required before students may enroll in some business courses and is required for entry into the Microcomputer Management and

Business Graphics and Communication programs. Keyboarding courses are available in the Business Occupations Department.

Challenge exams are available for many Business Occupations Department courses. Students wishing to challenge a course should contact the program director in their area of study.

## **BUSINESS RESOURCE CENTERS**

The Business Resource Centers (BRC) at Main and Montoya campuses support student success and retention in Business Occupations programs. The BRCs provide opportunities for students to practice and strengthen skills presented in the classroom, complete outside assignments and utilize resources and state-of-the-art technology to create reports and presentations.

## **CONTINUOUS QUALITY IMPROVEMENT (CQI)**

Continuous Quality Improvement (CQI) courses are designed to help improve processes and change the culture within organizations. The courses highlight quality improvement concepts and theories, fundamentals of continuous quality improvement, techniques for data gathering, quality tools, team building, action plans for process improvement and quality leadership.

The quality courses are also offered as a concentration option for the associate of applied science degree in Business Administration.

Students enrolled in this program may not be eligible to receive financial aid or Veterans Administration benefits. Application for a verification of completion may be made with the program director upon successful completion of the six CQI courses.

**BA 101 Introduction to Quality Management 1 credit hour**  
Concepts and theories of quality improvement. (5 weeks)

**BA 102 Fundamentals of Continuous Quality Improvement (CQI) 1 credit hour**  
Data gathering for process improvements and organizational culture change. (5 weeks)

**BA 103 Quality Tools 1 credit hour**  
Tools and techniques such as the cause and effect diagram, brainstorming, control charts and Pareto diagrams. (5 weeks)

**BA 104 Team Building for Quality 1 credit hour**  
Group process as it applies to team building. (5 weeks)

**BA 105 Re-engineering for Quality 1 credit hour**  
Tools and techniques to formulate action plans for process improvements. (5 weeks)

Mission statement, goals and strategies to implement quality leadership throughout an organization. (5 weeks)

## CUSTOMER SERVICE REPRESENTATIVE

The Customer Service Representative courses are designed to improve skills in delivering effective customer service in varying business environments. Students acquire basic keyboarding and interpersonal skills used in a customer service setting. ENG 099 and MATH 099 or equivalent are required for entry into this program.

Students enrolled in this program may not be eligible to receive financial aid or Veterans Administration benefits. Application for a verification of completion may be made with the program director upon successful completion of the required courses.

### *Credit Hours*

|                    |     |                                                       |           |
|--------------------|-----|-------------------------------------------------------|-----------|
| AA                 | 101 | Beginning Keyboarding .....                           | 3         |
| AA                 | 170 | Business Telephone Techniques (5 weeks) .....         | 1         |
| AA                 | 171 | Working with the Challenging Customer (5 weeks) ..... | 1         |
| AA                 | 172 | Product and Service Sales (5 weeks) .....             | 1         |
| AA                 | 173 | Time Management (5 weeks) .....                       | 1         |
| BA                 | 131 | Business Interpersonal Skills (7.5 weeks) .....       | 2         |
| MMS                | 150 | Microsoft Windows (5 weeks) .....                     | 1         |
| <b>Total .....</b> |     |                                                       | <b>10</b> |

### Optional Courses<sup>#</sup>

|    |     |                               |   |
|----|-----|-------------------------------|---|
| AA | 102 | Keyboard Applications .....   | 3 |
| AA | 105 | Keyboard Skill-building ..... | 2 |
| AA | 180 | Work-Site Learning .....      | 1 |
| BA | 252 | Customer Relations .....      | 3 |

<sup>#</sup>May be taken at any time when prerequisites are met.

## DATA ENTRY

The wide use of computers in business and industry today has created a number of job opportunities for individuals with data entry skills.

The Data Entry course offers training to prepare students for entry-level positions for many areas of employment. Application for a verification of completion may be made with the program director upon successful completion of the course.

(Prerequisites: AA 101 or 35 wpm typing speed or a five-minute timing, RDG 099 or equivalent, ENG 099 or equivalent, and MATH 099 or equivalent) The purpose of this open-exit course is development of speed and accuracy for computer data entry applica-

tions. (1 theory + 4 lab hours a week for 7.5 weeks)

## ENTREPRENEURSHIP

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

Students enrolled in this program may not be eligible to receive financial aid or Veterans Administration benefits. Application for a verification of completion may be made with the program director upon successful completion of the course.

### **ENTR 101 Entrepreneurship 6 credit hours**

Tasks and activities are accomplished through lecture, group activities and completion of a business plan.

### **ENTR 102 Entrepreneurship in a Global Setting 3 credit hours**

*(Prerequisite: RDG 099 or equivalent)* Small business exporting and importing, market analysis, pricing, financing, marketing, insurance, transportation and distribution of exports/imports and North American Free Trade Agreement (NAFTA) are covered.

## REAL ESTATE

The real estate courses are for persons seeking New Mexico state licensing or continuing education credits in real estate and appraisal. All courses are approved by the New Mexico Real Estate Commission. Courses listed in this section may be used to meet requirements for the real estate concentration for the associate of applied science degree in Business Administration. Course descriptions are in the Business Administration section.

Students enrolled in this program may not be eligible to receive financial aid or Veterans Administration benefits.

Credit courses which meet New Mexico Real Estate Commission requirements are:

|        |                        | TVI<br>Credit<br>Hours | Continuing<br>Education<br>Contact<br>Hours | Pre-Licensing<br>Contact<br>Hours |
|--------|------------------------|------------------------|---------------------------------------------|-----------------------------------|
| BA 270 | Real Estate Law        | 3                      | 20                                          | **30                              |
| BA 271 | Real Estate Practice   | 3                      | 20                                          | **30                              |
| BA 272 | Real Estate Appraisal  | 3                      | 20                                          | 30<br>*37.5                       |
| BA 273 | Real Estate Finance    | 3                      | 20                                          | 30                                |
| BA 274 | Real Estate Investment | 3                      | 20                                          | 30                                |

|        |                                                                               | TVI<br>Credit<br>Hours | Continuing<br>Education<br>Contact<br>Hours | Pre-Licensing<br>Contact<br>Hours |
|--------|-------------------------------------------------------------------------------|------------------------|---------------------------------------------|-----------------------------------|
| BA 275 | Property Management                                                           | 3                      | 20                                          | 30                                |
| BA 279 | Uniform Standards of<br>Professional Appraisal<br>Practice                    | 2                      | 0                                           | *15                               |
| BA 280 | Fair Housing Law                                                              | 1                      | 8                                           | n/a                               |
| BA 281 | Americans with Disabilities Act<br>and Related Handicap<br>Discrimination Law | 1                      | 8                                           | n/a                               |
| BA 282 | Appraising the Single Family<br>Residence                                     | 3                      | 20                                          | 30                                |
| BA 283 | Rules and Regulations<br>of the New Mexico<br>Real Estate<br>Commission       | 1                      | 8                                           | n/a<br>*37.5                      |

\*Pre-licensing for Appraisal Credit

\*\*Pre-licensing for New Mexico Real Estate Sales Agent

## ACCOUNTING

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

Many of the Business Occupations Department's accounting courses are accepted for fulfillment of the education requirement for the Certified Public Accountant (CPA) and Certified Management Accounting (CMA) exams. However, a bachelor's degree is a requirement for both exams and must be obtained from an accredited four-year postsecondary educational institution.

A suggested schedule per term for the occupational component of the certificate/associate of applied science degree program in Accounting includes:

Term 1: ACCT 101, ACCT 111, BA 113, BA 121, BA 131

Term 2: ACCT 102, BA 122, BA 133, BA 150

Term 3: ACCT 201, ACCT 240, ACCT 260, ACCT 254,  
general elective (required for certificate only)

Term 4: ACCT 202, ACCT 255, ACCT 280, ACCT elective, BA 211

*Credit Hours*

ACCT 101 Financial Accounting I  
or ACCT 101A and ACCT 101B ..... 6

|                                                      |                    |                                           |              |
|------------------------------------------------------|--------------------|-------------------------------------------|--------------|
| ACCT                                                 | 102                | Financial Accounting II                   | 6            |
| or ACCT                                              | 102A and ACCT 102B |                                           | 6            |
| ACCT                                                 | 111                | Business Math                             | 3            |
| ACCT                                                 | 201                | Intermediate Accounting I                 | 4            |
| ACCT                                                 | 202                | Intermediate Accounting II                | 4            |
| ACCT                                                 | 240                | Tax Accounting I                          | 3            |
| ACCT                                                 | 254                | Electronic Spreadsheets                   | 3            |
| ACCT                                                 | 255                | Computerized Accounting                   | 3            |
| ACCT                                                 | 260                | Cost Accounting                           | 3            |
| ACCT                                                 | 280                | Managerial Accounting                     | 3            |
| BA                                                   | 113                | Introduction to Business                  | 3            |
| BA                                                   | 121                | Business English                          | 3            |
| BA                                                   | 122                | Business Writing                          | 3            |
| BA                                                   | 131                | Business Interpersonal Skills (7.5 weeks) | 2            |
| BA                                                   | 133                | Principles of Management                  | 3            |
| BA                                                   | 150                | Introduction to Computer Processing       | 4            |
| BA                                                   | 211                | Business Law                              | 3            |
| One general elective (required for certificate only) |                    |                                           | 3-4          |
| One ACCT elective                                    |                    |                                           | 3            |
| <b>Total Required for Certificate</b>                |                    |                                           | <b>65-66</b> |
| <b>Degree (Occupational Component)</b>               |                    |                                           | <b>62</b>    |

### Arts & Sciences Courses Required for Degree

|                                    |                          |                                            |           |
|------------------------------------|--------------------------|--------------------------------------------|-----------|
| ENG                                | 101                      | College Writing                            | 3         |
| COMM                               | 130 or 221 or 232 or 240 |                                            | 3         |
| MATH                               | 120                      | Intermediate Algebra or higher level math  | 4         |
| MATH                               | 145                      | Introduction to Probability and Statistics | 3         |
| or MATH                            | 245                      | Fundamentals of Probability and Statistics | 3         |
| Social Science/Humanities Elective |                          |                                            | 3         |
| <b>Total Required for Degree</b>   |                          |                                            | <b>78</b> |

### Accounting Electives

|      |     |                           |     |
|------|-----|---------------------------|-----|
| ACCT | 241 | Tax Accounting II         | 3   |
| ACCT | 270 | Governmental Accounting   | 3   |
| ACCT | 271 | Auditing                  | 3   |
| ACCT | 272 | Accounting Systems Design | 3   |
| ACCT | 296 | Accounting Topics         | 1-3 |

### General Electives

|      |     |                       |   |
|------|-----|-----------------------|---|
| ACCT | 298 | Internship            | 4 |
| ACCT | 299 | Cooperative Education | 4 |
| BA   | 215 | Money and Banking     | 3 |

|               |                |     |
|---------------|----------------|-----|
| ECON 200      | Macroeconomics | 3   |
| MMS Course(s) |                | 1-3 |

**ACCT 101 Financial Accounting I 6 credit hours**

*(Prerequisites: MATH 099, RDG 099 or equivalent; pre- or corequisite: ACCT 111 or MATH 162 or MATH 180)* Principles of the double-entry accounting system, recording transactions, adjusting entries, preparing statements and closing accounts, accounting for cash, accounts receivable, inventories and tangible and intangible assets are studied. ACCT 101A plus ACCT 101B are equivalent to this course.

**ACCT 101A Financial Accounting IA 3 credit hours**

*(Prerequisites: MATH 099 or equivalent; RDG 099 or equivalent)* This course is the first half of ACCT 101. Principles of the double-entry accounting system including recording transactions, adjusting entries, preparing statements and closing accounts are covered. ACCT 101A plus ACCT 101B are equivalent to ACCT 101.

**ACCT 101B Financial Accounting IB 3 credit hours**

*(Prerequisites: ACCT 101A and ACCT 111 or MATH 162 or MATH 180)* This course is the second half of ACCT 101 and includes cash, accounts receivable, inventories and tangible and intangible assets. ACCT 101A and ACCT 101B are equivalent to ACCT 101.

**ACCT 102 Financial Accounting II 6 credit hours**

*(Prerequisite: ACCT 101; pre- or corequisite: BA 150)* Accounting for current liabilities, payroll, partnerships, corporations, long-term liabilities, investments, statement of cash flows and financial statement analysis. ACCT 102A plus ACCT 102B are equivalent to this course.

**ACCT 102A Financial Accounting IIA 3 credit hours**

*(Prerequisite: ACCT 101 or 101B; pre- or corequisite: BA 150)* This course is the first half of ACCT 102 and includes current liabilities, payroll, partnerships and corporations. ACCT 102A plus ACCT 102B are equivalent to ACCT 102.

**ACCT 102B Financial Accounting IIB 3 credit hours**

*(Prerequisites: ACCT 102A, BA 150)* This course is the second half of ACCT 102 and includes long-term liabilities, investments, statement of cash flows and financial statement analysis. ACCT 102A plus ACCT 102B are equivalent to ACCT 102.

**ACCT 103 Survey of Accounting for Non-Business Majors 3 credit hours**

An overview of accounting for non-business majors. Both manual and spreadsheet techniques are employed. Data flow and programming examples of accounting systems are discussed. (2 theory + 3 lab hours a week)

**ACCT 111 Business Math 3 credit hours**

*(Prerequisite: MATH 099 or equivalent; this course is a pre- or corequisite for ACCT 101)* Basic arithmetic operations related to business applications and accounting. 10-key touch

method skills using electronic calculators.

**ACCT 201 Intermediate Accounting I 4 credit hours**

*(Prerequisite: ACCT 102 or ACCT 102B)* Accounting theory, concepts, practical application, 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.

**ACCT 202 Intermediate Accounting II 4 credit hours**

*(Prerequisite: ACCT 201)* Accounting for current and long-term liabilities, capital stock transactions, dividends, retained earnings and cash flow statements and analysis.

**ACCT 240 Tax Accounting I 3 credit hours**

*(Prerequisite: ACCT 101 or ACCT 101B)* Fundamental characteristics of individual federal income taxes.

**ACCT 241 Tax Accounting II 3 credit hours**

*(Prerequisite: ACCT 240 or permission of program director)* Income tax aspects of corporations, partnerships, sub-chapter S corporations, fiduciaries, advanced concepts related to individual income taxes, tax planning and estate and gift taxation.

**ACCT 254 Electronic Spreadsheets 3 credit hours**

*(Prerequisites: ACCT 102 or ACCT 102B, BA 150 or permission of program director)* Computer spreadsheets for accounting and business applications. (2 theory + 3 lab hours a week) Course fee: \$15

**ACCT 255 Computerized Accounting 3 credit hours**

*(Prerequisites: ACCT 102 or ACCT 102B, BA 150 or permission of program director)* Payroll, inventory control, accounts payable, accounts receivable and general ledger using computerized integrated business software. (2 theory + 3 lab hours a week) Course fee: \$15

**ACCT 260 Cost Accounting 3 credit hours**

*(Prerequisite: ACCT 102 or ACCT 102B)* Job order and process costing systems for construction and manufacturing.

**ACCT 270 Governmental Accounting 3 credit hours**

*(Prerequisite: ACCT 102 or ACCT 102B)* Fund accounting for governmental and other non-profit entities.

**ACCT 271 Auditing 3 credit hours**

*(Prerequisite: ACCT 102 or ACCT 102B)* Survey of auditing that includes audit standards, reports, professional ethics, legal liability, evidence accumulation, audit planning, internal control, transaction cycles, other engagements and operational auditing.

**ACCT 272      Accounting Systems Design      3 credit hours**

*(Prerequisite: ACCT 102 or ACCT 102B)* Students design a manual accounting system which includes a chart of accounts, accounting manual, flow charts, control and support systems and reports to management.

**ACCT 280      Managerial Accounting      3 credit hours**

*(Pre- or corequisite: ACCT 260)* Interpretation of accounting information for decision making by management in planning and controlling business activities.

**ACCT 296      Accounting Topics      1-3 credit hours**

Current topics in accounting.

**ACCT 297      Special Problems      Variable credit hours**

*(Prerequisite: permission of program director)* The student and instructor define a specific problem in the area of the student's interest and directly related to the program. The student develops and executes a solution using analytical techniques to the problem. An oral presentation may be required.

**ACCT 298      Internship      4 credit hours**

*(Prerequisites: ACCT 102 or ACCT 102B and permission of the program director)* Students work a minimum of 150 hours in a new job experience in accounting or training-related supervised work stations. Students are not paid for their work but are supervised jointly by TVI and the company. (1 theory + 9 lab hours a week)

**ACCT 299      Cooperative Education      4 credit hours**

*(Prerequisites: ACCT 102 or ACCT 102B and permission of program director)* Students work a minimum of 150 hours in a new job experience in accounting or training-related supervised work stations. Student trainees are paid by the cooperating firm and supervised jointly by TVI and the employer. (1 theory + 9 lab hours a week)

## **ADMINISTRATIVE ASSISTANT**

The Administrative Assistant program offers training in organizational and interpersonal skills, as well as office technology and written communication. Students are given opportunities to develop marketable skills and attitudes necessary to meet the demands of changing office technology. Concentrations in office technology and medical are offered.

Individuals who have already attained a Certified Professional Secretary (CPS) rating may receive credit hours toward the Administrative Assistant associate of applied science degree. Students may contact the program director for more information about advanced placement.

The associate of applied science degree may be transferred to the University of New Mexico for credit toward a bachelor's degree in Organizational Learning and Instructional Technology.

A suggested schedule per term for the Office Technology and Medical concentrations is listed below:

**Office Technology Concentration**

- Term 1: AA 101, AA 102, ACCT 111, BA 131, BA 150
- Term 2: AA 112, AA 107, AA 143, BA 121, MMS 150, MMS 157, MMS 160
- Term 3: AA 202, AA 205, BA 113, BA 122, electives
- Term 4: AA 200, AA 231, AA 260, BA 133

**Medical Concentration**

- Term 1: AA 101, AA 102, ACCT 111, BA 131, BA 150
- Term 2: AA 107, AA 112, AA 143, BA 121, MMS 150, elective
- Term 3: AA 205, BA 113, BA 122, CR 132 (or last term)
- Term 4: AA 231, AA 260, AA 270, AA 275 or AA 276, BA 133

*Credit Hours*

|                       |     |                                                 |           |
|-----------------------|-----|-------------------------------------------------|-----------|
| AA                    | 101 | Beginning Keyboarding .....                     | 3         |
| AA                    | 102 | Keyboard Applications .....                     | 3         |
| AA                    | 107 | Intermediate Keyboard Skill-building .....      | 2         |
| AA                    | 112 | Office Accounting Procedures .....              | 4         |
| AA                    | 143 | Word Processing .....                           | 4         |
| AA                    | 205 | Advanced Keyboard Skill-building .....          | 2         |
| AA                    | 231 | Business English Applications .....             | 3         |
| AA                    | 260 | Business Procedures .....                       | 3         |
| ACCT                  | 111 | Business Math .....                             | 3         |
| BA                    | 113 | Introduction to Business.....                   | 3         |
| BA                    | 121 | Business English .....                          | 3         |
| BA                    | 122 | Business Writing .....                          | 3         |
| BA                    | 131 | Business Interpersonal Skills (7.5 weeks) ..... | 2         |
| BA                    | 133 | Principles of Management .....                  | 3         |
| BA                    | 150 | Introduction to Computer Processing .....       | 4         |
| MMS                   | 150 | Microsoft Windows .....                         | 1         |
| <b>Subtotal .....</b> |     |                                                 | <b>46</b> |

**CONCENTRATIONS FOR CERTIFICATE OR DEGREE**

(One Concentration Required)

**Office Technology Concentration**

|                                             |     |                                              |           |
|---------------------------------------------|-----|----------------------------------------------|-----------|
| AA                                          | 200 | Advanced Word Processing.....                | 3         |
| AA                                          | 202 | Information Processing .....                 | 3         |
| MMS                                         | 157 | PowerPoint Fundamentals (5 weeks) .....      | 1         |
| MMS                                         | 160 | Introduction to the Internet (5 weeks) ..... | 1         |
| Approved Electives .....                    |     |                                              | 5         |
| <b>Total Required for Certificate .....</b> |     |                                              | <b>59</b> |

## Medical Concentration

|                                                 |     |                                                |           |
|-------------------------------------------------|-----|------------------------------------------------|-----------|
| AA                                              | 270 | Medical Transcription . . . . .                | 3         |
| AA                                              | 275 | ICD-9-CM Coding . . . . .                      |           |
| or AA                                           | 276 | Current Procedural Terminology (CPT) . . . . . | 3         |
| CR                                              | 132 | Medical Terminology and Anatomy . . . . .      | 5         |
| Approved Electives                              |     | . . . . .                                      | 2         |
| <b>Total Required for Certificate . . . . .</b> |     |                                                | <b>59</b> |

## Arts & Sciences Courses Required for Degree

|                                            |                                                            |                                      |              |
|--------------------------------------------|------------------------------------------------------------|--------------------------------------|--------------|
| COMM                                       | 130 or 221 or 232 or 240 . . . . .                         |                                      | 3            |
| ENG                                        | 101                                                        | College Writing . . . . .            | 3            |
| MATH                                       | 119                                                        | Methods of Problem Solving or higher |              |
|                                            | or Biological and Physical Science Elective . . . . .      |                                      | 3-4          |
|                                            | Social Science/Humanities Elective . . . . .               |                                      | 3            |
|                                            | Arts & Sciences Elective except Military Studies . . . . . |                                      | 3            |
| <b>Total Required for Degree . . . . .</b> |                                                            |                                      | <b>74-75</b> |

## APPROVED OFFICE TECHNOLOGY ELECTIVES

|      |     |                                                            |     |
|------|-----|------------------------------------------------------------|-----|
| AA   | 170 | Business Telephone Techniques (5 weeks) . . . . .          | 1   |
| AA   | 171 | Working with the Challenging Customer (5 weeks) . . . . .  | 1   |
| AA   | 172 | Product and Service Sales (5 weeks) . . . . .              | 1   |
| AA   | 173 | Time Management (5 weeks) . . . . .                        | 1   |
| AA   | 250 | Machine Transcription . . . . .                            | 3   |
| AA   | 296 | Topics Course . . . . .                                    | 1-3 |
| AA   | 298 | Internship . . . . .                                       | 4   |
| AA   | 299 | Cooperative Education . . . . .                            | 4   |
| BA   | 157 | Computer Accounting for Small Business (5 weeks) . . . . . | 1   |
| BA   | 211 | Business Law . . . . .                                     | 3   |
| CR   | 132 | Medical Terminology and Anatomy . . . . .                  | 5   |
| CR   | 240 | Legal Terminology . . . . .                                | 3   |
| DE   | 101 | Data Entry Skill-building (7.5 weeks) . . . . .            | 2   |
| MMS  | 134 | WordPerfect for Windows . . . . .                          | 3   |
| MMS  | 156 | Office Management Software (5 weeks) . . . . .             | 1   |
| MMS  | 161 | Project Management (5 weeks) . . . . .                     | 1   |
| MMS  | 171 | Hypertext Markup Language (HTML) (5 weeks) . . . . .       | 1   |
| MMS  | 201 | Hardware and Software Administration . . . . .             | 3   |
| MMS  | 255 | Desktop Publishing . . . . .                               | 3   |
| SSKL | 211 | Employment Skills--General (15 hours) . . . . .            | 1   |

## APPROVED MEDICAL ELECTIVES

|    |     |                                                           |   |
|----|-----|-----------------------------------------------------------|---|
| AA | 170 | Business Telephone Techniques (5 weeks) . . . . .         | 1 |
| AA | 171 | Working with the Challenging Customer (5 weeks) . . . . . | 1 |



- AA 170 Business Telephone Techniques 1 credit hour**  
Tape recorded and role playing activities are used to develop proper enunciation and pronunciation and effective listening skills; methods for taking messages, transferring calls, putting callers on hold, screening calls, returning calls and dealing with challenging callers are presented. (5 weeks)
- AA 171 Working with the Challenging Customer 1 credit hour**  
Designed to enhance the student's ability to act effectively when working with the challenging customer for the purpose of promoting customer satisfaction. (5 weeks)
- AA 172 Product and Service Sales 1 credit hour**  
Apply sales principles to promote goods and services. A quality approach to serving customers is emphasized. (5 weeks)
- AA 173 Time Management Skills 1 credit hour**  
Principles and activities are presented to aid the student in applying time management skills in a personal and professional environment. (5 weeks)
- AA 180 Work-Site Learning 1 credit hour**  
Participation in an approved customer service setting to promote practical application of customer service core curriculum. Work-Site Learning is taken in the student's final five weeks of the program; the student must acquire a minimum of 50 hours. (5 weeks; 1 theory + 9 lab hours a week)
- AA 200 Advanced Word Processing 3 credit hours**  
(Prerequisites: AA 143, AA 202, MMS 157 and minimum typing speed of 45 wpm on a five-minute timing or permission of program director) Advanced applications for preparing business documents. (2 theory + 3 lab hours a week) Course fee: \$15
- AA 202 Information Processing 3 credit hours**  
(Prerequisite: AA 143 or permission of program director) Computerized office applications, electronic spreadsheets, database management and integration. (2 theory + 3 lab hours a week) Course fee: \$15
- AA 205 Advanced Keyboard Skill-building 2 credit hours**  
(Prerequisite: AA 107 or 45 wpm typing speed on a five-minute timing) Building speed and accuracy. Final evaluation is based on an average of three five-minute timings that average 55 wpm. (5 lab hours a week) Course fee: \$10
- AA 207 Law Office Technology 4 credit hours**  
(Prerequisites: AA 143, CR 240) Preparation of legal correspondence and forms from audio tape, typed copy and preprinted forms. Offered fall term. (3 theory + 3 lab hours a week) Course fee: \$15

- AA 231 Business English Applications 3 credit hours**  
(Prerequisite: BA 122 or permission of program director) Compose, transcribe, analyze/edit business documents for correct grammar, punctuation, mechanics, and language utilizing reference materials. Course fee: \$10
- AA 250 Machine Transcription 3 credit hours**  
(Prerequisites: AA 107, AA 143, BA 121, AA 231 recommended or permission of program director) Development of speed and accuracy in transcribing mailable copy. (2 theory + 3 lab hours a week) Course fee: \$15
- AA 260 Business Procedures 3 credit hours**  
(Prerequisites: AA 107, AA 122) Office procedures, technology, records management, human relations and telecommunications. Course should be taken in the student's final term.
- AA 270 Medical Transcription 3 credit hours**  
(Prerequisites: CR 132, AA 107, AA 143, BA 121, AA 231 recommended or permission of program director) Reinforce medical terminology and develop proficiency in transcribing medical reports, forms and other types of medical communications using correct format, grammar, punctuation, number, abbreviation, symbols and metric measurement rules. (2 theory + 3 lab hours a week) Course fee: \$15
- AA 275 ICD-9-CM Coding 3 credit hours**  
(Prerequisite: CR 132) Hospital coding using International Classification of Diseases (ICD), Clinical Modification codes, the coding book setup and the appropriate codes for diseases and procedures.
- AA 276 Current Procedural Terminology (CPT) 3 credit hours**  
(Prerequisite: CR 132, AA 275 or permission of program director) Fundamentals of medical office coding using CPT codes. CPT book setup and appropriate codes for office visits, procedures, exams and diagnoses.
- AA 296 Topics Course 1-3 credit hours**  
Current topics in office technology.
- AA 297 Special Problems Variable credit hours**  
(Prerequisite: permission of program director) The student and instructor define a specific problem in the area of the student's interest and directly related to the program. The student develops and executes a solution using analytical techniques to the problem. An oral presentation may be required.
- AA 298 Internship 4 credit hours**  
(Prerequisites: AA 143, BA 121 and typing skill of 55 wpm on a five-minute timed writing and permission of program director) Students work a minimum of 150 hours at office-related supervised work stations. Students are not paid for their work but are supervised jointly by TVI and the employer. The student and employer determine the weekly contact

hours. (1 theory + 9 lab hours a week)

**AA 299 Cooperative Education 4 credit hours**  
(Prerequisites: AA 143, BA 121 and typing skill of 55 wpm on a five-minute timed writing and permission of program director) Students work a minimum of 150 hours in a new office-related position. Student trainees are paid by the cooperating firm and supervised jointly by TVI and the employer. The student and employer determine the weekly contact hours. (1 theory + 9 lab hours a week)

## BANKING

The Banking program prepares students for entry-level positions and job advancement as tellers, operations supervisors, customer assistants, financial service representatives and banking support staff.

A suggested schedule per term for the occupational component of the certificate/associate of applied science degree program in Banking includes:

- Term 1: ACCT 111, BA 113, BA 121, BA 150, BANK 101
- Term 2: ACCT 101, BA 131, BA 222, BANK 103 or BA 211
- Term 3: ACCT 102, BA 133, BA 252, BANK 105
- Term 4: BA 284, BANK 109, BANK 111, Banking elective

### CERTIFICATE AND DEGREE REQUIREMENTS

*Credit Hours*

|                            |                                           |   |
|----------------------------|-------------------------------------------|---|
| ACCT 101,                  | Financial Accounting I                    |   |
| or ACCT 101A and ACCT 101B | .....                                     | 6 |
| ACCT 102                   | Financial Accounting II                   |   |
| or ACCT 102A and ACCT 102B | .....                                     | 6 |
| ACCT 111                   | Business Math                             | 3 |
| BA 113                     | Introduction to Business                  | 3 |
| BA 121                     | Business English                          | 3 |
| BA 131                     | Business Interpersonal Skills (7.5 weeks) | 2 |
| BA 133                     | Principles of Management                  | 3 |
| BA 150                     | Introduction to Computer Processing       | 4 |
| BA 222                     | Principles of Marketing                   | 3 |
| BA 252                     | Customer Relations                        | 3 |
| BA 284                     | Sales                                     | 3 |
| BANK 101                   | Principles of Banking                     | 3 |

|                                       |     |                                  |           |
|---------------------------------------|-----|----------------------------------|-----------|
| BANK                                  | 103 | Law and Banking Principles       |           |
| or BA                                 | 211 | Business Law                     | 3         |
| BANK                                  | 105 | Consumer Lending                 | 3         |
| BANK                                  | 109 | Bank Accounting (5 weeks)        | 1         |
| BANK                                  | 111 | Budgeting and Planning (5 weeks) | 1         |
| Banking Elective                      |     |                                  | 3         |
| <b>Total Required for Certificate</b> |     |                                  | <b>53</b> |

### Additional Degree Requirements

|                     |  |  |   |
|---------------------|--|--|---|
| Banking Elective(s) |  |  | 3 |
|---------------------|--|--|---|

### Arts & Sciences Courses Required for Degree

|                                  |                          |                                            |           |
|----------------------------------|--------------------------|--------------------------------------------|-----------|
| COMM                             | 130 or 221 or 232 or 240 |                                            | 3         |
| ECON                             | 200                      | Macroeconomics                             | 3         |
| ENG                              | 101                      | College Writing                            | 3         |
| ENG                              | 119                      | Technical Communications                   |           |
| or ENG                           | 102                      | Analytical and Argumentative Writing       | 3         |
| MATH                             | 145                      | Introduction to Probability and Statistics | 3         |
| <b>Total Required for Degree</b> |                          |                                            | <b>71</b> |

### ELECTIVES

|      |      |                                                                |     |
|------|------|----------------------------------------------------------------|-----|
| ACCT | 254  | Electronic Spreadsheets                                        | 3   |
| ACCT | 240  | Tax Accounting I                                               | 3   |
| BA   | 101  | Introduction to Quality Management (5 weeks)                   | 1   |
| BA   | 102  | Fundamentals of Continuous Quality Improvement (CQI) (5 weeks) | 1   |
| BA   | 103  | Quality Tools (5 weeks)                                        | 1   |
| BA   | 104  | Team Building for Quality (5 weeks)                            | 1   |
| BA   | 105  | Re-engineering for Quality (5 weeks)                           | 1   |
| BA   | 106  | Quality Leadership (5 weeks)                                   | 1   |
| BA   | 215  | Money and Banking                                              | 3   |
| BA   | 270  | Real Estate Law                                                | 3   |
| BA   | 271  | Real Estate Practice                                           | 3   |
| BA   | 272  | Real Estate Appraisal                                          | 3   |
| BA   | 273  | Real Estate Finance                                            | 3   |
| BANK | 107  | Analyzing Financial Statements                                 | 3   |
| BANK | 113  | Bank Simulator                                                 | 1-3 |
| BANK | 115  | Commercial Lending                                             | 3   |
| BANK | 296  | Banking Topics                                                 | 1-3 |
| BANK | 299  | Cooperative Education                                          | 4   |
| PHIL | 245B | Business Ethics                                                | 3   |

- BANK 101 Principles of Banking 3 credit hours**  
Survey of major aspects of banking from the fundamentals of negotiable instruments to contemporary issues.
- BANK 103 Law and Banking Principles 3 credit hours**  
Banker's guide to law and legal issues with emphasis on the Uniform Commercial Code.
- BANK 105 Consumer Lending 3 credit hours**  
Regulations governing credit practices, loan processing, cross-selling and collections.
- BANK 107 Analyzing Financial Statements 3 credit hours**  
*(Prerequisite: ACCT 101A or ACCT 101)* Financial analysis and skills needed to assess a borrower's ability to repay loans.
- BANK 109 Bank Accounting 1 credit hour**  
*(Prerequisite: ACCT 101A or ACCT 101)* Describes the accounting and reporting system specifically for commercial banks in the context of their special reporting requirements. (5 weeks)
- BANK 111 Budgeting and Planning 1 credit hour**  
Budgeting and planning for business operations. (5 weeks)
- BANK 113 Bank Simulator 1-3 credit hours**  
Computer simulation to devise and implement management goals for a commercial bank in a competitive environment.
- BANK 115 Commercial Lending 3 credit hours**  
Covers the technical side of commercial lending and important human relations skills.
- BANK 296 Banking Topics 1-3 credit hours**  
Current topics in banking.
- BANK 297 Special Problems Variable credit hours**  
*(Prerequisite: permission of program director)* The student and instructor define a specific problem in the area of the student's interest and directly related to the program. The student develops and executes a solution using analytical techniques to the problem. An oral presentation may be required.
- BANK 299 Cooperative Education 4 credit hours**  
*(Prerequisites: ACCT 101 or ACCT 101B and BANK 101 or permission of program director)* Students work a minimum of 150 hours in a new job experience in banking or training-related supervised work stations. Student trainees are paid by the cooperating firm and supervised jointly by TVI and the employer. (1 theory + 9 lab hours a week)

# BOOKKEEPING

The Bookkeeping program provides basic accounting and computer skills for entry-level employment. The courses in this program may integrate into other Business Occupations programs.

Each student receives an introduction to broad business operations as well as the basics of bookkeeping, written and verbal communication and introductory computer and accounting skills.

A suggested schedule per term for the Bookkeeping certificate includes:

Term 1: ACCT 101, ACCT 111, BA 113, BA 131

Term 2: ACCT 102, BA 121, BA 150

Term 3: ACCT 254, ACCT 298 or 299, BA 133, approved elective

*Credit Hours*

|                            |                                           |           |
|----------------------------|-------------------------------------------|-----------|
| ACCT 101                   | Financial Accounting I                    |           |
| or ACCT 101A and ACCT 101B |                                           | 6         |
| ACCT 102                   | Financial Accounting II                   |           |
| or ACCT 102A and ACCT 102B |                                           | 6         |
| ACCT 111                   | Business Math                             | 3         |
| ACCT 254                   | Electronic Spreadsheets                   | 3         |
| ACCT 298                   | Internship                                |           |
| or ACCT 299                | Cooperative Education                     | 4         |
| BA 121                     | Business English                          | 3         |
| BA 113                     | Introduction to Business                  | 3         |
| BA 131                     | Business Interpersonal Skills (7.5 weeks) | 2         |
| BA 133                     | Principles of Management                  | 3         |
| BA 150                     | Introduction to Computer Processing       | 4         |
| Approved elective(s)       |                                           | 3         |
| <b>Total</b>               |                                           | <b>40</b> |

## Approved Electives

|               |                           |     |
|---------------|---------------------------|-----|
| ACCT 240      | Tax Accounting I          | 3   |
| ACCT 241      | Tax Accounting II         | 3   |
| ACCT 255      | Computerized Accounting   | 3   |
| ACCT 260      | Cost Accounting           | 3   |
| ACCT 270      | Governmental Accounting   | 3   |
| ACCT 271      | Auditing                  | 3   |
| ACCT 272      | Accounting Systems Design | 3   |
| ACCT 280      | Managerial Accounting     | 3   |
| ACCT 296      | Accounting Topics         | 1-3 |
| MMS Course(s) |                           | 1-3 |

See the Accounting and Business Administration programs for course descriptions.

# BUSINESS ADMINISTRATION

The Business Administration program provides students with the required business skills, knowledge and experience for today and in the future.

An associate of applied science degree in Business Administration is awarded to students who complete the occupational requirements, Arts & Sciences components and a concentration in one of nine areas: continuous quality improvement (CQI), customer service representative, general business, health systems management, international business, merchandising, real estate, small business management or hospitality/tourism.

Structured sequences for the hospitality/tourism and real estate concentrations are necessary early in the programs. One or two specialty courses should be taken each term. The hospitality/tourism concentration includes elective courses sponsored by the Educational Institute (EI), an educational foundation of the American Hotel and Motel Association (AH&MA). These courses may be used toward industry-recognized professional certification. All courses in the real estate concentration are approved by the New Mexico Real Estate Commission (NMREC) for either pre-licensing or continuing education requirements. All courses offered in real estate appraisal are approved by the New Mexico Real Estate Appraisers Board (NMREAB).

Associate of applied science degree students select from the list of elective courses in their concentration options to prepare for their employment goals. Not all elective courses are offered each term. A minimum of 12 students is required for an elective course to be offered.

A suggested schedule per term for the occupational component of the certificate/associate of applied science degree program in Business Administration includes:

Term 1: ACCT 101 or ACCT 101A and ACCT 101B, ACCT 111,  
BA 113, BA 121, BA 131

Term 2: ACCT 102 or ACCT 102A and ACCT 102B, BA 122, BA 133, BA 150

Term 3: ACCT 254, BA 157, BA 211, BA 222, BA 284, elective

Term 4: Concentrations

## *Credit Hours*

|                            |                                                  |   |
|----------------------------|--------------------------------------------------|---|
| ACCT 101                   | Financial Accounting I                           |   |
| or ACCT 101A and ACCT 101B |                                                  | 6 |
| ACCT 102                   | Financial Accounting II                          |   |
| or ACCT 102A and ACCT 102B |                                                  | 6 |
| ACCT 111                   | Business Math                                    | 3 |
| ACCT 254                   | Electronic Spreadsheets                          | 3 |
| BA 113                     | Introduction to Business                         | 3 |
| BA 121                     | Business English                                 | 3 |
| BA 122                     | Business Writing                                 | 3 |
| BA 131                     | Business Interpersonal Skills (7.5 weeks)        | 2 |
| BA 133                     | Principles of Management                         | 3 |
| BA 150                     | Introduction to Computer Processing              | 4 |
| BA 157                     | Computer Accounting for Small Business (5 weeks) | 1 |
| BA 211                     | Business Law                                     | 3 |

|                                                 |          |                                   |              |
|-------------------------------------------------|----------|-----------------------------------|--------------|
| BA                                              | 222      | Principles of Marketing . . . . . | 3            |
| BA                                              | 284      | Sales . . . . .                   | 3            |
| Approved                                        | elective | (see concentrations) . . . . .    | 3-4          |
| <b>Total Required for Certificate</b> . . . . . |          |                                   | <b>49-50</b> |

### Arts & Sciences Courses Required for Degree

|                                               |                                                         |     |              |
|-----------------------------------------------|---------------------------------------------------------|-----|--------------|
| COMM                                          | 130 or 221 or 232 or 240 . . . . .                      | 3   |              |
| ECON                                          | 200 Macroeconomics or higher level . . . . .            | 3   |              |
| ENG                                           | 101 College Writing . . . . .                           | 3   |              |
| MATH                                          | 120 Intermediate Algebra or higher level math . . . . . | 3-4 |              |
| PHIL                                          | 245B Business Ethics . . . . .                          | 3   |              |
| <b>Subtotal Required for Degree</b> . . . . . |                                                         |     | <b>64-66</b> |

### CONCENTRATIONS FOR DEGREE

(One Concentration Required)

#### Continuous Quality Improvement (CQI) Concentration

|                                            |          |                                                                    |              |
|--------------------------------------------|----------|--------------------------------------------------------------------|--------------|
| BA                                         | 101      | Introduction to Quality Management (5 weeks) . . . . .             | 1            |
| BA                                         | 102      | Fundamentals of Continuous Quality Improvement (5 weeks) . . . . . | 1            |
| BA                                         | 103      | Quality Tools (5 weeks) . . . . .                                  | 1            |
| BA                                         | 104      | Team Building for Quality (5 weeks) . . . . .                      | 1            |
| BA                                         | 105      | Re-engineering for Quality (5 weeks) . . . . .                     | 1            |
| BA                                         | 106      | Quality Leadership (5 weeks) . . . . .                             | 1            |
| Approved                                   | Elective | . . . . .                                                          | 3-4          |
| <b>Total Required for Degree</b> . . . . . |          |                                                                    | <b>73-76</b> |

#### Customer Service Representative Concentration

|                                            |     |                                                           |              |
|--------------------------------------------|-----|-----------------------------------------------------------|--------------|
| AA                                         | 171 | Working with the Challenging Customer (5 weeks) . . . . . | 1            |
| AA                                         | 172 | Product and Service Sales (5 weeks) . . . . .             | 1            |
| AA                                         | 173 | Time Management (5 weeks) . . . . .                       | 1            |
| BA                                         | 252 | Customer Relations . . . . .                              | 3            |
| <b>Total Required for Degree</b> . . . . . |     |                                                           | <b>70-72</b> |

#### General Business Concentration

|                                            |          |                                 |              |
|--------------------------------------------|----------|---------------------------------|--------------|
| BA                                         | 299      | Cooperative Education . . . . . | 4            |
| Two                                        | Approved | Electives . . . . .             | 6            |
| <b>Total Required for Degree</b> . . . . . |          |                                 | <b>74-76</b> |

#### Health Systems Management Concentration

|    |     |                                                      |   |
|----|-----|------------------------------------------------------|---|
| BA | 241 | Decision Models for Health Risk Assessment . . . . . | 3 |
| BA | 244 | Survey of Health Systems Intervention . . . . .      | 3 |

Approved Elective . . . . . 3-4

**Total Required for Degree . . . . . 73-76**

**Hospitality/Tourism Concentration**

BA 252 Customer Relations . . . . . 3  
HT 102 Tourism and the Hospitality Industry . . . . . 3  
HT 104 Hospitality Supervision . . . . . 3

**Total Required for Degree . . . . . 73-75**

**International Business Concentration**

IB 101 Introduction to International Business . . . . . 3  
IB 202 International Management . . . . . 3  
Approved International Business Elective . . . . . 3

**Total Required for Degree . . . . . 73-75**

**Merchandising Concentration**

BA 252 Customer Relations . . . . . 3  
BA 253 Retailing . . . . . 3  
or BA 286 Advertising . . . . . 3  
Approved Elective . . . . . 3-4

**Total Required for Degree . . . . . 73-76**

**Real Estate Concentration**

BA 270 Real Estate Law . . . . . 3  
BA 271 Real Estate Practice . . . . . 3  
Approved Real Estate Elective . . . . . 3

**Total Required for Degree . . . . . 73-75**

**Small Business Management Concentration**

BA 252 Customer Relations . . . . . 3  
BA 286 Advertising . . . . . 3  
ENTR 101 Entrepreneurship . . . . . 6

**Total Required for Degree . . . . . 76-78**

**ELECTIVES**

AA 275 ICD-9-CM Coding . . . . . 3  
AA 276 CPT Coding . . . . . 3  
ACCT 240 Tax Accounting I . . . . . 3  
ACCT 255 Computerized Accounting . . . . . 3

|      |      |                                                                                              |     |
|------|------|----------------------------------------------------------------------------------------------|-----|
| ACCT | 260  | Cost Accounting . . . . .                                                                    | 3   |
| ACCT | 272  | Accounting Systems Design . . . . .                                                          | 3   |
| ACCT | 280  | Managerial Accounting. . . . .                                                               | 3   |
| BA   | 101  | Introduction to Quality Management (5 weeks) . . . . .                                       | 1   |
| BA   | 102  | Fundamentals of Continuous Quality Improvement (5 weeks) . . . . .                           | 1   |
| BA   | 103  | Quality Tools (5 weeks). . . . .                                                             | 1   |
| BA   | 104  | Team Building for Quality (5 weeks). . . . .                                                 | 1   |
| BA   | 105  | Re-engineering for Quality (5 weeks) . . . . .                                               | 1   |
| BA   | 106  | Quality Leadership (5 weeks) . . . . .                                                       | 1   |
| BA   | 159  | Intermediate Quickbooks (5 weeks) . . . . .                                                  | 1   |
| BA   | 215  | Money and Banking . . . . .                                                                  | 3   |
| BA   | 241  | Decision Models for Health Risk Assessment . . . . .                                         | 3   |
| BA   | 244  | Survey of Health Systems Intervention . . . . .                                              | 3   |
| BA   | 251  | Retail Merchandising . . . . .                                                               | 3   |
| BA   | 252  | Customer Relations. . . . .                                                                  | 3   |
| BA   | 253  | Retailing . . . . .                                                                          | 3   |
| BA   | 260  | Purchasing . . . . .                                                                         | 3   |
| BA   | 270  | Real Estate Law . . . . .                                                                    | 3   |
| BA   | 271  | Real Estate Practice . . . . .                                                               | 3   |
| BA   | 272  | Real Estate Appraisal . . . . .                                                              | 3   |
| BA   | 273  | Real Estate Finance . . . . .                                                                | 3   |
| BA   | 274  | Real Estate Investment . . . . .                                                             | 3   |
| BA   | 275  | Property Management . . . . .                                                                | 3   |
| BA   | 276  | NMREC Mandatory Course (5 weeks) . . . . .                                                   | 1   |
| BA   | 279  | Uniform Standards of Professional<br>Appraisal Practice (7.5 weeks) . . . . .                | 2   |
| BA   | 280  | Fair Housing Law (5 weeks) . . . . .                                                         | 1   |
| BA   | 281  | Americans with Disabilities Act & Related<br>Handicap Discrimination Law (5 weeks) . . . . . | 1   |
| BA   | 282  | Appraising the Single Family Residence. . . . .                                              | 3   |
| BA   | 283  | Rules & Regulations of the New<br>Mexico Real Estate Commission (5 weeks). . . . .           | 1   |
| BA   | 286  | Advertising . . . . .                                                                        | 3   |
| BA   | 287  | Delta Epsilon Chi Competition. . . . .                                                       | 1   |
| BA   | 289  | Strategic Planning . . . . .                                                                 | 3   |
| BA   | 296  | Business Topics . . . . .                                                                    | 1-3 |
| BA   | 298  | Internship . . . . .                                                                         | 4   |
| BA   | 299  | Cooperative Education . . . . .                                                              | 4   |
| BA   | 299A | Cooperative Education I . . . . .                                                            | 1   |
| BA   | 299B | Cooperative Education II . . . . .                                                           | 1   |
| BA   | 299C | Cooperative Education III . . . . .                                                          | 1   |
| BA   | 299D | Cooperative Education IV . . . . .                                                           | 1   |
| ENTR | 101  | Entrepreneurship . . . . .                                                                   | 6   |
| ENTR | 102  | Entrepreneurship in a Global Setting . . . . .                                               | 3   |
| HT   | 101  | Introduction to Hospitality Today . . . . .                                                  | 3   |

|      |     |                                                              |   |
|------|-----|--------------------------------------------------------------|---|
| HT   | 104 | Tourism and the Hospitality Industry . . . . .               | 3 |
| HT   | 106 | Front Office Procedures.. . . . .                            | 3 |
| HT   | 108 | Hospitality Supervision . . . . .                            | 3 |
| HT   | 121 | Hotel/Motel Organization and Administration . . . . .        | 3 |
| HT   | 124 | Managing Quality in the Hospitality Industry.. . . . .       | 3 |
| HT   | 126 | Hotel/Motel Facilities Management.. . . . .                  | 3 |
| HT   | 128 | Hotel/Motel Housekeeping Management.. . . . .                | 3 |
| HT   | 130 | Resort Management . . . . .                                  | 3 |
| HT   | 132 | Hotel/Motel Human Resources Management . . . . .             | 3 |
| HT   | 134 | Hospitality Energy and Water Management . . . . .            | 3 |
| HT   | 136 | Hospitality Industry Training . . . . .                      | 3 |
| HT   | 138 | Hospitality Industry Engineering Systems . . . . .           | 3 |
| HT   | 141 | Marketing of Hospitality Services.. . . . .                  | 3 |
| HT   | 144 | Hospitality Sales and Marketing . . . . .                    | 3 |
| HT   | 146 | Convention Management and Service . . . . .                  | 3 |
| HT   | 161 | Hotel/Motel Food and Beverage Management . . . . .           | 3 |
| HT   | 164 | Hotel/Motel Food and Beverage.. . . . .                      | 3 |
| HT   | 166 | Quality Sanitation Management . . . . .                      | 3 |
| HT   | 168 | Food and Beverage Controls . . . . .                         | 3 |
| HT   | 170 | Food Production Principles . . . . .                         | 3 |
| HT   | 172 | Hospitality Purchasing Management . . . . .                  | 3 |
| HT   | 201 | Financial Accounting for the Hospitality Industry . . . . .  | 3 |
| HT   | 204 | Managerial Accounting for the Hospitality Industry.. . . . . | 3 |
| HT   | 206 | Hospitality Industry Computer Systems . . . . .              | 3 |
| HT   | 221 | Hospitality Law . . . . .                                    | 3 |
| HT   | 224 | Hotel/Motel Law.. . . . .                                    | 3 |
| HT   | 226 | Hotel/Motel Security Management . . . . .                    | 3 |
| IB   | 101 | Introduction to International Business . . . . .             | 3 |
| IB   | 201 | International Marketing . . . . .                            | 3 |
| IB   | 202 | International Management . . . . .                           | 3 |
| IB   | 203 | International Finance and Trade.. . . . .                    | 3 |
| IB   | 205 | Fundamentals of Exporting/Importing . . . . .                | 3 |
| MMS  | 134 | WordPerfect for Windows . . . . .                            | 3 |
| MMS  | 135 | Microsoft Word for Windows . . . . .                         | 3 |
| MMS  | 151 | DOS Fundamentals (5 weeks) . . . . .                         | 1 |
| MMS  | 154 | Desktop Publishing Using Word (5 weeks) . . . . .            | 1 |
| MMS  | 156 | Office Management Software (5 weeks) . . . . .               | 1 |
| MMS  | 158 | Excel Fundamentals (5 weeks) . . . . .                       | 1 |
| MMS  | 159 | Access Fundamentals (5 weeks) . . . . .                      | 1 |
| MMS  | 255 | Desktop Publishing . . . . .                                 | 3 |
| MMS  | 257 | Presentation Graphics . . . . .                              | 3 |
| MMS  | 258 | Local Area Network (LAN) Systems Manager . . . . .           | 3 |
| FSMG | 101 | Operations Management . . . . .                              | 3 |
| SSKL | 211 | Employment Skills-General (15 hours).. . . . .               | 1 |

**BA 111                      Communications                                              2 credit hours**

Fundamentals of grammar, punctuation, oral communications and basic technical writing. (7.5 weeks)

**BA 113                      Introduction to Business                                              3 credit hours**

*(Prerequisite: RDG 099 or equivalent)* Structure of business, business activities, business opportunities and an understanding of the nature of the business world.

**BA 121                      Business English                                              3 credit hours**

*(Prerequisites: RDG 099 or equivalent and ENG 099 or equivalent)* Principles of effective written communication in the business environment. Emphasizes correct grammar, punctuation, sentence structure and vocabulary.

**BA 122                      Business Writing                                              3 credit hours**

*(Prerequisites: BA 121 and 25 wpm typing skill or permission of program director)* Compose effective business letters, memos, and reports; develop oral presentation skills.

**BA 131                      Business Interpersonal Skills                                              2 credit hours**

Build interpersonal skills appropriate for the business environment. A unit covering team building/teamwork is required. Students participate in designing course content from the following topics: time management, stress management, assertiveness, goal setting, diversity in the workplace, self-esteem, conflict resolution, problem solving, listening skills and harassment. (7.5 weeks)

**BA 133                      Principles of Management                                              3 credit hours**

*(Prerequisites: RDG 099 or equivalent, BA 113 or permission of program director)* Management functions of planning, organizing, staffing, directing and controlling, human relations, group process, problem solving, team building and leadership skills.

**BA 150                      Introduction to Computer Processing                                              4 credit hours**

*(Prerequisite: 25 wpm typing skill)* Students gain skills in using automated information systems, computer hardware, data entry and business software applications. Hands-on experience with microcomputers is provided. Course fee: \$15

**BA 157                      Computer Accounting for Small Business                                              1 credit hour**

*(Prerequisite: AA 112 or ACCT 101 or ACCT 101B or ENTR 101 or permission of program director)* Accounting software program for a small business, set up the records for a business, open accounts, enter transactions and print end-of-period reports. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**BA 159                      Intermediate Quickbooks                                              1 credit hour**

*(Prerequisite: BA 157 or permission of program director)* Use project accounting for contractors/construction, inventory management, budgeting, cash flow and management reports and transferring Quickbooks data to tax software. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

- BA 211 Business Law 3 credit hours**  
*(Prerequisites: RDG 099 or equivalent and ENG 099 or equivalent)* Basic knowledge of law including contract law, Uniform Commercial Code, negotiable instruments and alternative dispute resolutions.
- BA 215 Money and Banking 3 credit hours**  
*(Prerequisite: ACCT 102 or ACCT 102B)* History, nature and function of money, methods of institutional control and theories of monetary policy.
- BA 222 Principles of Marketing 3 credit hours**  
*(Prerequisite: BA 113 or permission of program director)* Total marketing concepts from product creation, pricing, promotion and distribution.
- BA 241 Decision Models for Health Risk Assessment 3 credit hours**  
 Students work in teams to explore healthcare as a system including technology, group processes and community involvement.
- BA 244 Survey of Health Systems Intervention 3 credit hours**  
 Historical perspective and current survey of health maintenance organizations.
- BA 251 Retail Merchandising 3 credit hours**  
*(Pre- or corequisite: BA 222 or permission of program director)* Methods and practice of retail merchandising including target market decisions, pricing, considering inventories, displaying layout and buying functions.
- BA 252 Customer Relations 3 credit hours**  
 Relationship of self to customers, problem solving and communicating with customers, understanding customers, anticipating customers' needs and offering assistance.
- BA 253 Retailing 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Overview of the retail industry including target market decisions, pricing, store locations, store organization, scheduling of work, loss prevention and safety and strategic planning.
- BA 260 Purchasing 3 credit hours**  
*(Prerequisite: ACCT 101, ACCT 101B or permission of program director)* Public and private sector purchasing, value analysis, solicitation process, negotiation techniques, vendor selection, purchasing law, transportation considerations and inventory control practices.
- BA 270 Real Estate Law 3 credit hours**  
 The fiduciary relationship between the real estate agent and the client, ownership rights, law of agency and law of contracts, This course has been certified to earn 30 hours of credit toward the New Mexico real estate license exam.

- BA 271 Real Estate Practice 3 credit hours**  
Review of general real estate practice providing basic knowledge of the real estate business. This course has been certified to earn 30 hours of credit toward the New Mexico real estate license exam.
- BA 272 Real Estate Appraisal 3 credit hours**  
(Prerequisite: BA 271 or permission of instructor or program director) Methods for estimating the value of real property that includes real estate appraisal techniques of both land and improved residential property.
- BA 273 Real Estate Finance 3 credit hours**  
(Prerequisite: BA 271) Financing real property, money markets, sources of mortgage money, financial leverage, value of existing mortgage in the current market and purchaser qualification.
- BA 274 Real Estate Investment 3 credit hours**  
(Prerequisites: BA 270, BA 271) Principles for investment decisions, assessment of property potential and an awareness of the marketplace and the needs of the public.
- BA 275 Property Management 3 credit hours**  
Residential and commercial property management, marketing of services, market analysis, record-keeping, related laws, legal documents, property maintenance, employee relations, insurance, security and administration.
- BA 276 New Mexico Real Estate Commission (NMREC) Mandatory Course 1 credit hour**  
Real estate licensees are updated about new legislation, NMREC problem areas, disciplinary hearings, rules and regulations, trust accounts, property management review, risk management, selected court cases, fiduciary responsibility, Real Estate Settlement Procedures Act, Americans with Disabilities Act and the Fair Housing Act. (5 weeks)
- BA 279 Uniform Standards of Professional Appraisal Practice 2 credit hours**  
Requirements for ethical behavior and competent performance by appraisers. (7.5 weeks)
- BA 280 Fair Housing Law 1 credit hour**  
Issues, regulations, practices and court cases related to fair housing. (5 weeks)
- BA 281 Americans with Disabilities Act and Related Handicap Discrimination Law 1 credit hour**  
Issues and guidelines affecting employment, construction and operation of business. (5 weeks)
- BA 282 Appraising the Single Family Residence 3 credit hours**  
(Prerequisite: BA 272) Techniques used to estimate the market value of single-family residential property.

- BA 283**            **Rules & Regulations of the  
New Mexico Real Estate Commission**            **1 credit hour**  
Current rules and regulations including the intent and the Real Estate Commission's interpretations. (5 weeks)
- BA 284**            **Sales**            **3 credit hours**  
(Prerequisite: RDG 099 or equivalent) Sales principles, demonstrating selling skills and promoting goods and services.
- BA 286**            **Advertising**            **3 credit hours**  
(Prerequisite: BA 222 or permission of program director) Develop an advertising plan, select and schedule media, create budgets, design and produce advertisements and evaluate advertising effectiveness.
- BA 287**            **Delta Epsilon Chi Competition**            **1 credit hour**  
Skills to compete at state and national career development conferences by using sample written tests, role-playing case problems and classroom assignments involving salesmanship, marketing, problem solving and human relations. (3 lab hours a week)
- BA 289**            **Strategic Planning**            **3 credit hours**  
Strategic planning as a tool for management to provide overall direction for organizations, interpretation of plans, gap analysis, organizational culture, value classification and strategic management in a global environment adapting to cultural differences.
- BA 296**            **Business Topics**            **1-3 credit hours**  
Current topics in business.
- BA 297**            **Special Problems**            **Variable credit hours**  
(Prerequisite: permission of program director) The student and instructor define a specific problem in the area of the student's interest and directly related to the program. The student develops and executes a solution using analytical techniques to the problem. An oral presentation may be required.
- BA 298**            **Internship**            **4 credit hours**  
(Prerequisites: ACCT 102 or ACCT 102B and permission of program director) Students work a minimum of 150 hours at business or training-related supervised work stations. Students are not paid for their work but are supervised jointly by TVI and the company. (1 theory + 9 lab hours a week)
- BA 299**            **Cooperative Education**            **4 credit hours**  
(Prerequisites: ACCT 102 or ACCT 102B and permission of program director) Students work a minimum of 150 hours at business- or training-related supervised work stations. Student trainees are paid by the cooperating firm and supervised jointly by TVI and the employer. (1 theory + 9 lab hours a week)

**BA 299A Cooperative Education I 1 credit hour**

Students employed in an on-going governmental or non-governmental cooperative program enroll in this course for the first term of employment. Students must work a minimum of 40 hours to qualify for credit. Students are paid by the employers and are supervised jointly by TVI and the employer. (3 lab hours a week)

**BA 299B Cooperative Education II 1 credit hour**

*(Prerequisite: BA 299A)* This course is a continuation of BA 299A for students in their second term of cooperative education. (3 lab hours a week)

**BA 299C Cooperative Education III 1 credit hour**

*(Prerequisite: BA 299B)* This course is a continuation of BA 299A and BA 299B for students in their third term of cooperative education. (3 lab hours a week)

**BA 299D Cooperative Education IV 1 credit hour**

*(Prerequisite: BA 299C)* This course is a continuation of BA 299A, BA 299B and BA 299C for students in their fourth term of cooperative education. (3 lab hours a week)

**SSKL 211 Employment Skills-General 1 credit hour**

Skills necessary for obtaining employment include a cover letter, resume, follow-up letter, employer expectations, interview techniques, communication with business and industry and employability and job retention skills. (15 hours)

## BUSINESS GRAPHICS AND COMMUNICATION

The Business Graphics and Communication program combines creative design, language skills and production training. Students are prepared to create documents for marketing, advertising, presentation, multimedia and print. There is a strong focus on practical production and troubleshooting techniques.

The early courses emphasize training in language skills and creativity. Training is also begun very early in drawing, creative writing and illustration.

A suggested schedule per term for the Business Graphics and Communication certificate/associate of applied science degree includes:

- Term 1: ART 121, BA 113, BA 121, BA 150
- Term 2: ACCT 101A, ART 106, BA 133, COMM 130 or COMM 221 or COMM 232 or COMM 240, ENG 101
- Term 3: BA 222, MMS 220, ENG 221, MATH 119 or MATH 120, MMS 170
- Term 4: MMS 256, MMS 280, MMS 281, MMS 282, Art Elective
- Term 5: ECON 101, MMS 257, MMS 271, Electives

*Credit Hours*

|      |      |                          |       |   |
|------|------|--------------------------|-------|---|
| ACCT | 101A | Financial Accounting IA  | ..... | 3 |
| ART  | 121  | Two Dimensional Design   | ..... | 3 |
| BA   | 113  | Introduction to Business | ..... | 3 |

|                                       |     |                                     |           |
|---------------------------------------|-----|-------------------------------------|-----------|
| BA                                    | 121 | Business English                    | 3         |
| BA                                    | 133 | Principles of Management            | 3         |
| BA                                    | 150 | Introduction to Computer Processing | 4         |
| BA                                    | 222 | Principles of Marketing             | 3         |
| MMS                                   | 170 | Introduction to Multimedia          | 3         |
| MMS                                   | 220 | Desktop Publishing on a Mac         | 3         |
| MMS                                   | 256 | Advanced Desktop Publishing         | 3         |
| MMS                                   | 257 | Presentation Graphics               | 3         |
| MMS                                   | 271 | Macromedia Director                 | 3         |
| MMS                                   | 280 | PostScript Illustration             | 3         |
| MMS                                   | 281 | Image Manipulation/Painting         | 3         |
| MMS                                   | 282 | Digital Prepress                    | 3         |
| ENG                                   | 101 | College Writing                     | 3         |
| Approved Elective                     |     |                                     | 3         |
| <b>Total Required for Certificate</b> |     |                                     | <b>51</b> |

### Arts & Sciences Courses Required for Degree

|                                  |                          |                            |              |
|----------------------------------|--------------------------|----------------------------|--------------|
| ART                              | 106                      | Basic Drawing              | 3            |
| COMM                             | 130 or 221 or 232 or 240 |                            | 3            |
| ECON                             | 101                      | Introduction to Economics  | 3            |
| ENG                              | 221                      | Creative Writing: Fiction  | 3            |
| MATH                             | 119                      | Methods of Problem Solving |              |
| or MATH                          | 120                      | Intermediate Algebra       | 4            |
| Approved Art Elective            |                          |                            | 3            |
| Approved Elective                |                          |                            | 3-4          |
| <b>Total Required for Degree</b> |                          |                            | <b>73-74</b> |

### Art Electives

|     |     |                   |   |
|-----|-----|-------------------|---|
| ART | 201 | History of Art I  | 4 |
| ART | 202 | History of Art II | 4 |
| ART | 250 | Modern Art        | 4 |

### ELECTIVES

|     |     |                               |   |
|-----|-----|-------------------------------|---|
| ART | 101 | Introduction to Art           | 3 |
| ART | 122 | Three-dimensional Design      | 3 |
| ART | 151 | Art of the American Southwest | 3 |
| BA  | 122 | Business Writing              | 3 |
| BA  | 251 | Retail Merchandising          | 3 |
| BA  | 252 | Customer Relations            | 3 |
| BA  | 253 | Retailing                     | 3 |
| BA  | 284 | Sales                         | 3 |
| BA  | 286 | Advertising                   | 3 |
| BA  | 298 | Internship                    | 4 |

|     |     |                                                      |   |
|-----|-----|------------------------------------------------------|---|
| CP  | 177 | Computer Graphics . . . . .                          | 3 |
| CP  | 178 | Computer Animation . . . . .                         | 3 |
| MMS | 154 | Desktop Publishing Using Word (5 weeks) . . . . .    | 1 |
| MMS | 156 | Office Management Software (5 weeks) . . . . .       | 1 |
| MMS | 157 | PowerPoint Fundamentals (5 weeks) . . . . .          | 1 |
| MMS | 160 | Introduction to the Internet (5 weeks) . . . . .     | 1 |
| MMS | 171 | Hypertext Markup Language (HTML) (5 weeks) . . . . . | 1 |
| MMS | 201 | Hardware/Software Administration . . . . .           | 3 |
| MMS | 270 | Macromedia Authorware . . . . .                      | 3 |

See the Accounting, Business Administration and Microcomputer Management programs for course descriptions.

## COURT REPORTING

The Court Reporting program trains qualified men and women for entry into the highly technical court reporting profession. Instruction focuses on computer-aided transcription. 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 trials, hearings and depositions. Reporters are employed in court proceedings, depositions, corporate meetings, arbitration hearings, conventions, and legislative sessions. Court reporters also provide real-time and closed-captioning services.

Any person wishing to enroll in the Court Reporting program must have completed high school or have a General Education Development (GED) high school equivalency diploma.

Students enrolled in machine shorthand courses are responsible for having a stenotype machine (manual or electric). Purchase arrangements for an educational stenotype machine are available through the TVI Bookstore. Students must own a stenotype machine prior to enrolling in CR 103, Machine Shorthand I.

AA 101 and AA 102 are prerequisites to CR 103.

CR 104 is an open-exit course; CR 210, CR 220 and CR 230 are open-entry, open-exit courses. Students may advance to the next course upon reaching the required speed level.

CR 104, CR 210, CR 220 and CR 230 may be taken on a credit/no credit basis. Students in these courses must check with the Financial Aid Office before selecting a grading option.

Students who are unable to complete the certificate program should see the program director for information regarding a departmental certificate in text processor/scopist.

One of the goals of the Court Reporting certificate and associate of applied science degree program is to prepare students to pass the New Mexico Court Reporting certification test.

To graduate from the Court Reporting program, students must pass two five-minute tests on literary material dictated at 190 words per minute with 95 percent accuracy, two five-minute tests on jury charge dictated at 200 wpm with 95 percent accuracy, and two

five-minute tests on testimony at 225 wpm with 95 percent accuracy. Students must also keyboard at the rate of 60 net wpm with no more than five errors on two five-minute timed writings from unfamiliar material. Students must also complete a Court Reporting internship with a minimum of 75 clock hours of practical experience under the supervision of a certified shorthand reporter. A minimum of 40 of those hours shall be spent in actual writing time.

A suggested schedule per term for the occupational component of the certificate/associate of applied science degree program in Court Reporting includes:

Term 1: AA 107, BA 121, BA 150, CR 103, CR 121

Term 2: BA 131, CR 104, CR 105, CR 132

Term 3: CR 210, CR 240

Term 4: CR 220, CR 250

Term 5: CR 230, CR 260, CR 298

<sup>1</sup>Required for certificate only

|                                                 |            |                                                       | <i>Credit Hours</i> |
|-------------------------------------------------|------------|-------------------------------------------------------|---------------------|
| AA                                              | 107        | Intermediate Keyboard Skill-building . . . . .        | 2                   |
| BA                                              | 121        | Business English . . . . .                            | 3                   |
| <sup>1</sup> BA                                 | 131        | Business Interpersonal Skills (7.5 weeks) . . . . .   | 2                   |
| BA                                              | 150        | Introduction to Computer Processing . . . . .         | 4                   |
| CR                                              | 103        | Machine Shorthand I . . . . .                         | 7                   |
| CR                                              | 104        | Machine Shorthand II . . . . .                        | 7                   |
| CR                                              | 105        | Keyboard Skill-building . . . . .                     | 2                   |
| CR                                              | 121        | Introduction to Court Reporting (7.5 weeks) . . . . . | 2                   |
| CR                                              | 132        | Medical Terminology/Anatomy . . . . .                 | 5                   |
| CR                                              | 210        | Machine Shorthand III . . . . .                       | 8                   |
| CR                                              | <b>220</b> | Machine Shorthand IV . . . . .                        | 8                   |
| CR                                              | <b>230</b> | Machine Shorthand V . . . . .                         | 8                   |
| CR                                              | <b>240</b> | Legal Terminology . . . . .                           | 3                   |
| CR                                              | <b>250</b> | Computer-aided Transcription . . . . .                | 3                   |
| CR                                              | <b>260</b> | Court Reporting Procedures . . . . .                  | 3                   |
| CR                                              | <b>298</b> | Internship . . . . .                                  | 2                   |
| <b>Total Required for Certificate . . . . .</b> |            |                                                       | <b>69</b>           |

### Arts & Sciences Courses Required for Degree

|                                                         |                                                                                             |              |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------|
| COMM                                                    | 130 or 221 or 232 or 240 . . . . .                                                          | 3            |
| ENG                                                     | 101 College Writing . . . . .                                                               | 3            |
| MATH                                                    | 120 Intermediate Algebra or higher<br>or biological and physical science elective . . . . . | 3-4          |
| Social Science or Behavioral Science Elective . . . . . |                                                                                             | 3            |
| Arts and Sciences Elective . . . . .                    |                                                                                             | 3            |
| <b>Total Required for Degree . . . . .</b>              |                                                                                             | <b>84-85</b> |

<sup>1</sup>Required for certificate only



**CR 123                      Punctuation for Court Reporters                      3 credit hours**

Fundamental rules for punctuating syntax, presents verbatim English as found in courtroom transcripts and modifies the rules to accommodate this English.

**CR 132                      Medical Terminology and Anatomy                      5 credit hours**

*(Prerequisite: RDG 099 or equivalent)* A study of medical terminology, using 350 Greek and Latin prefixes, suffixes, word roots, combining forms and human anatomy is presented through video and text.

**CR 210                      Machine Shorthand III                      8 credit hours**

*(Prerequisite: CR 104)* This course covers vocabulary building, machine shorthand theory, on-the-job considerations, legal procedures, speed-building using testimony, literary and jury charge materials. Open-entry, open-exit course. Students may advance to CR 220 after reaching 140 wpm literary and 150 wpm testimony. Enrollment limited to 4.5 weeks or three terms. (5 theory + 10 lab hours a week)

**CR 220                      Machine Shorthand IV                      8 credit hours**

*(Prerequisites: CR 210, CR 132)* Medical terminology and dictation, vocabulary building and speed-building are emphasized in this open-entry, open-exit course. Court Reporting students may advance to CR 230 after reaching 160 wpm literary, 170 wpm jury charge and 190 wpm testimony. Students enrolled in the stenotranscription program will enroll in CR 220 for 15 weeks. Enrollment limited to 45 weeks or three terms. (5 theory + 10 lab hours a week)

**CR 230                      Machine Shorthand V                      8 credit hours**

*(Prerequisite: CR 220)* Speed-building and vocabulary building are emphasized. Open-entry, open-exit course. Students must pass at least two 5-minute takes of literary at 190 wpm, two of jury charge at 220 wpm and two of testimony at 225 wpm with a minimum of 95% accuracy and a transcription rate of at least 20 wpm. Enrollment limited to 45 weeks or three terms. (5 theory + 10 lab hours a week)

**CR 240                      Legal Terminology                      3 credit hours**

Civil law, criminal law, the judicial system and Latin/legal terminologies. This course is occasionally offered through the Internet.

**CR 250                      Computer-aided Transcription (CAT)                      3 credit hours**

*(Prerequisites: CR 104, AA 133)* Production of transcripts on computer-aided transcription software. (2 theory + 3 lab hours a week) Course fee: \$10

**CR 251                      Stenotranscription                      3 credit hours**

*(Prerequisites: CR 104 and AA 133 or approval of program director)* Hands-on application using the computer, stenomachine and rapid-data entry software to produce a variety of medical, legal, corporate and police documents. (2 theory + 3 lab hours per week) Course fee: \$10

**CR 252            Medical/Legal Stenotranscription            2 credit hours**

*(Prerequisite: CR 251)* Students use computer-aided transcription software and stenotranscription skills to transcribe legal and medical documents, correspondence, and instruments with correct formatting, punctuation, and spacing.

**CR 253            Litigation Support            2 credit hours**

Students scan and index documents and transcripts, create and maintain a legal-specific database, and print images to CD. (7.5 weeks)

**CR 260            Court Reporting Procedures            3 credit hours**

*(Prerequisites: CR 220, CR 250)* Depositions, administering oaths, handling exhibits, storing notes and applying ethics.

**CR 270            Speed-building/Test Preparation            3 credit hours**

Students need a minimum speed of 180 wpm literary and 225 wpm testimony. Preparation course for the state certification exam. Students speed-build and take two-, three- and four-voice testimony.

**CR 296            Topics Course            1-3 credit hours**

Current topics in court reporting and stenotranscription.

**CR 297            Special Problems            Variable credit hours**

*(Prerequisite: permission of program director)* The student and instructor define a specific problem in the area of the student's interest and directly related to the program. The student develops and executes a solution using analytical techniques to the problem. An oral presentation may be required.

**CR 298            Internship            2 credit hours**

*(Prerequisites: CR 250, passage of two five-minute dictation takes at 200 wpm on testimony material and approval of program director)* Arranged by program director in student's final term. Students acquire a minimum of 75 clock hours of practical experience under the supervision of a certified shorthand reporter; a minimum of 40 hours spent in actual writing time. Intern is required to record and transcribe a 40-page salable transcript.

**CR 298A            Internship            2 credit hours**

*(Prerequisite: CR 251)* Arranged by program director in student's final term. Students acquire a minimum of 75 supervised clock hours producing saleable transcripts for a medical office, hospital, legal office, corporate word processing department, police department or publishing firm.

**CR 299            Cooperative Education            4 credit hours**

*(Prerequisite: CR 210)* Students work a minimum of 150 hours in a paid training-related position. Student trainees are paid by the cooperating firm and are supervised jointly by TVI and the employer. (1 theory + 9 lab hours a week)



- Term 2: BA 122 or ENG 101, BA 133, HT 101, HT 106, HT 108  
 Term 3: BA 222, HT 124, HT 128, HT 132, HT 161  
 Term 4: HT 206, HT 221, Hospitality and Tourism electives (6-8 credits)

*Credit Hours*

|                                                 |      |                                                   |     |
|-------------------------------------------------|------|---------------------------------------------------|-----|
| ACCT                                            | 101A | Financial Accounting 101A.....                    | 3   |
| BA                                              | 113  | Introduction to Business.....                     | 3   |
| BA                                              | 121  | Business English.....                             | 3   |
| *BA                                             | 122  | Business Writing.....                             |     |
| or *ENG                                         | 101  | College Writing.....                              | 3   |
| BA                                              | 131  | Business Interpersonal Skills (7.5 weeks).....    | 2   |
| BA                                              | 133  | Principles of Management.....                     | 3   |
| BA                                              | 150  | Introduction to Computer Processing.....          | 4   |
| BA                                              | 222  | Principles of Marketing.....                      | 3   |
| HT                                              | 101  | Introduction to Hospitality Industry.....         | 3   |
| HT                                              | 106  | Front Office Procedures.....                      | 3   |
| HT                                              | 108  | Hospitality Supervision.....                      | 3   |
| HT                                              | 124  | Managing Quality in the Hospitality Industry..... | 3   |
| HT                                              | 128  | Hotel/Motel Housekeeping Management.....          | 3   |
| HT                                              | 132  | Hotel/Motel Human Resources Management.....       | 3   |
| HT                                              | 161  | Hotel/Motel Food Beverage Management.....         | 3   |
| HT                                              | 206  | Hospitality Industry Computer Systems.....        | 3   |
| HT                                              | 221  | Hospitality Law.....                              | 3   |
| Hospitality and Tourism Approved Electives..... |      |                                                   | 6-8 |

**Total Required for Certificate..... 57-59**

\*One course required for certificate; both required for associate of applied science degree.

**Arts & Sciences Courses Required for Degree**

|      |                                               |   |
|------|-----------------------------------------------|---|
| COMM | 130 or 221 or 232 or 240.....                 | 3 |
| ECON | 200 Macroeconomics or higher.....             | 3 |
| ENG  | 101 College Writing.....                      | 3 |
| MATH | 119 Methods of Problem Solving or higher..... | 3 |
| PHIL | 245B Business Ethics.....                     | 3 |

**Subtotal Required for Degree . . . . . 72-74**

**APPROVED ELECTIVES\***

|    |     |                                                  |   |
|----|-----|--------------------------------------------------|---|
| BA | 252 | Customer Relations.....                          | 3 |
| HT | 121 | Hotel/Motel Organization and Administration..... | 3 |
| HT | 126 | Hotel/Motel Facilities Management.....           | 3 |
| HT | 130 | Resort Management.....                           | 3 |
| HT | 134 | Hospitality Energy and Water Management.....     | 3 |
| HT | 136 | Hospitality Industry Training.....               | 3 |
| HT | 138 | Hospitality Industry Engineering System.....     | 3 |

|                            |     |                                                          |     |
|----------------------------|-----|----------------------------------------------------------|-----|
| HT                         | 141 | Marketing of Hospitality Services . . . . .              | 3   |
| HT                         | 144 | Hospitality and Sales Marketing . . . . .                | 3   |
| HT                         | 146 | Convention Management and Service . . . . .              | 3   |
| HT                         | 164 | Hotel/Motel Food and Beverage . . . . .                  | 3   |
| HT                         | 166 | Quality Sanitation Management . . . . .                  | 3   |
| HT                         | 168 | Food and Beverage Controls . . . . .                     | 3   |
| HT                         | 170 | Food Production Principles . . . . .                     | 3   |
| HT                         | 172 | Hospitality Purchasing Management . . . . .              | 3   |
| HT                         | 201 | Financial Accounting for Hospitality Industry . . . . .  | 3   |
| HT                         | 204 | Managerial Accounting for Hospitality Industry . . . . . | 3   |
| HT                         | 224 | Hotel/Motel Law . . . . .                                | 3   |
| HT                         | 226 | Hotel/Motel Security Management . . . . .                | 3   |
| HT                         | 296 | Topics Course . . . . .                                  | 1-3 |
| HT                         | 298 | Internship . . . . .                                     | 4   |
| HT                         | 299 | Cooperative Education . . . . .                          | 4   |
| IB                         | 101 | Introduction to International Business . . . . .         | 3   |
| Computer Courses . . . . . |     |                                                          | 3-4 |

†Not all elective courses are offered every term.

**HT 101 Introduction to Hospitality and Tourism Today 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Organization and structure of hotels, restaurants and clubs, business ethics, franchising, management contracts and areas of management responsibility. Course equivalency AH&MA EI 103.

**HT 104 Tourism and the Hospitality Industry 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* How and why people travel, how travel acts to satisfy needs and wants and how marketing efforts can influence travel decisions. Course equivalency AH&MA EI 321.

**HT 106 Front Office Procedures 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Management concepts of front office functions and how front office activities affect other departments. The computer is used throughout every phase of the guest cycle. Course equivalency AH&MA EI 333.

**HT 108 Hospitality Supervision 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Managing people from a supervisor viewpoint, controlling labor costs, time management, increasing productivity and managing change. Course equivalency AH&MA EI 251.

**HT 121 Hotel/Motel Organization and Administration 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Management functions and responsibilities in hotel/motel administration, organization, communications, accounting, marketing and human relations. Course equivalency AH&MA EI 207.

- HT 124**            **Managing Quality in the Hospitality Industry**            **3 credit hours**  
*(Prerequisite RDG 099 or equivalent)* Quality concepts and tools within the hospitality industry. High-performance team building, strategic career plans and managing organizational change. Course equivalency AH&MA EI 303.
- HT 126**            **Hotel/Motel Facilities Management**            **3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Physical plant management of a hotel or restaurant that includes the engineering and maintenance department. Course equivalency AH&MA EI 280.
- HT 128**            **Hotel/Motel Housekeeping Management**            **3 credit hours**  
*(Prerequisite- RDG 099 or equivalent)* Systematic approach to managing housekeeping operations in the hospitality industry. Course equivalency AH&MA EI 339.
- HT 130**            **Resort Management**            **3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Principles and practices for successful resort management, resort history, planning and development, major recreational activities, food and beverage, housekeeping and risk management. Course equivalency AH&MA EI 424.
- HT 132**            **Hotel/Motel Human Resources Management**            **3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* A systematic approach to human resources management in the hospitality industry, analyze contemporary issues, practices, and trends within the hospitality industry. Course equivalency AH&MA EI 357.
- HT 134**            **Hospitality Energy and Water Management**            **3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Energy and water problems facing the hospitality industry and the development and implementation of an energy and water management program. Course equivalency AH&MA EI 383.
- HT 136**            **Hospitality Industry Training**            **3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Roles of supervision and training for the tourism and hospitality industry. Development of competent staff. Various types of training and learning techniques are emphasized. Course equivalency AH&MA EI 355.
- HT 138**            **Hospitality Industry Engineering Systems**            **3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Managerial and technical functioning of the engineering/maintenance departments and the knowledge needed by managers at all levels to make appropriate and cost effective decisions. Course equivalency AH&MA EI 488.
- HT 141**            **Marketing of Hospitality Services**            **3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Develop, implement and evaluate a marketing plan to identify and reach prospective customers using marketing tactics specific to hospitality services. Course equivalency AH&MA EI 371.

- HT 144 Hospitality Sales and Marketing 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Marketing within the tourism and hospitality industry. Course includes target markets, marketing plans, advertising and promotion, and identification of emerging trends in consumer preferences and tastes. Course equivalency AH&MA EI 4735.
- HT 146 Convention Management and Service 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Convention and group business market, marketing and sales strategies and techniques. Course equivalency AH&MA EI 478.
- HT 161 Hotel/Motel Food and Beverage Management 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Challenges and responsibilities involved in managing a food and beverage operation. Course equivalency AH&MA EI 240.
- HT 164 Hotel/Motel Food and Beverage 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Management of food and beverage service outlets, cafeterias, coffee shops, room service, banquet areas, dining rooms and basic service principles with emphasis on the special needs of guests. Course equivalency AH&MA EI 348.
- HT 166 Quality Sanitation Management 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Sanitation management and risk reduction techniques. Emphasis on quality sanitation and cost-control techniques, compliance strategies and sanitation control points. Course equivalency AH&MA EI 244.
- HT 168 Food and Beverage Controls 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Process of resource control to reduce costs in food and beverage operations. Maximizing revenue and profit levels, effective budgeting and staffing and satisfying the demands of guests. Course equivalency AH&MA EI 4645.
- HT 170 Food Production Principles 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Helps students master quality food production and standard recipes. Topics include creative food production techniques, baking, sanitation and effective food presentation. Course equivalency AH&MA EI 345.
- HT 172 Hospitality Purchasing Management 3 credit hours**  
*(Prerequisite: RDG 099 or equivalent)* Development and implementation of an effective purchasing program involving issues such as supplier relations, supplier selection, negotiation and evaluation. Course equivalency AH&MA EI 446.
- HT 201 Financial Accounting for the Hospitality Industry 3 credit hours**  
*(Prerequisite: ACCT 101A or permission of program director)* A complete review of the fundamentals of financial accounting as it relates to tourism and hospitality. Techniques include projections for revenues, expenses and net income, control of inventory and cash flow and analysis and interpretation of financial statements. Course equivalency AH&MA EI 263.

- HT 204                    Managerial Accounting for the Hospitality Industry 3 credit hours**  
*(Prerequisite: ACCT 101A or permission of program director)* Skills necessary to be a decision-maker regarding financial information in the tourism and hospitality industry. Topics include on-target budgets, control of cash flow projecting profit goals and creating a uniform system of accounts. Course equivalency AH&MA EI 462.
- HT 206                    Hospitality Industry Computer Systems                    3 credit hours**  
 Educates students in high-technology skills required in the tourism and hospitality industry. Reservations systems, room management and guest accounting, property management systems interfaces, food and beverage applications and management of information systems. Course equivalency AH&MA EI 4695.
- HT 221                    Hospitality Law                    3 credit hours**  
 Educates students in the various legal considerations facing the tourism and hospitality industry. Topics of study include contractual obligations, torts, labor law, ADA and privacy issues. Course equivalency AH&MA EI 390.
- HT 224                    Hotel/Motel Law                    3 credit hours**  
 Legal problems associated with the hospitality industry and how important legal considerations can affect the industry. Course equivalency AH&MA EI 391.
- HT 226                    Hotel/Motel Security Management                    3 credit hours**  
 Security program, security staffing, responsibilities in guest and asset protection, the accounting function and internal control, computer security and emergency procedures. Course equivalency AH&MA EI 386.
- HT 296                    Topics Course                    1-3 credit hours**  
 Current topics in hospitality and tourism.
- HT 297                    Special Problems                    Variable credit hours**  
*(Prerequisite: permission of program director)* The student and instructor define a specific problem in the area of the student's interest and directly related to the program. The student develops and executes a solution using analytical techniques to the problem. An oral presentation may be required.
- HT 298                    Internship                    4 credit hours**  
*(Prerequisites: ACCT 101A and permission of program director)* Students work a minimum of 150 hours at business or training-related supervised work stations. Students are not paid for their work but are supervised jointly by TVI and the company. (1 theory + 9 lab hours a week)
- HT 299                    Cooperative Education                    4 credit hours**  
*(Prerequisites: ACCT 101A and permission of program director)* Students work a minimum of 150 hours at business or training-related supervised work stations. Student trainees are paid by the cooperating firm and supervised jointly by TVI and the employer. (1 theory

## INTERNATIONAL BUSINESS

The International Business program combines general business skills with contemporary international business skills. Students are prepared for the constantly changing international business environment. Graduates of this program should be able to work effectively in firms and government agencies whose operations center around international trade and to engage in international entrepreneurial activities.

The program provides a foundation in written and verbal communications, accounting principles, basic computer skills and international business.

A suggested schedule per term for the occupational component of the certificate/associate of applied science degree in International Business includes:

Term 1: ACCT 101, ACCT 111, BA 121, IB 101, foreign language

Term 2: ACCT 102, BA 150, ENTR 102, GEOG 102, IB 201, foreign language

Term 3: GEOG 201, IB 202, IB 203, IB 205, foreign language

*Credit Hours*

|                                       |               |                                        |              |
|---------------------------------------|---------------|----------------------------------------|--------------|
| ACCT                                  | 101           | Financial Accounting I                 |              |
| or ACCT                               | 101A and 101B |                                        | 6            |
| ACCT                                  | 102           | Financial Accounting II                |              |
| or ACCT                               | 102A and 102B |                                        | 6            |
| ACCT                                  | 111           | Business Math                          | 3            |
| BA                                    | 121           | Business English                       | 3            |
| BA                                    | 150           | Introduction to Computer Processing    | 4            |
| ENTR                                  | 102           | Entrepreneurship in a Global Setting   | 3            |
| GEOG                                  | 102           | Human Geography                        |              |
| or COMM                               | 291           | Intercultural Communication Studies    | 3            |
| GEOG                                  | 201           | World Regional Geography               | 3            |
| IB                                    | 101           | Introduction to International Business | 3            |
| IB                                    | 201           | International Marketing                | 3            |
| IB                                    | 202           | International Management               | 3            |
| IB                                    | 203           | International Finance and Trade        | 3            |
| IB                                    | 205           | Fundamentals of Exporting/Importing    | 3            |
| Foreign Language*                     |               |                                        | 9-12         |
| <b>Total Required for Certificate</b> |               |                                        | <b>55-58</b> |

\*Various languages are acceptable.

### Arts & Sciences Courses Required for Degree

|      |     |                            |   |
|------|-----|----------------------------|---|
| ENG  | 101 | College Writing            | 3 |
| ENG  | 119 | Technical Writing          | 3 |
| MATH | 119 | Methods of Problem Solving | 3 |

|                                            |                                      |              |
|--------------------------------------------|--------------------------------------|--------------|
| or MATH 120                                | Intermediate Algebra . . . . .       | 4            |
| MATH 145                                   | Probability and Statistics . . . . . | 3            |
| PHIL 245B                                  | Business Ethics . . . . .            | 3            |
| <b>Total Required for Degree . . . . .</b> |                                      | <b>70-74</b> |

### Optional Courses<sup>#</sup>

|        |                                 |   |
|--------|---------------------------------|---|
| BA 211 | Business Law . . . . .          | 3 |
| BA 299 | Cooperative Education . . . . . | 4 |

<sup>#</sup>May be taken at any time when prerequisites are met.

**IB 101 Introduction to International Business 3 credit hours**

*(Prerequisite: RDG 099 or equivalent)* Objectives, opportunities and challenges facing those who engage in business in foreign countries, foreign organizations, cultural dynamics, trade channels, the legal environment and political considerations.

**IB 201 International Marketing 3 credit hours**

*(Prerequisite: RDG 099 or equivalent)* A conceptual framework for analyzing marketing opportunities abroad and development and implementation of marketing mixes in different cultures and nations.

**IB 202 International Management 3 credit hours**

*(Prerequisite: RDG 099 or equivalent)* Management practices within diverse international operations and understanding how to conduct business with people of different cultures.

**IB 203 International Finance and Trade 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, ACCT 101 and ACCT 102)* Overview of international finance with emphasis on the multinational corporation, foreign exchange risk management, investment analysis, capital asset management, working capital management, comparative advantage, trade restrictions, and a global overview of demographic, technical, social, political and business relationships.

**IB 205 Fundamentals of Exporting/Importing 3 credit hours**

*(Prerequisite: RDG 099 or equivalent)* Forms, country regulations, methods of shipment, rates, documents, quotations, orders, banking, shipping and customs are covered.

# JUDICIAL STUDIES

The Judicial Studies certificate program provides educational and professional development courses for court personnel and individuals interested in a career with New Mexico courts.

The program familiarizes students with the operations of the New Mexico municipal, magistrate, metropolitan, district, appellate and supreme courts, as well as federal and tribal courts. Ethical issues are also addressed. Students are introduced to substantive and procedural law, basic legal skills, fundamental legal theory and legal analysis skills.

To earn a certificate in Judicial Studies, students must complete core courses in computer literacy, introduction to the judicial system, interpersonal communication, business communication, basic English and basic math and an internship. In addition, students are required to complete three credits of elective coursework in each of the following categories: legal, government and cultural, and management. Not all elective courses are offered each term.

A suggested schedule per term for the certificate in Judicial Studies includes:

- Term 1: BA 150, COMM 221 or COMM 225, ENG 101, JUD 101, JUD 102, elective  
 Term 2: ACCT 111 or MATH 119 or MATH 120, BA 121 or COMM 232, two electives, JUD 298 or JUD 299

|                           |                                                           | <i>Credit Hours</i> |
|---------------------------|-----------------------------------------------------------|---------------------|
| ACCT 111                  | Business Math . . . . .                                   | 3                   |
| or MATH 119               | Methods of Problem Solving . . . . .                      | 4                   |
| or MATH 120               | Intermediate Algebra (or higher) . . . . .                | 3-4                 |
| BA 121                    | Business English                                          |                     |
| or COMM 232               | Business and Professional Communication Studies . . . . . | 3                   |
| COMM 221                  | Interpersonal Communication Studies                       |                     |
| or COMM 225               | Small Group Communication Studies . . . . .               | 3                   |
| BA 150                    | Introduction to Computer Processing . . . . .             | 4                   |
| ENG 101                   | College Writing . . . . .                                 | 3                   |
| JUD 101                   | Introduction to Judicial Studies . . . . .                | 3                   |
| JUD 102                   | Introduction to Court Operations and Ethics . . . . .     | 1                   |
| JUD 298                   | Internship                                                |                     |
| or JUD 299                | Cooperative Education . . . . .                           | 4                   |
| Electives . . . . .       |                                                           | 9                   |
| <b>Subtotal . . . . .</b> |                                                           | <b>33-34</b>        |

Students complete three credits from each of the following three categories:

## Legal Electives

|             |                                  |   |
|-------------|----------------------------------|---|
| BA 211      | Business Law                     |   |
| or LAS 102  | Business Organizations . . . . . | 3 |
| CJ 107      | Criminal Procedure . . . . .     | 3 |
| or *LAS 206 | Criminal Litigation . . . . .    | 3 |

|      |     |                                                   |   |
|------|-----|---------------------------------------------------|---|
| LAS  | 101 | Introduction to Legal Assistant Studies . . . . . | 3 |
| *LAS | 124 | Legal Research and Writing I . . . . .            | 3 |
| *LAS | 201 | Contract Law . . . . .                            | 3 |
| *LAS | 203 | Civil Litigation . . . . .                        | 3 |
| SOC  | 111 | Criminal Justice System . . . . .                 | 3 |
| *SOC | 212 | Juvenile Delinquency . . . . .                    | 3 |

### Government and Cultural Electives

|      |     |                                                   |     |
|------|-----|---------------------------------------------------|-----|
| COMM | 291 | Intercultural Communication Studies . . . . .     | 3   |
| CST  | 250 | Introduction to Native American Studies . . . . . | 3   |
| CST  | 296 | Topics in Cultural Studies . . . . .              | 1-3 |
| HIST | 260 | History of New Mexico . . . . .                   | 3   |
| PSCI | 200 | U.S. Politics . . . . .                           | 3   |
| PSCI | 210 | State and Local Politics . . . . .                | 3   |

### Management Electives

|       |     |                                                           |     |
|-------|-----|-----------------------------------------------------------|-----|
| AA    | 171 | Working with the Challenging Customer (5 weeks) . . . . . | 1   |
| *ACCT | 270 | Governmental Accounting . . . . .                         | 3   |
| BA    | 131 | Business Interpersonal Skills (7.5 weeks) . . . . .       | 2   |
| BA    | 133 | Principles of Management . . . . .                        | 3   |
| *LAS  | 236 | Employment Discrimination Law . . . . .                   | 3   |
| *PSY  | 271 | Social Psychology . . . . .                               | 3   |
| SPAN  | 296 | Topics in Spanish . . . . .                               | 1-3 |

\*Due to prerequisites, prior approval of appropriate program director is required.

#Prerequisites must be met.

#### **JUD 101 Introduction to Judicial Studies 3 credit hours**

*(Prerequisites: ENG 099 or equivalent, RDG 099 or equivalent or approval of program director)* Designed for court personnel. Presents an overview of the New Mexico judiciaries. Includes tracking of a civil and criminal case in each court. Familiarizes the student with the definition and use of legal terms.

#### **JUD 102 Introduction to Court Operations and Ethics 1 credit hour**

*(Prerequisites: ENG 099 or equivalent, RDG 099 or equivalent or approval of program director)* Presented jointly by Judicial Education Center and TVI faculty. Focuses on ethical and specific court operation issues. Composed of seminars offered throughout the state. Open entry and open exit. Training may be provided to individuals other than court employees; those individuals should contact Judicial Education Center to arrange payment of fees.

#### **JUD 296 Topics Course 1-3 credit hours**

Current topics in judicial studies.

#### **JUD 297 Special Problems Variable credit hours**

*(Prerequisite: permission of program director)* The student and instructor define a specific

problem in the area of the student's interest and directly related to the program. The student develops and executes a solution using analytical techniques to the problem. An oral presentation may be required.

**JUD 298 Internship 4 credit hours**  
*(Prerequisites: JUD 101, JUD 102, COMM 221 or COMM 225, BA 150, ENG 101, elective and approval of program director)* Students work a minimum of 150 hours at court sites. The student is jointly supervised by TVI and the employer.

**JUD 299 Cooperative Education 4 credit hours**  
*(Prerequisites: JUD 101, JUD 102, COMM 221 or COMM 225, BA 150, ENG 101, elective and approval of program director)* Students work a minimum of 150 hours at court sites. The student is paid by the court and is jointly supervised by TVI and the employer.

## LEGAL ASSISTANT STUDIES

The Legal Assistant Studies program trains qualified men and women for entry into the legal profession. Legal assistants are skilled professionals who perform substantive legal tasks under the supervision of a licensed attorney. Responsibilities include interviewing and assisting clients and witnesses, investigation, data analysis, drafting legal documents and correspondence, research, litigation support and case management.

Employment opportunities include placement in law firms, corporate legal departments, legal aid offices, public agencies, insurance companies and other commercial firms.

Students are presented 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, legal analytical skills, practice skills and the professional responsibilities of the legal assistant. The ethical issues inherent in the practice of the profession are stressed.

A suggested schedule per term for the associate of applied science degree program in Legal Assistant Studies includes:

- Term 1: LAS 101, LAS 102, LAS 123, ENG 101
- Term 2: LAS 111, LAS 124, ENG 102, MMS 134 or MMS 135, PSY 105
- Term 3: LAS 201, LAS 203 or LAS 206, LAS 204, PHIL 156, MATH 119
- Term 4: LAS 224, LAS 230 or LAS 243, COMM 221 or COMM 225 or COMM 240, 3-credit elective course
- Term 5: LAS 221, LAS 223 or LAS 225 or LAS 294, LAS 231, LAS 298 or LAS 299 or COMM 225 or COMM 240, 3-credit elective course

*Credit Hours*

|             |                                            |   |
|-------------|--------------------------------------------|---|
| COMM 221    | Interpersonal Communication Studies        |   |
| or COMM 225 | Small-Group Communication Studies          |   |
| or COMM 240 | Organizational Communication Studies ..... | 3 |
| MMS 134     | WordPerfect for Windows                    |   |
| or MMS 135  | Microsoft Word for Windows .....           | 3 |

|                                     |     |                                                       |           |
|-------------------------------------|-----|-------------------------------------------------------|-----------|
| ENG                                 | 101 | College Writing.....                                  | 3         |
| ENG                                 | 102 | Analytic and Argumentative Writing .....              | 3         |
| LAS                                 | 101 | Introduction to Legal Assistant Studies.....          | 3         |
| LAS                                 | 102 | Business Organizations .....                          | 3         |
| LAS                                 | 111 | American Law and Ethics .....                         | 3         |
| LAS                                 | 123 | Torts .....                                           | 3         |
| LAS                                 | 124 | Legal Research and Writing I.....                     | 3         |
| LAS                                 | 201 | Contract Law .....                                    | 3         |
| LAS                                 | 203 | Civil Litigation .....                                | 3         |
| or LAS                              | 206 | Criminal Litigation .....                             | 3         |
| LAS                                 | 204 | Legal Research and Writing II.....                    | 3         |
| LAS                                 | 221 | Wills, Probate and Estate Planning.....               | 3         |
| LAS                                 | 223 | Domestic Relations.....                               | 3         |
| or LAS                              | 225 | Constitutional Law.....                               | 3         |
| or LAS                              | 294 | Mediation .....                                       | 3         |
| LAS                                 | 224 | Evidence .....                                        | 3         |
| LAS                                 | 230 | Civil Litigation II.....                              | 3         |
| or LAS                              | 243 | Criminal Litigation II.....                           | 3         |
| LAS                                 | 231 | Computers in Law Practice.....                        | 3         |
| LAS                                 | 298 | Internship.....                                       | 3         |
| or LAS                              | 299 | Cooperative Education .....                           | 4         |
| LAS elective (see list below) ..... |     |                                                       | 3         |
| MATH                                | 119 | Methods of Problem Solving or higher math course..... | 4         |
| PHIL                                | 156 | Logic and Critical Thinking .....                     | 3         |
| PSY                                 | 105 | Introduction to Psychology.....                       | 3         |
| <b>Total .....</b>                  |     |                                                       | <b>68</b> |

### ELECTIVES

|          |                           |                                                   |   |
|----------|---------------------------|---------------------------------------------------|---|
| *ACCT    | 101                       | Financial Accounting I.....                       | 6 |
| or *ACCT | 101A and *ACCT 101B ..... |                                                   | 6 |
| JUD      | 101                       | Introduction to Judicial Studies .....            | 3 |
| JUD      | 102                       | Introduction to Court Operations and Ethics ..... | 1 |
| MMS      | 151                       | DOS Fundamentals (5 weeks).....                   | 1 |
| MMS      | 154                       | Desktop Publishing Using Word (5 weeks) .....     | 1 |
| MMS      | 156                       | Office Management Software (5 weeks).....         | 1 |
| MMS      | 158                       | Excel Fundamentals (5 weeks) .....                | 1 |
| MMS      | 159                       | Access Fundamentals (5 weeks) .....               | 1 |
| MMS      | 160                       | Introduction to Internet (5 weeks) .....          | 1 |
| MMS      | 257                       | Presentation Graphics .....                       | 3 |
| LAS      | 211                       | Real Estate Law for Legal Assistants .....        | 3 |
| LAS      | 223                       | Domestic Relations .....                          | 3 |
| LAS      | 225                       | Constitutional Law .....                          | 3 |
| LAS      | 232                       | Personal Injury Law .....                         | 3 |
| LAS      | 233                       | Law Office Management .....                       | 3 |

|      |     |                                                |   |
|------|-----|------------------------------------------------|---|
| LAS  | 234 | Administrative Law . . . . .                   | 3 |
| LAS  | 236 | Employment Discrimination Law . . . . .        | 3 |
| LAS  | 242 | Native American Law . . . . .                  | 3 |
| LAS  | 244 | Social Security Law (5 weeks) . . . . .        | 1 |
| LAS  | 245 | Bankruptcy Law (5 weeks) . . . . .             | 1 |
| LAS  | 294 | Mediation . . . . .                            | 3 |
| LAS  | 295 | Public Defender . . . . .                      | 3 |
| LAS  | 296 | Topics Course . . . . .                        | 3 |
| SSKL | 211 | Employment Skills-General (15 hours) . . . . . | 1 |

\*Pre- or corequisite: ACCT 111 or higher math or permission of the program director

**LAS 101 Introduction to Legal Assistant Studies 3 credit hours**

*(Prerequisites: ENG 100 or equivalent, RDG 100 or equivalent or approval of program director; Recommended prerequisite: BA 150)* Definition and role of the legal assistant, ethical responsibilities, human relations, the legal system, legal research and analysis, the process of litigation, technology in the law and topics in substantive law.

**LAS 102 Business Organizations 3 credit hours**

*(Prerequisites: ENG 100 or equivalent, RDG 100 or equivalent or approval of program director; Recommended prerequisite: BA 150)* Various types of business entities including sole proprietorships, partnerships and corporations, agency principles, franchising and regulatory requirements.

**LAS 111 American Law and Ethics 3 credit hours**

*(Prerequisites: ENG 101, LAS 101, LAS 102, LAS 123)* Origins, nature, history and structure of the American judicial system, principles of federalism under the Constitution and rules of professional conduct for lawyers.

**LAS 123 Torts 3 credit hours**

*(Prerequisites: ENG 100 or equivalent, RDG 100 or equivalent or approval of program director; Recommended prerequisite: BA 150)* Tort law, concentrating on negligence, products liability, non-physical injuries and their remedies and defenses. Students are given an overview of the trial process and complete a project designed to develop practice skills.

**LAS 124 Legal Research and Writing I 3 credit hours**

*(Prerequisites: ENG 101, LAS 101, LAS 102, LAS 123)* Principles and skills of writing case briefs and legal memoranda, with a focus on basic legal research sources and techniques, including Westlaw and other computer-assisted legal research. Significant time is spent at the UNM law library.

**LAS 201 Contract Law 3 credit hours**

*(Prerequisites: MMS 134 or MMS 135, ENG 102, LAS 111, LAS 124)* Introduction to the law of contracts, rights and responsibilities, consideration, types of contracts, remedies and assignments and the study, analysis and application of cases. Students draft a simple



- LAS 231            Computers in Law Practice            3 credit hours**  
*(Prerequisites: BA 150, MMS 134 or MMS 135, LAS 224, LAS 230 or LAS 243)* Concepts and applications of computers in the areas of data organization, analysis and retrieval, legal forms, calendar and docket control, reports and searches. (2 theory + 3 lab hours a week) Course fee: \$15
- LAS 232            Personal Injury Law            3 credit hours**  
*(Prerequisites: LAS 201, LAS 203 or LAS 206, LAS 204, or approval of program director)* Medical aspects and documentation of personal injuries in tort, workers' compensation and Social Security disability law.
- LAS 233            Law Office Management            3 credit hours**  
*(Prerequisites: LAS 201, LAS 203 or LAS 206, LAS 204, or approval of program director)* Prepares students to coordinate and oversee the administrative needs of a small to medium firm and includes managerial techniques, law office systems, revenue tracking, personnel management, crisis resolution and ethical requirements.
- LAS 234            Administrative Law            3 credit hours**  
*(Prerequisites: LAS 201, LAS 203 or LAS 206, LAS 204, or approval of program director)* Policies, practices and procedures of governmental agencies and state and local administrations.
- LAS 236            Employment Discrimination Law            3 credit hours**  
*(Prerequisites: LAS 201, LAS 203 or LAS 206, LAS 204, or approval of program director)* History of discrimination law and current federal protections, the principle of equal treatment, litigation involving unequal treatment, seniority, sexual and racial harassment, pay equity, labor relations and remedies.
- LAS 242            Native American Law            3 credit hours**  
*(Prerequisites: LAS 201, LAS 203 or LAS 206, LAS 204, or approval of program director)* Basic Native American law with the primary purpose of preparing students to work in private law firms that specialize in Native American law and in tribal courts and agencies.
- LAS 243            Criminal Litigation II            3 credit hours**  
*(Prerequisites: LAS 201, LAS 203 or LAS 206, LAS 204, or approval of program director)* Students participate in a hypothetical case, evidence rules, concepts and objections.
- LAS 244            Social Security Law            1 credit hour**  
*(Prerequisites: LAS 201, LAS 203 or LAS 206, LAS 204, or approval of program director)* Representing clients through the Social Security administrative process, disability evaluation, procedural issues and regulations, federal law and medical terminology. (5 weeks)
- LAS 245            Bankruptcy Law            1 credit hour**  
*(Prerequisites: LAS 201, LAS 203 or LAS 206, LAS 204, or approval of program director)* Introduction to bankruptcy practice, Bankruptcy Code and Rules of Bankruptcy Proce-



# MICROCOMPUTER MANAGEMENT

The Microcomputer Management program combines microcomputer concepts, computer applications, accounting skills and problem solving in a business environment.

The associate of applied science degree may be transferred to the University of New Mexico toward a bachelor's degree in Organizational Learning and Instructional Technology.

A suggested schedule per term for the occupational component of the certificate/associate of applied science degree program in Microcomputer Management includes:

- Term 1: ACCT 101, ACCT 111, BA 121, BA 150
- Term 2: Microcomputer Specialist: ACCT 102, BA 111, MMS 134 or MMS 135, MMS 150, MMS 151, MMS 160, MMS 162, MMS 257  
 Network Specialist: ACCT 102, BA 111, BA 113, MMS 134 or MMS 135, MMS 150, MMS 151, MMS 160, MMS 162  
 Multimedia Specialist: BA 111, BA 113, MMS 134 or MMS 135, MMS 150, MMS 160, MMS 171, MMS 170, MMS 257
- Term 3: Microcomputer Specialist: ACCT 254, BA 113, BA 157, BA 159, MMS 156, MMS 161, MMS 164, MMS 171, MMS 258 or MMS 264, MMS 201  
 Network Specialist: ACCT 254, CP 213, MMS 157, MMS 164, MMS 201, MMS 258, MMS 264  
 Multimedia Specialist: BA 133, MMS 172, MMS 173, MMS 174, MMS 201, MMS 255, MMS 270, elective
- Term 4: Microcomputer Specialist: BA 133, CP 213, MMS 261, elective  
 Network Specialist: BA 133, MMS 261, MMS 262, network elective  
 Multimedia Specialist: MMS 271, MMS 272, elective

## *Credit Hours*

|                 |                                     |              |
|-----------------|-------------------------------------|--------------|
| ACCT 101        | Financial Accounting I              |              |
| or ACCT 101A    | and ACCT 101B                       | 6            |
| ACCT 111        | Business Math                       | 3            |
| BA 111          | Communications (7.5 weeks)          | 2            |
| BA 113          | Introduction to Business            | 3            |
| BA 121          | Business English                    | 3            |
| BA 133          | Principles of Management            | 3            |
| BA 150          | Introduction to Computer Processing | 4            |
| MMS 134         | WordPerfect for Windows             |              |
| or MMS 135      | Microsoft Word for Windows          | 3            |
| MMS 150         | Microsoft Windows (5 weeks)         | 1            |
| MMS 160         | Introduction to Internet (5 weeks)  | 1            |
| MMS 201         | Hardware/Software Administration    | 3            |
| <b>Subtotal</b> |                                     | <b>30-32</b> |

## CONCENTRATIONS FOR DEGREE OR CERTIFICATE

(One Concentration Required)

### Microcomputer Specialist Concentration

|                                       |               |                                                  |              |
|---------------------------------------|---------------|--------------------------------------------------|--------------|
| ACCT                                  | 102           | Financial Accounting II                          |              |
| or ACCT                               | 102A and ACCT | 102B                                             | 6            |
| ACCT                                  | 254           | Electronics Spreadsheets                         | 3            |
| BA                                    | 157           | Computer Accounting for Small Business (5 weeks) | 1            |
| BA                                    | 159           | Intermediate Quickbooks (5 weeks)                | 1            |
| CP                                    | 213           | Database Concepts                                | 3            |
| MMS                                   | 151           | DOS Fundamentals (5 weeks)                       | 1            |
| MMS                                   | 156           | Office Management Software (5 weeks)             | 1            |
| MMS                                   | 161           | Project Management (5 weeks)                     | 1            |
| MMS                                   | 162           | Windows NT Workstation (5 weeks)                 | 1            |
| MMS                                   | 164           | Intermediate Windows (5 weeks)                   | 1            |
| MMS                                   | 171           | Hypertext Markup Language (HTML) (5 weeks)       | 1            |
| MMS                                   | 257           | Presentation Graphics                            | 3            |
| MMS                                   | 258           | Local Area Network (LAN) Systems Manager         |              |
| or MMS                                | 264           | Windows NT Server                                | 3            |
| MMS                                   | 261           | Spreadsheet Macro Programming (5 weeks)          | 1            |
| Electives                             |               |                                                  | 1-3          |
| <b>Total Required for Certificate</b> |               |                                                  | <b>58-62</b> |

### Network Specialist Concentration

|                                       |               |                                          |              |
|---------------------------------------|---------------|------------------------------------------|--------------|
| ACCT                                  | 102           | Financial Accounting II                  |              |
| or ACCT                               | 102A and ACCT | 102B                                     | 6            |
| ACCT                                  | 254           | Electronic Spreadsheets                  | 3            |
| CP                                    | 213           | Database Concepts                        | 3            |
| MMS                                   | 151           | DOS Fundamentals (5 weeks)               | 1            |
| MMS                                   | 157           | PowerPoint Fundamentals (5 weeks)        | 1            |
| MMS                                   | 162           | Windows NT Workstation (5 weeks)         | 1            |
| MMS                                   | 164           | Intermediate Windows (5 weeks)           | 1            |
| MMS                                   | 258           | Local Area Network (LAN) Systems Manager | 3            |
| MMS                                   | 261           | Spreadsheet Macro Programming (5 weeks)  | 1            |
| MMS                                   | 262           | LAN Management                           | 3            |
| MMS                                   | 264           | Windows NT Server                        | 3            |
| Network                               | Elective      |                                          | 3            |
| <b>Total Required for Certificate</b> |               |                                          | <b>59-61</b> |

### Multimedia Specialist Concentration

|     |     |                                            |   |
|-----|-----|--------------------------------------------|---|
| MMS | 170 | Introduction to Multimedia                 | 3 |
| MMS | 171 | Hypertext Markup Language (HTML) (5 weeks) | 1 |

|                                       |           |                                   |              |
|---------------------------------------|-----------|-----------------------------------|--------------|
| MMS                                   | 172       | Web Construction Coding (5 weeks) | 1            |
| MMS                                   | 173       | Beginning Photoshop (5 weeks)     | 1            |
| MMS                                   | 174       | Intermediate Photoshop (5 weeks)  | 1            |
| MMS                                   | 255       | Desktop Publishing                | 3            |
| MMS                                   | 257       | Presentation Graphics             | 3            |
| MMS                                   | 270       | Macromedia Authorware             | 3            |
| MMS                                   | 271       | Macromedia Director               | 3            |
| MMS                                   | 272       | Advanced Multimedia               | 3            |
| Computer                              | Electives |                                   | 6            |
| <b>Total Required for Certificate</b> |           |                                   | <b>58-60</b> |

### Arts & Sciences Courses Required for Degree

|                                  |                          |                                           |              |
|----------------------------------|--------------------------|-------------------------------------------|--------------|
| COMM                             | 130 or 221 or 232 or 240 |                                           | 3            |
| *ENG                             | 101                      | College Writing                           | 3            |
| ENG                              | 119                      | Technical Communications                  | 3            |
| MATH                             | 120                      | Intermediate Algebra or higher level math | 4            |
| PHIL                             | 245B                     | Business Ethics                           | 3            |
| <b>Total Required for Degree</b> |                          |                                           | <b>74-78</b> |

### ELECTIVES

|                 |      |                                                  |     |
|-----------------|------|--------------------------------------------------|-----|
| BA              | 157  | Computer Accounting for Small Business (5 weeks) | 1   |
| BA              | 159  | Intermediate Quickbooks (5 weeks)                | 1   |
| <sup>3</sup> CP | 177L | Introduction to Computer Graphics                | 3   |
| <sup>3</sup> CP | 178L | Computer Animation                               | 3   |
| MMS             | 152  | Lotus Fundamentals (5 weeks)                     | 1   |
| MMS             | 153  | dBase Fundamentals (5 weeks)                     | 1   |
| MMS             | 156  | Office Management Software (5 weeks)             | 1   |
| MMS             | 157  | PowerPoint Fundamentals (5 weeks)                | 1   |
| MMS             | 159  | Access Fundamentals (5 weeks)                    | 1   |
| MMS             | 161  | Project Management (5 weeks)                     | 1   |
| MMS             | 162  | Windows NT Workstation (5 weeks)                 | 1   |
| MMS             | 164  | Intermediate Windows (5 weeks)                   | 1   |
| MMS             | 172  | Web Construction Coding (5 weeks)                | 1   |
| MMS             | 173  | Beginning Photoshop (5 weeks)                    | 1   |
| MMS             | 174  | Intermediate Photoshop (5 weeks)                 | 1   |
| MMS             | 175  | Advanced Photoshop (5 weeks)                     | 1   |
| MMS             | 255  | Desktop Publishing                               | 3   |
| MMS             | 256  | Advanced Desktop Publishing                      | 3   |
| MMS             | 280  | Postscript Illustration                          | 3   |
| MMS             | 281  | Image Manipulation/Painting                      | 3   |
| MMS             | 282  | Digital Prepress                                 | 3   |
| MMS             | 296  | Topics Course                                    | 1-3 |
| MMS             | 298  | Internship                                       | 4   |

|     |     |                                 |   |
|-----|-----|---------------------------------|---|
| MMS | 299 | Cooperative Education . . . . . | 4 |
|-----|-----|---------------------------------|---|

### Network Electives

|                 |      |                                                      |   |
|-----------------|------|------------------------------------------------------|---|
| <sup>3</sup> CP | 282  | Network Topologies/Network OS Environments . . . . . | 3 |
| <sup>3</sup> CP | 283  | Overview of NOS Environments . . . . .               | 3 |
| <sup>3</sup> CP | 274L | Introduction to UNIX and WANs . . . . .              | 3 |
| <sup>3</sup> CP | 218  | Introduction to Client/Server Technology . . . . .   | 3 |

<sup>1</sup>Required for certificate only

<sup>2</sup>This class should be taken in Term 2 for the associate of applied science degree.

<sup>3</sup>See the program director regarding prerequisites.

<sup>4</sup>May be taken at any time when prerequisites are met.

**MMS 134      WordPerfect for Windows      3 credit hours**  
*(Prerequisite: BA 150 or permission to enroll)* Word processing software using Windows with emphasis on functions and practical office applications. (2 theory + 3 lab hours a week) Course fee: \$15

**MMS 135      Microsoft Word for Windows      3 credit hours**  
*(Prerequisite: BA 150 or permission to enroll)* Word processing, using Microsoft Word for Windows with emphasis on functions and practical office applications. (2 theory + 3 lab hours a week) Course fee: \$15

**MMS 150      Microsoft Windows      1 credit hour**  
 Basic elements of Windows with emphasis on software functions. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**MMS 151      DOS Fundamentals      1 credit hour**  
*(Prerequisite: 25 wpm typing skill)* DOS commands, internal and external commands, directories, file management and batch files. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**MMS 152      Lotus Fundamentals      1 credit hour**  
*(Prerequisite: 25 wpm typing skill)* Instruction is provided for non-accounting spreadsheet applications. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**MMS 153      dBase Fundamentals      1 credit hour**  
*(Prerequisite: 25 wpm typing skill)* Function and purpose of database software. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**MMS 154      Desktop Publishing Using Word      1 credit hour**  
*(Prerequisites: knowledge of Word, BA 150 or permission of program director)* Integrate Word graphics and text to produce newsletters, instructional materials and other documents. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

- MMS 156 Office Management Software 1 credit hour**  
(Prerequisite: BA 150 or permission of program director) Groupware is used to create, analyze and share information. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 157 PowerPoint Fundamentals 1 credit hour**  
(Prerequisite: 25 wpm typing skill) Basic text charts and graph charts. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 158 Excel Fundamentals 1 credit hour**  
(Prerequisite: 25 wpm typing skill) Creating, editing and enhancing worksheets; formatting cells; basic formulas and charts. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 159 Access Fundamentals 1 credit hour**  
(Prerequisite: 25 wpm typing skill) Tables, queries, forms and reports. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 160 Introduction to Internet 1 credit hour**  
(Prerequisite: MMS 150 or permission of program director) Main features of the Internet that include e-mail, listserv, file transfer protocol (FTP), Gopher, and the World Wide Web. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 161 Project Management 1 credit hour**  
(Prerequisites: BA 150, MMS 150 or permission of program director) Planning, scheduling, managing and communicating project information. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 162 Windows NT Workstation 1 credit hour**  
Configure and optimize a Windows NT workstation. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 163 Word Fundamentals 1 credit hour**  
(Prerequisites: MMS 150 recommended) Creating, editing, enhancing, and merging documents. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 164 Intermediate Windows 1 credit hour**  
(Prerequisite: MMS 150 or permission of program director) Emphasis is on Windows 95 interaction with hardware and software to optimally configure and customize computers. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 170 Introduction to Multimedia 3 credit hours**  
(Prerequisite: BA 150) How text, graphics, sound, images and video come together in a multimedia program. Course fee: \$5

**MMS 171      Hypertext Markup Language (HTML)      1 credit hour**

*(Pre- or corequisites: MMS 150, MMS 160)* Students receive instruction in a format used for writing documents to be viewed with a World Wide Web browser. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**MMS 172      Web Construction Coding      1 credit hour**

*(Prerequisite: MMS 171 or permission of program director)* Advanced HTML markup including forms, image maps and programming languages. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**MMS 173      Beginning Photoshop      1 credit hour**

*(Prerequisites: MMS 150 or permission of program director)* Use selection tools to manipulate scanned images, slides and original artwork. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**MMS 174      Intermediate Photoshop      1 credit hour**

*(Prerequisites: MMS 173 or permission of program director)* Use selection, painting tools and color-correction tools to produce high quality digital images. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**MMS 175      Advanced Photoshop      1 credit hour**

*(Prerequisite: MMS 174 or permission of program director)* Share files and prepare images for Web publications. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**MMS 176      Introduction to Internet Commerce      1 credit hour**

*(Prerequisites: MMS 160, MMS 172, or permission of program director)* Includes legal and ethical use of the Internet, Internet business models, Internet marketing techniques and secure site requirements. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5

**MMS 201      Hardware and Software Administration      3 credit hours**

*(Prerequisites: BA 150, MMS 151)* Topics include computer viruses, utilities software, DOS and Macintosh operating systems, installation of boards and software integration. (2 theory + 3 lab hours a week) Course fee: \$5

**MMS 220      Desktop Publishing on a Mac      3 credit hours**

*(Prerequisites: BA 150)* This course teaches PostScript desktop publishing on the Macintosh computer from the basics to recent upgrades of the most popular page layout and illustration software. (2 theory + 3 lab hours a week) Course fee: \$15

**MMS 255      Desktop Publishing      3 credit hours**

*(Prerequisite: BA 150 or CR 133 or permission of program director)* Students use micro-computers to edit, typeset, design and do graphic production and page makeup. (2 theory + 3 lab hours a week) Course fee: \$15

- MMS 256 Desktop Publishing and Digital Printing 3 credit hours**  
*(Prerequisite: MMS 255 or MMS 220)* Students get hands-on experience in advanced desktop publishing including design techniques, downloading materials from the Internet and managing linkages to PostScript graphics and photos. (2 theory + 3 lab hours a week) Course fee: \$15
- MMS 257 Presentation Graphics 3 credit hours**  
*(Prerequisite: BA 150 or CR 133 or permission of program director)* This course provides hands-on experience in graphics presentation software which emphasizes charting, drawing, organizing and displaying images. (2 theory + 3 lab hours a week) Course fee: \$15
- MMS 258 Local Area Network (LAN) Systems Manager 3 credit hours**  
*(Prerequisites: MMS 150, MMS 160, MMS 151 or permission to enroll)* Introduction to network systems management that includes a brief overview of network layouts and topology and instruction on creating workable directories, login scripts, user accounts and menus. (2 theory + 3 lab hours a week) Course fee: \$10
- MMS 260 Word Processing Macro Programming 1 credit hour**  
*(Prerequisites: BA 150, MMS 134 or MMS 135)* The basic procedures for writing and running macros are covered. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 261 Spreadsheet Macro Programming 1 credit hour**  
*(Prerequisites: BA 150, ACCT 254)* The basic procedures for writing and running a macro are covered. (5 weeks; 2 theory + 3 lab hours a week) Course fee: \$5
- MMS 262 LAN Management 3 credit hours**  
*(Prerequisites: BA 150, MMS 150, MMS 151 or permission of program director)* Instruction on the operation and security of a computer network using a specific LAN software. (2 theory + 3 lab hours a week) Course fee: \$10
- MMS 263 Advanced LAN Management 3 credit hours**  
*(Prerequisite MMS 258 or permission of program director)* Instruction on network performance, troubleshooting and ways to optimize network performance. (2 theory + 3 lab hours a week) Course fee: \$10
- MMS 264 Windows NT Server 3 credit hours**  
*(Prerequisites: MMS 150, MMS 160, MMS 162)* Managing single or multiple domains, improving system security and data, and integrating and optimizing a Windows NT Server. Course fee: \$10
- MMS 270 Macromedia Authorware 3 credit hours**  
*(Prerequisites: MMS 170 or permission of program director)* Interactive multimedia authoring program with emphasis on learning to combine a variety of media. (2 theory + 3 lab hours a week) Course fee: \$15

- MMS 271 Macromedia Director 3 credit hours**  
*(Prerequisites: MMS 170 or permission of program director)* Instruction in the use of an interactive multimedia script language to create dynamic multimedia productions. (2 theory + 3 lab hours a week) Course fee: \$15
- MMS 272 Advanced Multimedia 3 credit hours**  
*(Prerequisite: MMS 270; pre- or corequisite: MMS 271)* Instruction in the choice and use of appropriate software and media to design and produce a cost effective multimedia presentation. (2 theory + 3 lab hours a week) Course fee: \$15
- MMS 276 Web Site Design 3 credit hours**  
*(Prerequisites: MMS 160, MMS 172, MMS 175 or permission of program director)* Uses the elements of communications, marketing, Internet, HTML, and scripting to create and publish new Web sites. (2 theory + 3 lab hours a week) Course fee: \$15
- MMS 280 Postscript Illustration 3 credit hours**  
*(Prerequisite: MMS 220)* Advanced training in the design and production of printable artwork is offered in FreeHand and Illustrator. (2 theory + 3 lab hours a week) Course fee: \$15
- MMS 281 Image Manipulation/Painting 3 credit hours**  
*(Prerequisite: MMS 220)* Design and produce artwork, halftones, duotones and separations in Photoshop. (2 theory + 3 lab hours a week) Course fee: \$15
- MMS 282 Digital Prepress 3 credit hours**  
*(Prerequisite: MMS 220)* Top-end print production in a PostScript environment, preflighting, image production, trapping and imposition. (2 theory + 3 lab hours a week) Course fee: \$15
- MMS 296 Topics Course 1-3 credit hours**  
Current topics in computers.
- MMS 297 Special Problems Variable credit hours**  
*(Prerequisite: permission of program director)* The student and instructor define a specific problem in the area of the student's interest and directly related to the program. The student develops and executes a solution using analytical techniques appropriate to the problem. An oral presentation may be required.
- MMS 298 Internship 4 credit hours**  
*(Prerequisites: ACCT 254, MMS 258 or MMS 262 or MMS 257 and permission of program director)* Students work a minimum of 150 hours at business or training-related supervised work stations. Students are not paid for their work but are supervised jointly by TVI and the company. (1 theory + 9 lab hours a week)
- MMS 299 Cooperative Education 4 credit hours**  
*(Prerequisites: ACCT 254, MMS 258 or MMS 270 and permission of program director)* Students work a minimum of 150 hours at business or training-related supervised work

stations. Student trainees are paid by the cooperating firm and supervised jointly by TVI and the employer. (1 theory + 9 lab hours a week)

## NETWORK MANAGEMENT

The Network Management program provides opportunities for skills and knowledge in the areas of network management, troubleshooting and network performance. This program combines network management skills, problem solving skills and business skills. Managing and maintaining a local area network in a small, medium or large business is emphasized. Early courses in the program emphasize written and verbal communications, business knowledge and basic computer skills.

A suggested schedule per term for the occupational component of the certificate/associate of applied science degree program in Network Management includes:

- Term 1: ACCT 101, ACCT 111, BA 150 or CP 176L, MMS 150, MMS 151, MMS 160
- Term 2: BA 113, BA 121, CP 282, MMS 258, MMS 162, ELEC 217
- Term 3: BA 133, CP 274L, CP 283, MMS 164, MMS 262
- Term 4: CP 285, CP 218, CP 213, MMS 264

### *Credit Hours*

|         |                    |                                                    |   |
|---------|--------------------|----------------------------------------------------|---|
| ACCT    | 101                | Financial Accounting I                             |   |
| or ACCT | 101A and ACCT 101B |                                                    | 6 |
| ACCT    | 111                | Business Math                                      | 3 |
| BA      | 113                | Introduction to Business                           | 3 |
| BA      | 121                | Business English                                   | 3 |
| BA      | 133                | Principles of Management                           | 3 |
| BA      | 150                | Introduction to Computer Processing                |   |
| or CP   | 176L               | Introduction to Technology Computer Applications   | 4 |
| CP      | 218                | Introduction to Client/Server Technology           | 3 |
| CP      | 274L               | Introduction to UNIX and WANS                      | 3 |
| CP      | 282                | Networking Topologies/NOS Environments             | 3 |
| CP      | 283                | Overview of Network Operating Systems Environments | 3 |
| CP      | 285                | Troubleshooting Networks                           | 3 |
| *CP     | 213                | Database Concepts                                  | 3 |
| ELEC    | 217                | Upgrading and Repairing PCs                        | 3 |
| MMS     | 150                | Microsoft Windows (5 weeks)                        | 1 |
| MMS     | 151                | DOS Fundamentals (5 weeks)                         | 1 |
| MMS     | 160                | Introduction to Internet (5 weeks)                 | 1 |
| MMS     | 162                | Windows NT Workstation (5 weeks)                   | 1 |
| MMS     | 164                | Intermediate Windows (5 weeks)                     | 1 |
| MMS     | 258                | Local Area Network (LAN) Systems Manager           | 3 |
| MMS     | 262                | LAN Management                                     | 3 |
| MMS     | 264                | Windows NT Server                                  | 3 |

**Total Required for Certificate . . . . . 57**

\*See program director regarding prerequisites

**Arts & Sciences Courses Required for Degree**

|                                                 |                                                         |   |
|-------------------------------------------------|---------------------------------------------------------|---|
| COMM                                            | 130 or 221 or 232 or 240 . . . . .                      | 3 |
| ENG                                             | 101 College Writing . . . . .                           | 3 |
| MATH                                            | 120 Intermediate Algebra or higher level math . . . . . | 4 |
| PHIL                                            | 245B Business Ethics . . . . .                          | 3 |
| Social or Behavioral Science Elective . . . . . |                                                         | 3 |

**Total Required for Degree . . . . . 73**

See the Technologies Department and the Accounting, Business Administration and Microcomputer Management programs for course descriptions.

**OFFICE ASSISTANT**

This two-term certificate program offers entry-level office-related skills for students who prefer to quickly begin their career as office professionals. Students acquire basic English, computer, word processing and business interpersonal skills. The courses in this program may be applied toward an Administrative Assistant certificate/associate of applied science degree.

A suggested schedule per term for the Receptionist/ Clerical certificate includes:

Term 1: AA 101, AA 102, BA 121, BA 150

Term 2: ACCT 111, AA 143, AA 170, AA 171, BA 131, Elective

*Credit Hours*

|                    |     |                                                           |   |
|--------------------|-----|-----------------------------------------------------------|---|
| AA                 | 101 | Beginning Keyboarding . . . . .                           | 3 |
| AA                 | 102 | Keyboard Applications . . . . .                           | 3 |
| AA                 | 143 | Word Processing . . . . .                                 | 4 |
| AA                 | 170 | Business Telephone Techniques (5 weeks) . . . . .         | 1 |
| AA                 | 171 | Working with the Challenging Customer (5 weeks) . . . . . | 1 |
| ACCT               | 111 | Business Math . . . . .                                   | 3 |
| BA                 | 121 | Business English . . . . .                                | 3 |
| BA                 | 131 | Business Interpersonal Skills (7.5 weeks) . . . . .       | 2 |
| BA                 | 150 | Introduction to Computer Processing . . . . .             | 4 |
| Elective . . . . . |     |                                                           | 3 |

**Total Required for Certificate . . . . . 27**

**Approved Electives**

|    |     |                                                |   |
|----|-----|------------------------------------------------|---|
| AA | 107 | Intermediate Keyboard Skill-building . . . . . | 2 |
| AA | 172 | Product and Service Sales (5 weeks) . . . . .  | 1 |
| AA | 173 | Time Management (5 weeks) . . . . .            | 1 |

|      |     |                                            |   |
|------|-----|--------------------------------------------|---|
| BA   | 122 | Business Writing .....                     | 3 |
| BA   | 252 | Customer Relations .....                   | 3 |
| MMS  | 157 | PowerPoint Fundamentals (5 weeks) .....    | 1 |
| MMS  | 158 | Excel Fundamentals (5 weeks) .....         | 1 |
| MMS  | 159 | Access Fundamentals (5 weeks) .....        | 1 |
| MMS  | 160 | Introduction to Internet (5 weeks) .....   | 1 |
| SSKL | 211 | Employment Skills-General (15 hours) ..... | 1 |

See the Accounting, Administrative Assistant, Business Administration and Microcomputer Management programs for course descriptions.

## PRE-MANAGEMENT

This associate of arts degree is designed to fulfill the freshman and sophomore course requirements for admission to the baccalaureate degree program at the Anderson Schools of Management at the University of New Mexico.

The curriculum is based on an articulation agreement between TVI and UNM which facilitates the transfer process. The agreement states that the student's cumulative grade point average (GPA) should be 2.0 and the GPA in the specific requirements should be 2.4. Specific requirement courses must be passed with a grade of C or better. The credit/no credit option is not available for specific requirement courses; students may select that option only for general education requirements courses. Transfer and non-traditional credit accepted by TVI toward the completion of this program may not be accepted by UNM. Students who apply transfer and non-traditional credit toward the Pre-Management program at TVI and/or enroll in specific requirement courses on a credit/no credit basis are not covered by this articulation agreement.

Students should communicate with the Bachelor of Business Administration admission advisors at the Anderson Schools of Management at the University of New Mexico at least one semester before they plan to transfer.

A suggested schedule per term for the associate of arts degree in Pre-Management includes:

- Term 1: BA 113, ENG 101, PSY 105 or SOC 101, BA 150 or CSCI 101, MATH 121
- Term 2: ENG 102, ECON 200, MATH 180, PSY or SOC 200<sup>1</sup>
- Term 3: ECON 201, MATH 245, Lab Science, Arts & Sciences requirements: 7 credit hours
- Term 4: ACCT 101, Arts & Sciences requirements: 6 credit hours
- Term 5: ACCT 102, Arts & Sciences requirements: 9 credit hours

## General Education Requirements

*Credit Hours*

### General Electives

COMM 130, 232; ART 101, 151, 201, 260; MUS 139, 140;  
 or modern languages (French, Spanish, German, etc.)  
 philosophy, humanities (except history<sup>1</sup>), literature,  
 English above 102 except ENG 119 . . . . . 9

### Social Science Electives

Anthropology; history<sup>1</sup>; political science; geography . . . . . 9

### Lab Science Electives

Astronomy, biology; chemistry; physics (must include lab) . . . . . 4

**Subtotal . . . . . 22**

## Specific Requirements

These courses are prerequisites. They must be passed with a grade of C or better and cannot be taken on a credit/no credit basis.

ENG 101 and 102 or equivalent . . . . . 6

MATH 121 or 150 and 162 or 180  
 (MATH 121 and 180 recommended for business majors) 668

ECON 200 and 201 . . . . . 6

PSY 105 and 200 or higher  
 or SOC 101 and 200 or higher . . . . . 6

MATH 245 . . . . . 4

BA 150 or CSCI 101 . . . . . 4

<sup>2</sup> ACCT 101 or (ACCT 101A and ACCT 101B) . . . . . 6

ACCT 102 or (ACCT 102A and ACCT 102B) . . . . . 6

BA 113 . . . . . 3

**Subtotal . . . . . 47-49**

**Total . . . . . 69-71**

<sup>1</sup> Defined by UNM as a social science; listed in TVI Arts & Sciences as humanities.

<sup>2</sup> Pre- or corequisite: ACCT 111 or completion of MATH 162 or 180

## SALES AND CASHIERING

The Sales and Cashiering certificate program prepares students for entry-level careers in retail and service occupations.

The sales-cashier laboratory provides opportunities for learning the skills of sales, the cash register touch system and human relations. Students work with various makes and models of electronic cash registers.

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. A student who completes the course with a grade of C or better receives an Albuquerque TVI certificate.

The program is offered in the fall term. This program does not qualify students for Veterans Administration training benefits or other student financial aid.

### *Credit Hours*

|      |      |                             |    |
|------|------|-----------------------------|----|
| SALE | 101L | Sales-Cashier Lab .....     | 9  |
| SALE | 299  | Cooperative Education ..... | 4  |
|      |      | Total .....                 | 13 |

### **SALE 101L      Sales-Cashier Lab      9 credit hours**

*(Prerequisite, placement test)* Fundamentals of merchandising math, cashiering, retail salesmanship, human relations and customer service. Tutorials and self-paced modules are also available. (5 theory + 10 lab hours a week)

### **SALE 299      Cooperative Education      4 credit hours**

Students work a minimum of 150 hours at retailing-related, instructor-approved work stations. Student trainee is paid by the cooperating employer and supervised jointly by TVI and the employer. There are times when it is impossible to place all students in work stations because of local employment requirements. (1 theory + 9 lab hours a week)

## STENOTRANSSCRIPTION

Stenotranscriptionists produce documents in corporate, government, publishing, medical, legal office settings and in police departments. Stenotranscriptionists may also be self-employed. They use machine shorthand skills, computers, and rapid data entry software to produce documents at 100 words per minute and faster.

Each student develops a broad vocabulary and extensive training in document production, grammar and punctuation skills. These courses emphasize accuracy in document production.

AA 101 and AA 102 are prerequisites for CR 103.

A suggested schedule per term for the Stenotranscription certificate program includes:

Term 1: BA 121, BA 131, BA 150, CR 103

Term 2: CR 104

Term 3: CR 210, CR 251

## Certificate Requirements

|                        |      |                                                     | <i>Credit Hours</i> |
|------------------------|------|-----------------------------------------------------|---------------------|
| BA                     | 121  | Business English . . . . .                          | 3                   |
| BA                     | 131  | Business Interpersonal Skills (7.5 weeks) . . . . . | 2                   |
| BA                     | 150  | Introduction to Computer Processing . . . . .       | 4                   |
| CR                     | 103  | Machine Shorthand I . . . . .                       | 7                   |
| CR                     | 104  | Machine Shorthand II . . . . .                      | 7                   |
| CR                     | 210  | Machine Shorthand III . . . . .                     | 8                   |
| CR                     | 251  | Stenotranscription . . . . .                        | 3                   |
| CR                     | 298A | Internship . . . . .                                | 2                   |
| <b>Total . . . . .</b> |      |                                                     | <b>36</b>           |

## Optional Courses<sup>#</sup>

|        |     |                                              |     |
|--------|-----|----------------------------------------------|-----|
| AA     | 143 | Word Processing . . . . .                    | 4   |
| or MMS | 134 | WordPerfect for Windows . . . . .            | 3   |
| or MMS | 135 | Microsoft Word for Windows . . . . .         | 3   |
| AA     | 207 | Law Office Technology . . . . .              | 4   |
| AA     | 231 | Business English Applications . . . . .      | 3   |
| AA     | 250 | Machine Transcription . . . . .              | 3   |
| AA     | 270 | Medical Transcription . . . . .              | 3   |
| AA     | 275 | ICD-9-CM Coding . . . . .                    | 3   |
| AA     | 276 | Current Procedural Terminology . . . . .     | 3   |
| BA     | 211 | Business Law . . . . .                       | 3   |
| BA     | 252 | Customer Relations . . . . .                 | 3   |
| CR     | 122 | Word Power (7.5 weeks) . . . . .             | 1   |
| CR     | 123 | Punctuation for Court Reporters . . . . .    | 3   |
| CR     | 132 | Medical Terminology and Anatomy . . . . .    | 5   |
| CR     | 240 | Legal Terminology/Procedures . . . . .       | 3   |
| CR     | 250 | Computer-aided Transcription . . . . .       | 3   |
| CR     | 252 | Medical/Legal Stenotranscription . . . . .   | 2   |
| CR     | 296 | Topics Course . . . . .                      | 1-3 |
| CR     | 299 | Cooperative Education . . . . .              | 4   |
| ENG    | 240 | Traditional Grammar . . . . .                | 3   |
| ENTR   | 101 | Entrepreneurship . . . . .                   | 6   |
| MMS    | 160 | Introduction to Internet (5 weeks) . . . . . | 1   |

<sup>#</sup>May be taken at any time when prerequisites are met.

See the Court Reporting program for course descriptions.

# HEALTH OCCUPATIONS

The Health Occupations Department provides entry-level training and skill upgrading in a variety of medical fields as well as child development.

Special courses, for which a department certificate of completion is awarded, also are offered. At least 12 students must sign up for a special course before it can be offered, and each student must meet all prerequisites. These courses may not be offered every year. Students enrolled in these courses are not eligible to receive financial aid or Veterans Administration benefits.

Health Occupations offerings in 1998-99 are:

|                                     |                             |
|-------------------------------------|-----------------------------|
| Emergency Medical Technician        | Special Course              |
| Licensed Practical Nurse Refresher  | Special Course              |
| Nursing Home/Home Health Attendant  | Special Course              |
| Perioperative Nurse Specialist      | Special Course              |
| Registered Nurse Refresher          | Special Course              |
| Child, Youth and Family Development | Associate of Arts Degree    |
| Clinical Laboratory Assistant       | Certificate                 |
| Healthcare Technician               | Certificate                 |
| Health Unit Clerk                   | Certificate                 |
| Medical Laboratory Technician       | Associate of Science Degree |
| Practical Nursing                   | Certificate                 |
| Nursing                             | Associate of Science Degree |
| Nursing Assistant                   | Certificate                 |
| Pharmacy Technician                 | Certificate                 |
| Phlebotomy                          | Certificate                 |
| Respiratory Therapy                 | Associate of Science Degree |
| Surgical Technology                 | Certificate                 |

Classes are held in Jeannette Stromberg Hall at Main Campus and at the South Valley Campus; students may have supervised patient practicums and observations at community

agencies.

**Enrollment:** All Health Occupations programs except Nursing Assistant require a high school diploma or equivalent and completion of the TVI placement test. Most programs also have prerequisites. Health Occupations programs require that students be in good physical condition, free of health conditions that could endanger themselves or others. Students may be required to have a physical exam.

Credit by examination (challenge) is available for selected courses. Program directors have detailed information.

**Grading Policy:** It is strongly recommended that all required courses be taken for a traditional letter grade. Most courses within Health Occupations must be taken for a traditional letter grade; the credit/no credit option may only be used for selected courses. A grade of C or better is required in all occupational courses required for graduation. All prerequisite courses require a grade of C or better.

**Handbooks:** For specific policies and procedures regarding classroom expectations, clinical experiences, learning laboratories, standards of practice and professional codes of ethics, students should consult their programs' student handbook.

## EMERGENCY MEDICAL TECHNICIAN

This special course trains ambulance attendants to recognize, stabilize and transport patients with life-threatening emergencies. Classes include theory and lab. A TVI and EMS (Emergency Medical System) Academy certificate is awarded to students completing the course, who are then eligible to take the state licensure exam to become licensed emergency medical technicians.

Prior to enrollment each student must have current Basic Life Support (BLS) provider CPR certification and must be a high school graduate. BLS CPR certification is offered through the American Heart Association. A high school diploma or equivalent is required for EMT licensure.

The course is offered during evening hours in the fall and spring terms. Participants pay the TVI registration fee, a \$40 uniform fee and a \$15 supply fee and purchase a textbook. The uniform fee covers the cost of the EMS academy course syllabus and certification.

**EMS 160L      Basic Emergency Medical Technician Skills      6 credit hours**

*(Prerequisites: BLS CPR certification, RDG 099 or equivalent, MATH 099 or equivalent)*

Introduction to emergency medical techniques provided by rescue squads including use of airway adjuncts, oxygen therapy, splinting, patient assessment and treatment for shock. (4 theory + 5 lab hours a week) Course fee: \$15; uniform fee: \$40

## LICENSED PRACTICAL NURSE REFRESHER

The LPN Refresher special courses meet the requirements of the State of New Mexico Nursing Practice Act 61-3-24.D. for nurses who have not been actually engaged in nursing for five years or more. It is approved by the New Mexico Board of Nursing. The curriculum focuses on updates in all major areas of nursing practice.

A physical examination and a current CPR certification for health professionals (BLS) are required before the first clinical day. White uniform and shoes and a stethoscope are required for clinical experience.

The \$20 course fee covers the cost of supplies and preventive lab tests in case of needle stick exposure. There are additional fees payable to the New Mexico State Board of Nursing for licensure endorsement and reinstatement if a nursing license has expired.

The 7.5-week course is offered once a year in the spring term on the Main Campus and twice a year, spring and summer, through Distance Learning. Enrollment is limited to 21 persons. Students enrolled in this program may not be eligible to receive financial aid or Veterans Administration benefits.

*Credit Hours*

|                        |      |                                         |          |
|------------------------|------|-----------------------------------------|----------|
| LPNR                   | 155L | Refresher Theory/Lab . . . . .          | 7        |
| LPNR                   | 165C | Refresher Clinical Experience . . . . . | 2        |
| <b>Total . . . . .</b> |      |                                         | <b>9</b> |

**LPNR 155L Refresher Theory/Lab 7 credit hours**  
*(Corequisite: LPNR 165C)* Trends in medical-surgical and specialty nursing trends, procedures and pharmacology are covered. (11 theory + 3 lab hours a week) Course fee: \$20

**LPNR 165C Refresher Clinical Experience 2 credit hours**  
*(Prerequisite: must have had a valid LPN license; corequisite: LPNR 155L)* Supervised medical and surgical clinical experiences include administration of medications and patient care. This course is offered for credit/no credit.

## NURSING HOME/HOME HEALTH ATTENDANT

This 150-hour, seven-week special course is designed to teach basic nursing skills to individuals who wish to work or are working in a nursing home as an attendant or in patients' homes as a home health attendant. Graduates are eligible to take the state certification exam to become a certified nursing assistant (CNA).

The five-week theory portion of the course includes basic nursing skills, geriatrics, simple anatomy and physiology, rehabilitation, residents' rights and housekeeping chores. Lab experiences focus on personal care, vital signs and mobility skills. The two-week clinical portion of the course applies these skills in a clinical setting.

The \$22 uniform fee covers the cost of required uniform top, name tag, stethoscope, health test, parking fees, transfer belt and preventive lab tests in case of needle stick exposure.

Twenty-four persons are enrolled in each course on a first come, first served basis. Courses are offered in the fall and spring terms. Students enrolled in this program may not be eligible to receive financial aid or Veterans Administration benefits.

**NAHA 102L Nursing Home/Home Health Attendant Theory/Lab 5 credit hours**  
*(Corequisite: NAHA 102C)* Includes basic nursing skills necessary to work in a nursing home, rehabilitation center or private home. Personal care and restorative care skills are

taught in a lab setting. (11 theory + 9 lab hours a week for 5 weeks) Uniform fee: \$22

**NAHA 102C Nursing Home/Home Health Attendant Clinical 1 credit hour**  
(Pre- or corequisite: NAHA 102L) Basic nursing skills are practiced in a supervised long term care setting. (25 hours a week for 2 weeks)

## PERIOPERATIVE NURSE SPECIALIST

These special courses provide RNs and LPNs with the skills and knowledge to work in hospital operating rooms or free-standing day surgical units. Twelve-week courses are offered in the summer term.

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, including 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.

Written permission of the instructor is required for enrollment. Applicants should call the Health Occupations Department to schedule an interview with the instructor. Applicants must be current licensed nurses. During the first week of the course, students must submit proof to the instructor of current immunizations, New Mexico RN or PN license, CPR card and a physical exam.

There is a \$35 course fee which covers the cost of parking permits, name tags and preventive lab tests in case of needle stick exposure. Students enrolled in this program may not be eligible to receive financial aid or Veterans Administration benefits.

### *Credit Hours*

|                    |      |                                                          |           |
|--------------------|------|----------------------------------------------------------|-----------|
| PRNS               | 255L | Perioperative Nurse Specialist Theory/Lab .....          | 8         |
| PRNS               | 265C | Perioperative Nurse Specialist Clinical Experience ..... | 6         |
| <b>Total .....</b> |      |                                                          | <b>14</b> |

**PRNS 255L Perioperative Nurse Specialist Theory/Lab 8 credit hours**  
(Prerequisite: Program Chair approval; corequisite: PRNS 265C) Presents history and philosophy of perioperative nursing, the surgical environment, perioperative care, intra-operative care and postoperative care. Skills are practiced in a mock operating room laboratory. (6 theory + 6 lab hours a week for 12 weeks) Course fee: \$35

**PRNS 265C Perioperative Nurse Specialist Clinical Experience 6 credit hours**  
(Corequisite: PRNS 255L) Application of new and previously learned concepts to perioperative nursing in hospital operating rooms. (24 clinical hours a week for 12 weeks)

## REGISTERED NURSE REFRESHER

The RN Refresher special courses meet the requirements of the State of New Mexico Nursing Practice Act 61-3-24.D. for nurses who have not been actually engaged in nursing

for five years or more. It is approved by the New Mexico Board of Nursing. The curriculum focuses on updates in all major areas of nursing practice.

A physical examination and a current CPR certification for health professionals (BLS) are required before the first clinical day. White uniform and shoes and a stethoscope are required for clinical experience.

The \$20 course fee covers the cost of supplies and preventive lab tests in case of needle stick exposure. There are additional fees payable to the New Mexico State Board of Nursing for licensure endorsement and reinstatement if a nursing license has expired.

The 7.5-week RN Refresher course is offered once a year in the summer term on the Main Campus and twice a year, spring and summer, through Distance Learning. Enrollment is limited to 20 persons. Students enrolled in this program may not be eligible to receive financial aid or Veterans Administration benefits.

*Credit Hours*

|                    |      |                                     |          |
|--------------------|------|-------------------------------------|----------|
| RNR                | 255L | Refresher Theory/Lab .....          | 7        |
| RNR                | 265C | Refresher Clinical Experience ..... | 2        |
| <b>Total .....</b> |      |                                     | <b>9</b> |

**RNR 255L Refresher Theory/Lab 7 credit hours**  
*(Corequisite: RNR 265C)* Trends in medical-surgical and specialty nursing, pharmacology and procedures are covered. (11 theory + 3 lab hours a week for 8 weeks) Course fee: \$20.

**RNR 265C Refresher Clinical Experience 2 credit hours**  
*(Prerequisite: must have had a valid LPN license; corequisite: RNR 255L)* Supervised medical-surgical clinical experiences include total patient care. This course is offered for credit/no credit. (17 clinical hours a week for 5 weeks)

## CHILD, YOUTH AND FAMILY DEVELOPMENT

The Child, Youth and Family Development (CYFD) program facilitates the learning of theory and skills required for working with children, youth and families in certain settings. The two-year program includes classroom instruction at the Main, South Valley and Rio Rancho campuses as well as practical experience. The program leads to an associate of arts degree and/or prepares students for the national Child Development Associate (CDA) Credential assessment.

The curriculum provides three specialty concentrations, Family Studies (FS) (formerly CYFD), Early Childhood Multicultural Education (ECME) and Child Development Associate (CDA). The course work also promotes the study of reading, writing, speech, math, English and science.

Students interested in transferring the Family Studies (FS) concentration to a four-year college are urged to seek advisement from that college to ensure proper planning when beginning their studies at TVI. The Early Childhood Multicultural Education (ECME) concentration is accepted at all New Mexico four-year colleges/universities with similar

programs. All persons enrolling in any of the concentrations are strongly encouraged to attend an orientation offered each term.

The enrollment requirement is a high school diploma or equivalent. Note: Federal law requires a background check on all persons seeking employment in child care facilities.

Not all courses are offered each term.

## Arts & Sciences Courses Required for Associate Degree

*Credit Hours*

|      |     |                                                             |           |
|------|-----|-------------------------------------------------------------|-----------|
| ART  | 101 | Introduction to Art and/or                                  |           |
| ART  | 151 | Art of the American Southwest                               |           |
|      |     | Select one for FS concentration . . . . .                   | 3         |
|      |     | Both required for ECME concentration . . . . .              | 6         |
| COMM | 270 | Communication Studies for Teachers . . . . .                | 3         |
| ENG  | 101 | College Writing . . . . .                                   | 3         |
| ENG  | 102 | Analytic and Argumentative Writing . . . . .                | 3         |
| MATH | 111 | Math for Elementary/Midschool Teachers . . . . .            | 3         |
|      |     | Social and Behavioral Science: three courses: . . . . .     | 9         |
|      |     | HIST 101, 102, 161, or 162                                  |           |
|      |     | ANTH 230, 250, 237, or 238                                  |           |
|      |     | PSCI 200 U.S. Politics                                      |           |
|      |     | SOC 101, 216, or 225                                        |           |
|      |     | Biological Science, Physical Science or Astronomy . . . . . | 8         |
|      |     | <b>FS Total . . . . .</b>                                   | <b>32</b> |
|      |     | <b>ECME Total . . . . .</b>                                 | <b>35</b> |

## CONCENTRATION: FAMILY STUDIES (FORMERLY CYFD)

This course of study facilitates the learning of theory and skills required for working in various settings with children from infancy through adolescence as well as families. The two-year concentration includes theory and application in practical settings.

### Required Courses

*Credit Hours*

|     |      |                                                                   |   |
|-----|------|-------------------------------------------------------------------|---|
| CDV | 103  | Pre-School Growth and Development (Fall, Spring) . . . . .        | 3 |
| CDV | 104  | Theories of Child and Family Development . . . . .                | 3 |
|     |      | (Fall, Spring, Summer)                                            |   |
| CDV | 105L | Infant Growth and Development, Theory and Lab . . . . .           | 4 |
|     |      | (Fall, Spring)                                                    |   |
| CDV | 106  | Healthy Young Children (Spring) . . . . .                         | 3 |
| CDV | 201  | Middle Childhood Growth and Development (Summer) . . . . .        | 3 |
| CDV | 202  | Adolescent Growth and Development (Spring) . . . . .              | 3 |
| CDV | 212  | Special Issues in Child and Family Development (Spring) . . . . . | 3 |
| CDV | 129C | Practicum I (Fall, Spring, Summer) . . . . .                      | 2 |
| CDV | 203C | Practicum II (Fall, Spring, Summer) . . . . .                     | 2 |

Take one of the following:

|     |     |                                                          |           |
|-----|-----|----------------------------------------------------------|-----------|
| CDV | 130 | Working with Families and Communities (Spring) . . . . . | 3         |
|     | or  |                                                          |           |
| CDV | 218 | Strengthening Family Structures (Summer) . . . . .       | 3         |
|     | or  |                                                          |           |
| CDV | 219 | Marriage and Families (Fall) . . . . .                   | 3         |
| CDV |     | Electives (see below) . . . . .                          | 9         |
|     |     | <b>Subtotal</b> . . . . .                                | <b>38</b> |
|     |     | <b>Total</b> . . . . .                                   | <b>70</b> |

### Electives

|     |     |                                                                |     |
|-----|-----|----------------------------------------------------------------|-----|
| CDV | 101 | Parents and Young Children (Summer) . . . . .                  | 3   |
| CDV | 128 | Early Childhood Learning Environments I (Fall) . . . . .       | 3   |
| CDV | 130 | Working with Families and Communities (Spring) . . . . .       | 3   |
| CDV | 204 | Introduction to Classroom Learning (Spring) . . . . .          | 3   |
| CDV | 206 | Working with Special Needs Children (Fall) . . . . .           | 3   |
| CDV | 207 | Management of Early Childhood Programs (Summer) . . . . .      | 3   |
| CDV | 209 | Early Childhood Learning Environments II (Spring) . . . . .    | 3   |
| CDV | 210 | Guidance in Early Childhood (Fall, Spring) . . . . .           | 3   |
| CDV | 216 | Individual and Family Diversity . . . . .                      | 3   |
| CDV | 217 | Diversity in Early Childhood Programs and Assessment . . . . . | 2   |
|     |     | (Fall, Spring)                                                 |     |
| CDV | 218 | Strengthening Family Structures (Summer) . . . . .             | 3   |
| CDV | 219 | Marriages and Families (Fall) . . . . .                        | 3   |
| CDV | 296 | Topics . . . . .                                               | 13  |
| CDV | 298 | Independent Study . . . . .                                    | 1-3 |

## CONCENTRATION: EARLY CHILDHOOD MULTICULTURAL EDUCATION

The ECME course of study is designed for students who wish to work in this field or transfer to a four-year college to complete a bachelor's degree in early childhood education or a related field. This concentration addresses the seven general early childhood education competency areas required for New Mexico Department of Education licensure in early childhood education (birth to third grade).

### Required Courses

|     |      |                                                           |   |
|-----|------|-----------------------------------------------------------|---|
| CDV | 126  | Childhood Growth and Development . . . . .                | 3 |
|     |      | (Fall, Spring, Summer)                                    |   |
| CDV | 127L | Observing Young Children (Fall, Spring, Summer) . . . . . | 1 |
| CDV | 128  | Early Childhood Learning Environments I (Fall) . . . . .  | 3 |
| CDV | 129C | Practicum I (Fall, Spring, Summer) . . . . .              | 2 |
| CDV | 130  | Working with Families and Communities (Spring) . . . . .  | 3 |



the life cycle.

**CDV 103 Pre-School Growth and Development 3 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Examines the cognitive, physical and social-emotional development of the pre-school child. Requires observations in an appropriate setting.

**CDV 104 Theories of Child and Family Development 3 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Overview of significant theories and research of children's development and family interactions. *Recommended that FS concentration majors take this course before all others.*

**CDV 105L Infant Growth and Development Theory and Lab 4 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Examines the basic needs and growth factors of children with an emphasis on the prenatal period through 36 months. (This course replaces CDV 102 and CDV 102L.) (3 theory + 3 lab hours per week)

**CDV 106 Healthy Young Children 3 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Provides an awareness of basic health and safety management procedures which contribute to the prevention of childhood illnesses. Emphasis on safe environments, child abuse and neglect and children's nutrition.

**CDV 120 Introduction to CDA Training 2 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Study of the history of CDA, the assessment system and competency standards. A review of the six competency and 13 functional areas as well as what is needed to complete the CDA through the direct assessment route. Presents clarification of the steps involved in preparation for CDA assessment.

**CDV 120B 45-Hour Entry-Level Course 3 credit hours**

Assists entry-level early care, education and family support individuals to advance their understanding and practice in the seven competency areas defined by the State of New Mexico. The course provides opportunities for students to construct knowledge about children, families, communities and support systems through discussion, reflection and skill practice.

**CDV 124 Supervised Field Experience 1-5 credit hours**

*(Pre- or corequisites: Director approval, CDV 120 and CDV 120B)* Scheduled on-site experience that includes working with children at various early childhood settings, as well as home visitor and bilingual settings serving children birth through age six. Credential requires 480 documented clock hours. One credit hour equals 45 contact hours. The number of credit hours will be determined jointly by the program director and the student.

**CDV 126 Childhood Growth and Development 3 credit hours**

*(Prerequisites: RDG 099, ENG 099; corequisite: CDV 127L)* Provides foundation for becoming an early childhood professional with knowledge of how young children develop and learn. Major developmental theories are integrated with all aspects of development includ-

ing psycho-social, physical/motor, cognition, language and literacy. *Course is recommended before other courses for ECME concentration.*

**CDV 127L Observing Young Children 1 credit hour**  
(*Corequisite: CDV 126*) Observation in an approved early childhood setting to promote practical application of lecture and text material for CDV 126. (3 hours per week)

**CDV 128 Early Childhood Learning Environments I 3 credit hours**  
(*Prerequisites: RDG 099, ENG 099*) Presents the knowledge and skills needed to set up and maintain safe, healthy, multicultural, indoor and outdoor environments for children up to age 8, developing typically and atypically. Promotes good health, nutrition and prevention of diseases.

**CDV 129C Practicum I (Formerly Early Childhood Practicum) 2 credit hours**  
(*Pre- or corequisites: CDV 104 [FS concentration], CDV 126 and CDV 128 [ECME concentration]*) Students work in an approved FS or ECME setting to practice competencies learned through coursework and texts. (6 hours per week)

**CDV 130 Working with Families and Communities 3 credit hours**  
(*Prerequisites: RDG 099, ENG 099*) Approaches family, school and community collaboration from the premise that parents are a child's first and most important teacher and that collaboration is essential. Stresses methods to enhance communication and cooperation.

**CDV 201 Middle Childhood Growth and Development 3 credit hours**  
(*Prerequisites: RDG 099, ENG 099*) This course presents the principles of growth and development for six- to 11-year-old children in cognitive, physical and social-emotional areas.

**CDV 202 Adolescent Growth and Development 3 credit hours**  
(*Prerequisites: RDG 099, ENG 099*) Students examine the development and communication patterns of adolescents within the family setting.

**CDV 203C Practicum II (formerly CDV 131C) 2 credit hours**  
(*Prerequisite: CDV 129C; Pre- or corequisite: CDV 209 [ECME concentration]*) Students work in an approved FS or ECME setting to practice competencies learned through coursework and texts. (6 hours per week)

**CDV 204 Introduction to Classroom Learning 3 credit hours**  
(*Prerequisites: RDG 099, ENG 099*) An introduction to educational psychology and learning. Emphasis is on practical application.

**CDV 206 Working with Special Needs Children 3 credit hours**  
(*Prerequisites: RDG 099, ENG 099*) Examines the characteristics and educational needs of exceptional children. Surveys definition, etiology and educational alternatives for each of the exceptionalities. (Formerly titled Education of the Exceptional Person)

**CDV 207 Management of Early Childhood Programs 3 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Presents knowledge and skills to develop an effective early childhood program. Students examine staff responsibilities, program development, scheduling, behavioral observation and evaluation techniques.

**CDV 209 Early Childhood Learning Environments II 3 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Focus on planning, analyzing and evaluating materials, equipment, activities and approaches for learning experiences for birth through third grade. Examines developmentally appropriate practices in curriculum planning. (Formerly titled Developmentally Appropriate Practice)

**CDV 210 Guidance in Early Childhood 3 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Covers positive guidance and discipline techniques; emphasis is on appropriate experiences for the development of autonomy, self-esteem and social competency.

**CDV 212 Special Issues in Child and Family Development 3 credit hours**

*(Prerequisite: Must be in final term or have permission of program director; summer and fall graduates may enroll in spring term.)* Exit seminar course designed to present a balance of research findings, theory and application. Focuses on critical contemporary issues in the field. Students complete a professional portfolio.

**CDV 215 Introduction to the Early Childhood Professions 4 credit hours**

*(Pre- or corequisites: CDV 126, 127, for ECME concentration)* Students explore a variety of early childhood care and education programs in multicultural settings for typical and atypical children. Students participate in a field experience at different sites serving children aged birth to three, three to five, and five to eight.

**CDV 216 Individual and Family Diversity 3 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Focuses on individual and family in terms of social and community diversity. Variances including disabilities, ethnicity, gender and social class are addressed.

**CDV 217 Diversity in Early Childhood Programs and Assessment 2 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Focuses on appropriate programming and assessment of typical and atypical young children, the role of parents in designing programs, the role of assessment in designing curricula and the role of language and culture in assessment.

**CDV 218 Strengthening Family Structures 3 credit hours**

*(Prerequisites: RDG 099, ENG 099)* Students view families from a structural perspective by being exposed to systems thinking. Explores how families are similar to and different from others in society, including biological and social systems. Strength-based perspective is studied and encouraged in practice.

**CDV 219 Marriages and Families 3 credit hours**  
*(Prerequisites: RDG 099, ENG 099)* Provides insights into contemporary marriage and family situations. Focus on decision making for better understanding of families and the broader society.

**CDV 296 Topics 1-3 credit hours**  
 Various special topics in the field are offered as electives.

**CDV 298 Independent Study 1-3 credit hours**  
*(Pre-requisite: Program director approval)* A specific problem is defined and studied while working with the instructor.

## CLINICAL LABORATORY ASSISTANT

The Clinical Laboratory Assistant (CLA) certificate program prepares students to perform basic laboratory testing in a medical laboratory under the supervision of a medical technologist, medical laboratory technician or pathologist. A CLA collects and processes blood specimens and performs test procedures in chemistry, hematology, microbiology and urinalysis.

Students should possess the ability to communicate with clients and the manual dexterity required to handle laboratory equipment. Applicants must present evidence of current TB testing, immunizations (including Hepatitis B, rubella and rubeola) and BLS CPR certification prior to the clinical portion of the program. A \$40 uniform fee covers the cost of a lab coat, health tests, name tags, clinical parking fees, and lab tests in case of needle stick exposure. Advanced placement through transfer and is available for applicants who have completed other phlebotomy programs.

The program is offered in the spring term. Prerequisites are:

- high school diploma or equivalent
- MATH 099 or equivalent
- ENG 099 or equivalent
- RDG 099 or equivalent
- completion of TVI Phlebotomy program within past three years or ASCP or NCA certification
- recent work experience

*Credit Hours*

|                    |      |                                                      |           |
|--------------------|------|------------------------------------------------------|-----------|
| CLA                | 101L | Introduction to Laboratory Technique (7 weeks) ..... | 3         |
| CLA                | 102L | Basic Hematology/Chemistry (7 weeks) .....           | 3         |
| CLA                | 103C | Clinical Experience (8 weeks) .....                  | 5         |
| <b>Total .....</b> |      |                                                      | <b>11</b> |

**CLA 101L Introduction to Laboratory Technique 3 credit hours**  
*(Prerequisites: Phlebotomy Director approval, RDG 099 or equivalent, ENG 099 or equivalent, MATH 099 or equivalent; corequisite: CLA 102L)* Introduction to basic anatomy and

physiology, medical terminology, communications, laboratory math and laboratory techniques using applied theory in urinalysis, serology and Microbiology. Safety issues and practices are stressed. Uniform fee: \$40 (4 theory and 6 lab hours a week for 7 weeks)

**CLA 102L      Basic Hematology/Chemistry      3 credit hours**

*(Corequisite CLA 101L)* Instrumentation and the concepts of quality control and calibration; basic techniques using applied theory in hematology and chemistry and the clinical significance of laboratory testing. (4 theory and 6 lab hours a week for 7 weeks)

**CLA 103C      Clinical Experience      5 credit hours**

*(Prerequisite: CLA 101L, CLA 102L)* In this clinical practicum students perform urinalysis, serology, microbiology, hematology and chemistry procedures in affiliated medical laboratories. (28 hours per week for 8 weeks)

## HEALTHCARE TECHNICIAN

The one-term Healthcare Technician certificate program prepares persons to assist nurses in hospitals. Topics include drawing blood, collecting specimens and preparing and maintaining equipment used to obtain blood specimens. Transcribing written doctor's orders, ordering supplies and communicating with patients as well as healthcare personnel are presented. A third component includes skills such as sterile techniques, urinary catheterizations, respiratory care and physical therapy.

The 12-week, 330-hour, summer-term program includes six weeks of classroom/lab instruction and six weeks of experience in local hospitals and/or clinics.

There is a \$40 uniform fee that includes a lab coat, bandage scissors, name tag, parking fees and health tests. There is a \$10 supply fee. Students are required to have their own stethoscopes and transfer belts.

Prerequisites are:

- graduation from TVI Nursing Assistant program within past two years and C.N.A. certification

or:

- C.N.A. certification and MATH 099 and ENG 099, RDG 099 or equivalent
- successful completion of written Nursing Assistant exam
- successful completion of NA skill exam
- current CPR certification
- current immunizations (MMR, PPD, Hepatitis B, and tetanus)

*Credit Hours*

|                    |                                                         |           |
|--------------------|---------------------------------------------------------|-----------|
| HCT 101/101L       | HCT Phlebotomy Skills and Laboratory .....              | 2         |
| HCT 102/102L       | HCT Health Unit Coordinator Skills and Laboratory ..... | 2         |
| HCT 103/103L       | HCT Special Skills Theory and Laboratory .....          | 4         |
| HCT 110C           | HCT Phlebotomy Skills Clinical .....                    | 2         |
| HCT 120C           | HCT Multi-skilled Clinical .....                        | 2         |
| <b>Total .....</b> |                                                         | <b>12</b> |

**HCT 101/101L HCT Phlebotomy Skills and Laboratory** **2 credit hours**  
*(Corequisites: HCT 102L, HCT 103L; prerequisites: RDG 099 or equivalent, ENG 099 or equivalent, MATH 099 or equivalent, program director approval)* Theory and skills of basic venipuncture and blood collection techniques, specimen handling and reference procedures are presented. (4 theory + 4 lab hours a week) Uniform fee: \$40

**HCT 102/102L HCT Health Unit Coordinator Skills and Lab** **2 credit hours**  
*(Corequisite: HCT 101L)* Basic skills including medical terminology, abbreviations, communications, pharmacological terms and data forms are presented. (2 theory + 8 lab hours a week for six weeks) Course fee: \$10

**HCT 103/103L HCT Special Skills Theory and Laboratory** **4 credit hours**  
*(Corequisite: HCT 101L)* Topics include technical nursing skills such as sterile technique, urinary catheterizations, and respiratory care. (4 theory + 8 lab hours/week for six weeks)

**HCT 110C HCT Phlebotomy Skills Clinical** **2 credit hours**  
*(Prerequisite: HCT 101L; corequisite: HCT 120C)* For three weeks students apply fundamental phlebotomy techniques within the clinical setting.

**HCT 120C HCT Multi-skilled Clinical** **2 credit hours**  
*(Corequisite: HCT 110C)* Students apply health unit coordinating and special skills in nursing in a healthcare setting under the supervision of a nurse. (30 clinical hours/week for three weeks)

## HEALTH UNIT CLERK

The Health Unit Clerk certificate program prepares persons to perform secretarial and management skills in the hospital, elder care center or out-patient clinic. Transcribing doctors' written orders, typing, ordering supplies, answering the telephone, working with computers and communicating with patients, visitors and staff are typical activities. The 15-week program has nine weeks of classroom theory and six weeks of clinical practice in local hospitals. It is offered each term at the South Valley Campus.

Enrollment in the Health Unit Clerk program requires a high school diploma or equivalent and a passing score on the reading, English, and math placement test. Students must also have good written and oral communication skills since they perform a pivotal role with all hospital personnel. There is a \$30 uniform fee which covers the cost of a uniform top, parking fees, name tag and health tests. Neutral-colored slacks or skirts are required for clinical but are not covered by the fee.

|                    |      |                                           | <i>Credit Hours</i> |
|--------------------|------|-------------------------------------------|---------------------|
| HUC                | 101L | Health Unit Clerk Theory and Lab .....    | 8                   |
| HUC                | 131C | Health Unit Clerk Clinical Practice ..... | 4                   |
| <b>Total .....</b> |      |                                           | <b>12</b>           |

**HUC 101L Health Unit Clerk Theory and Lab 8 credit hours**

*(Prerequisites: enrollment in the program, RDG 099 or equivalent, ENG 099 or equivalent, MATH 099 or equivalent; co-requisite: HUC 131C)* Includes medical terminology, simple anatomy, transcription of doctor's orders, computerized patient information systems, communication skills, ethical/legal behavior and the role of a health unit clerk. (5 theory + 20 lab hours a week for 9 weeks)

**HUC 131C Health Unit Clerk Clinical Practice 4 credit hours**

*(Prerequisite: HUC 101L)* Supervised clinical experience in local hospitals and hospital out-patient clinics. Uniform fee: \$30 (25 hours a week for 6 weeks)

## **MEDICAL LABORATORY TECHNICIAN**

The Medical Laboratory Technician associate of science degree 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 under the supervision of a pathologist 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.

The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences. Graduates are eligible to take both the American Society of Clinical Pathologists and the National Certification Agency exams to obtain Certified Medical Laboratory Technician credentials.

The clinical practicum experience at affiliated hospitals and laboratories provides experience in performing laboratory tests under the direction of a clinical instructor. Students must arrange for their own transportation to the hospitals or labs.

There is a uniform fee for MLT 110L or MLT 296/296A of \$31 for one lab coat. There is a uniform fee of \$7.50 for MLT 151C for a name tag, parking fees and preventive lab tests in case of needle stick exposure. Each MLT laboratory course also has a \$20 supply fee.

Orientation sessions for the Medical Laboratory Technician program are scheduled regularly; students should contact the Health Occupations Department for dates and times. These sessions include detailed information about the petitioning and selection process, program requirements, physical demands of the job and general information about laboratory medicine as a career. Anyone interested in the Medical Laboratory Technician program is strongly encouraged to attend one of these orientation sessions. For more information on orientation sessions applicants may call 224-4161.

Prospective MLT students must declare MLT as their major, complete the prerequisites and Arts & Sciences courses and submit a petition packet to the Health Occupations Department to be considered for the MLT classes beginning in the fall term. Students should call the Health Occupations office to learn the dates of the summer petition period. Students are responsible for meeting the eligibility requirements. Once all requirements are fulfilled, students must petition for enrollment in the core MLT curriculum. Required

Arts & Sciences courses may be taken prior to enrollment in MLT courses. Students currently enrolled in the remaining Arts & Sciences courses during the summer term may still petition for the fall term if they submit proof of enrollment in the courses. The program begins in the fall term of each year.

Prerequisites to enroll in the MLT courses are:

- ❑ high school diploma or equivalent
- ❑ English, math, reading, science at 100 level (MATH 100A): may be fulfilled by ACT, SAT or Accuplacer score or college course work
- ❑ completion of the required Arts & Sciences courses before the fall term (except HUM/SS elective)
- ❑ cumulative TVI GPA 2.0 or higher (Courses that transfer to TVI may be used.)

### Required Arts & Sciences Courses

|                       |                                                                                             | <i>Credit Hours</i> |
|-----------------------|---------------------------------------------------------------------------------------------|---------------------|
| BIO 123/124L          | Biology for Health Sciences (BIO 121/121L) <sup>1</sup>                                     | 3                   |
| BIO 124L              | Biology for Health Sciences Lab (BIO 121L or BIO 122L) <sup>1</sup>                         | 1                   |
| ENG 101               | College Writing (ENG 102) <sup>1</sup>                                                      | 3                   |
| CHEM 111              | Introduction to Chemistry (CHEM 121L) <sup>1</sup>                                          | 3                   |
| CHEM 112L             | Introduction to Chemistry Laboratory                                                        | 1                   |
| CHEM 212 <sup>1</sup> | Organic Chemistry & Biochemistry (CHEM 122L) <sup>1</sup>                                   | 4                   |
| BIO 136/139L          | Human Anatomy and Physiology for Non-Majors<br>(BIO 237/247L and BIO 238/248L) <sup>1</sup> | 4                   |
| BIO 239               | Microbiology                                                                                | 3                   |
| BIO 239L              | Microbiology Lab                                                                            | 1                   |
| MATH 145              | Intro to Probability and Statistics (MATH 121) <sup>1</sup>                                 | 3                   |
| Humanities/Social     | Science Elective <sup>1</sup>                                                               | 3                   |

### Required Medical Laboratory Technician Courses

|                       |                                           | <i>Credit Hours</i> |
|-----------------------|-------------------------------------------|---------------------|
| MLT 110L              | Introduction to Medical Technology        | 3                   |
| MLT 114               | Immunology                                | 1                   |
| MLT 114C              | Clinical Immunology                       | 1                   |
| MLT 151C              | Clinical Experience Urinalysis/Phlebotomy | 2                   |
| <sup>2</sup> MLT 201L | Clinical Chemistry                        | 7                   |
| <sup>2</sup> MLT 203L | Clinical Hematology/Coagulation           | 6                   |
| <sup>2</sup> MLT 204L | Clinical Immunohematology                 | 3                   |
| MLT 205C              | Clinical Experience                       | 11                  |
| MLT 206               | MLT Microbiology                          | 3                   |
| MLT 206C              | Clinical MLT Microbiology                 | 2                   |
| <b>Total</b>          |                                           | <b>68</b>           |

<sup>1</sup>These courses may be substituted for the required course.

<sup>2</sup>Courses taught by University of New Mexico faculty at the Health Sciences and Service building on the UNM campus. Students are charged TVI tuition rates.

During academic year 1998-99 CHEM 122L may be substituted for CHEM 212 and MATH 121 may be substituted for MATH 145. By fall term of 1999 these substitutions will no longer be allowed.

An agreement with the UNM Medical Laboratory Science (MLS) Department allows for the transfer of some or all credits earned at TVI toward the UNM MLS bachelor's degree. Students should contact the program director for specifics.

The following order of courses is recommended:

- Spring Term MATH 119, CHEM 111/112L, BIO 123/124L, ENG 101
- Summer Term MATH 145, BIO 136/139L, BIO 239/239L, CHEM 212
- Fall Term MLT 110L, MLT 114/114C, MLT 201L, MLT 204L
- Spring Term MLT 151C, MLT 203L, MLT 206/206C
- Summer Term MLT 205C, HUM/SS elective

### Medical Laboratory Technician Advanced Placement

Applicants seeking advanced placement to the Medical Laboratory Technician program should contact the program director for more information.

**MLT 110L Introduction to Medical Technology 3 credit hours**  
(Prerequisite: program director approval; pre- or corequisites: MLT 114/114C, MLT 201L, MLT 204L) Introduction to basic medical laboratory techniques emphasizing urinalysis. Includes principles and procedures of chemical and microscopic analysis of urine, basic immunology, instrumentation, quality control and safety procedures. (2 theory + 3 lab hours a week) Uniform fee: \$31.00

**MLT 114 Immunology 1 credit hour**  
(Pre- or corequisites: MLT 110L, MLT 114C, MLT 201L, MLT 204L) A basic study of the body's immune response and introduction to diseases involving deficiencies in the immune system. (2 hours a week for 8 weeks)

**MLT 114C Clinical Immunology 1 credit hour**  
(Pre- or corequisites: MLT 110L, MLT 114, MLT 201L, MLT 204L) An opportunity to perform serological testing on specimens from hospital patients using current methodologies. (6 hours a week for 8 weeks) Course fee: \$20

**MLT 151C Clinical Experience Urinalysis/Phlebotomy 2 credit hours**  
(Prerequisite: MLT 110L, MLT 114/114C, MLT 201L, MLT 204L and department approval; pre- or corequisites: MLT 203L, MLT 206, MLT 206C) The practice of procedures learned in urinalysis and phlebotomy at affiliated hospitals. This is a credit/no credit course. Uniform fee \$7.50 (6 hours a week)

**MLT 201L Clinical Chemistry 7 credit hours**  
(Prerequisites: MLT 110L, MLT 114/114C, MLT 204L) The principles and methods used in testing for chemical components in blood and other body fluids including basic instrumentation and laboratory experiences for performing the basic procedures used in a clinical

chemistry laboratory. (5 theory + 6 lab hours a week) Course fee: \$20

**MLT 203L Clinical Hematology/Coagulation 6 credit hours**  
(Prerequisites: *MLT 110L, MLT 114/114C, MLT 204L, MLT 201L*; pre- or corequisites: *MLT 206/206C, MLT 151C*) Normal and abnormal blood cell enumeration and morphology and coagulation mechanisms including the principles of routine procedures performed in the hematology laboratory. (4 theory + 6 lab hours a week) Course fee: \$20

**MLT 204L Clinical Immunohematology 3 credit hours**  
(Pre- or corequisites: *MLT 110L, MLT 114/114C, MLT 201L*) Theory principles and test methods for determining blood group typing, antibody detection and identification, cross matching and component therapy. (4 theory + 6 lab hours a week for 7 weeks) Course fee: \$20

**MLT 205C Clinical Experience 11 credit hours**  
(Prerequisites: *MLT 110L, MLT 114/114C, MLT 151C, MLT 201L, MLT 203L, MLT 204L, MLT 206/206C*; pre- or corequisite: *HUM/SS elective*) Supervised clinical practice takes place in the clinical laboratories of affiliated hospitals with rotations through hematology/coagulation, microbiology, chemistry and immunohematology departments. This is a credit/no credit course. (40 hours a week for 12 weeks)

**MLT 206 MLT Microbiology 3 credit hours**  
(Prerequisite: *MLT 110L, MLT 114/114C, MLT 201L, MLT 204L*; pre- or corequisites: *MLT 151C, MLT 203L, MLT 206C*) Clinical bacteriology, mycology and parasitology including macroscopic and microscopic identification of organisms, antibiotics susceptibility testing, life cycles, and pathology and etiology of various diseases. Virology is introduced.

**MLT 206C Clinical Microbiology 2 credit hours**  
(Prerequisite: *MLT 110L, MLT 114/114C, MLT 201L, MLT 204L*; pre- or corequisites: *MLT 151C, MLT 203L, MLT 206*) The identification of microorganisms of clinical significance from specimens obtained from hospital patients. Students utilize current methodologies and identification techniques. Course fee: \$20 (6 lab hours a week)

**MLT 296/296A Topics in Laboratory Medicine 1-4 credit hours**  
(Prerequisites: may vary) Various topics in laboratory medicine are presented. Uniform fee: \$31

# NURSING PROGRAMS

There are two programs available: associate degree nursing (leading to eligibility for licensure as a Registered Nurse) and practical nursing (leading to eligibility for licensure as an Licensed Practical Nurse). Advanced placement is available. Both programs are approved by the New Mexico State Board of Nursing and accredited by the National League for Nursing Accreditation Commission (NLNAC). For further information on accreditation for either program, the NLNAC may be contacted at (212) 989-9393, extension 153, or write to NLNAC, 350 Hudson Street, New York, New York 10014.

**Licensure:** It is essential that prospective students be informed that the New Mexico State Board of Nursing (NMSBON) may deny, revoke or suspend any license held or applied for under the Nursing Practice Act, upon grounds that the licensee or applicant violates any of the following actions (from BON Manual #91-2, 61-3-28):

1. is guilty of fraud or deceit in procuring or attempting to procure a license or certificate of registration;
2. is unfit or incompetent;
3. is convicted of a felony;
4. is habitually intemperate or is addicted to the use of habit-forming drugs;
5. is mentally incompetent;
6. is guilty of unprofessional conduct; or
7. willfully or repeatedly violates any provisions of the Nursing Practice Act;
8. has had a license to practice revoked, suspended or denied in any jurisdiction, territory or possession of the United States or another country for acts of the license similar to acts described in this subsection.

**Orientation sessions:** Separate orientation sessions are scheduled regularly for each program. For information applicants may call the Health Occupations Department at 224-4161. These sessions review levels of nursing, the petition process for enrollment, program requirements and curriculum changes. Individuals interested in either nursing program must attend one of these sessions and continuing students are encouraged to attend at least one session a year. Students may declare their major in practical nursing or associate degree nursing at any time. However, when ready to enter clinical courses, students must petition for selection.

**Petitioning:** Petitions for selection to the clinical courses are accepted early in the spring term for the practical nurse program and early in the fall term for the associate degree nursing program. Applicants may contact the Health Occupations Department for the dates and times when petitions are accepted. To be eligible to petition a student must complete the prerequisites (see below) and provide proof of completing all required liberal arts courses with a C or better. Anatomy, physiology and microbiology courses must be taken within five years from the date of application to the nursing program. Note: Anatomy and physiology courses have general biology (BIO 123/124L) and chemistry (CHEM 111/112L) prerequisites. These prerequisites may be met by appropriate high school courses. Waiver is provided by the biology faculty.

Once all criteria are fulfilled students must petition for enrollment in the first clinical course in either nursing program. Should there be more petitioners than available spaces,

the date of admission to TVI will be used as the final selection criterion. Should there be more than one person with the same date of admission competing for the same slot, the date of completion of all required liberal arts courses will be used as the final selection criterion. The date of completion will be the last day of the term in which the course was successfully completed.

Because of the high demand for these programs it may take more than one year after petitioning to begin the nursing core coursework.

**Requirements for entering clinical courses:** After selection into the first clinical course, students must submit:

- Completed physical examination and health forms with evidence of current immunizations before beginning clinical courses. It is strongly advisable that students be able to lift 50 pounds or more.
- Evidence of current certification in cardiopulmonary resuscitation (CPR) for health professionals before beginning clinical courses. CPR certification must be kept current throughout the program.

Students must arrange for their own transportation to attend all classes, observations and clinical experiences as scheduled. There may be some required evening clinical hours as well as daytime hours.

There is an initial \$90 equipment fee for required uniforms, stethoscope, scissors, parking fee, transfer belts, identification tags and preventive lab tests in case of needle stick exposure. Students are responsible for the expenses of the physical examination, a watch with a second hand, safety goggles, uniform shoes, graduation pin, textbooks and licensing exam fees. In addition, each course has fees for standardized testing.

**Graduation requirements:** A minimum grade of C must be earned in all required courses to continue in either nursing program and graduate. In addition, competency in dosage calculations, as tested by clinical calculation exams, must be maintained for progress in the program, and the computer literacy requirement must be met.

**Prerequisites:** P.N. and A.D.N. (must be completed in order to petition):

- high school graduate or equivalent
- English, math, reading, science at 100-level (MATH 100A): may be fulfilled by ACT, SAT or Accuplacer scores or college coursework minimum score of 85% on Nursing/MLT Basic Math test within 12 months prior to petitioning
- cumulative TVI GPA 2.0 or higher

Note: Students with concerns about disabilities that may interfere with their ability to complete either nursing program are encouraged to discuss these concerns with the director of the nursing programs before they begin courses.

# PRACTICAL NURSING

This certificate program prepares practical nurses to care for patients in a variety of health care facilities under the supervision of registered nurses and physicians. Graduates 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. Petitioning and prerequisites are covered above. The program begins in the summer term.

The Presbyterian Healthcare Services (PHS) School of Practical Nursing was started in 1956 at Presbyterian Hospital. In 1965 TVI assumed administrative responsibility for the school. Presbyterian continues to support the school by providing clinical facilities for patient care experiences.

## Required Arts & Sciences Courses

|                   |      |                                               | <i>Credit Hours</i> |
|-------------------|------|-----------------------------------------------|---------------------|
| BIO               | 237  | Human Anatomy and Physiology I . . . . .      | 3                   |
| BIO               | 247L | Human Anatomy and Physiology I Lab . . . . .  | 1                   |
| BIO               | 238  | Human Anatomy and Physiology II . . . . .     | 3                   |
| BIO               | 248L | Human Anatomy and Physiology II Lab . . . . . | 1                   |
| ENG               | 101  | College Writing . . . . .                     | 3                   |
| <sup>1</sup> NUTR | 244  | Human Nutrition . . . . .                     | 3                   |
| <sup>2</sup> PSY  | 105  | General Psychology . . . . .                  | 3                   |

## Practical Nurse Courses

|                        |      |                                                       |           |
|------------------------|------|-------------------------------------------------------|-----------|
| NURS                   | 115  | Dosage Calculations . . . . .                         | 1         |
| PN                     | 126C | Foundations of Practical Nursing . . . . .            | 9         |
| PN                     | 127C | Family Nursing . . . . .                              | 8         |
| <sup>3</sup> PN        | 131  | Pharmacology . . . . .                                | 3         |
| PN                     | 128C | Nursing of the Family with Complex Problems . . . . . | 13        |
| PN                     | 129  | Trends and Issues in Practical Nursing . . . . .      | 1         |
| <b>Total . . . . .</b> |      |                                                       | <b>52</b> |

<sup>1</sup>NUTR 125 may be substituted.

<sup>2</sup>PSY 220 may be substituted.

<sup>3</sup>NURS 231 may be substituted.

## Practical Nurse Advanced Placement

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. For additional information applicants may contact the director of the nursing programs. Official transcripts for previous vocational/college course work must be submitted to the TVI Records Office. Nursing courses are only valid for three years from the date of application to TVI. Advanced placement by challenge exam is offered to students who

have either completed a formal course of study in a nursing-related field within a postsecondary institution (e.g. military corps member) or performed basic nursing skills during employment in an in-patient setting within the last three years

**NURS 115      Dosage Calculations      1 credit hour**

*(Prerequisites: Nursing Basic Math Test and nursing director approval; corequisites: PN 126C)* Presents methods of dosage calculations for oral and parenteral medications, including intravenous therapy and pediatric dosages. Offered for CR/NC only.

**PN 126C      Foundations of Practical Nursing      9 credit hours**

*(Prerequisites: nursing director approval, BIO 237/247L, ENG 101; corequisites: NURS 115, BIO 238/248L, NUTR 244)* A study of the foundations of practical nursing including an introduction to nursing process. Develops key concepts of basic and higher order needs within a caring framework. Clinical focuses on assessment of healthy clients across the life-span and measures to maintain/promote mental and physical health. (5 hours theory +12 hours clinical) Uniform fee: \$90

**PN 127C      Family Nursing      8 credit hours**

*(Prerequisites: BIO 238/248L, NURS 115, PN 126C, NUTR 244; pre- or corequisites: PSY 105, PN 131)* Using nursing process, study of the child-bearing and child-rearing family. Clinical focuses on maternity and pediatric clients in community and hospital settings. Includes nursing care of clients with prevalent oncological conditions across the life-span. (4 hours theory, 12 hours clinical) Course fee: \$15

**PN 128C      Nursing of the Family with Complex Problems      13 credit hours**

*(Prerequisites: Calculation Exam II\*, PN 127C, PN 131, PSY 105; corequisite PN 129)* Continued study of the family, using nursing process, focusing on the impact of illness on clients and their families. Clinical focuses on medical and surgical clients with multisystem health problems in acute and long term health care settings. (8 hours theory, 15 hours clinical) Course fee: \$20

**PN 129      Trends and Issues in Practical Nursing      1 credit hour**

*(Corequisite: PN 128C)* The role of the practical nurse in relation to legal/ethical issues, professional relationships, the Nurse Practice Act and the changing health care delivery system.

**PN 131      Pharmacology      3 credit hours**

*(Prerequisites: BIO 238/248L, PN 126C; corequisite: PN 127C)* Focus is on the 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 specific drugs are discussed integrating nursing implications and responsibilities. Course fee: \$10

\*Calculation exams must be passed with a score of 90% or better.

# NURSING

The associate degree nursing (ADN) program prepares technical nurses to provide nursing care to individuals or groups admitted to health care agencies. The clients have common, well defined health problems. Graduates work in structured healthcare settings where they provide and manage client care, teach and promote communication while participating as members of the nursing profession. Requirements and prerequisites are covered above. The program begins in the fall and spring terms.

## Required Arts & Sciences Courses

|                       |      |                                           | <i>Credit Hours</i> |
|-----------------------|------|-------------------------------------------|---------------------|
| BIO                   | 237  | Anatomy and Physiology I .....            | 3                   |
| BIO                   | 247L | Anatomy and Physiology I Lab .....        | 1                   |
| ENG                   | 101  | College Writing .....                     | 3                   |
| PSY                   | 105  | General Psychology .....                  | 3                   |
| BIO                   | 238  | Anatomy and Physiology II .....           | 3                   |
| BIO                   | 248L | Anatomy and Physiology II Lab .....       | 1                   |
| <sup>1</sup> NUTR     | 244  | Human Nutrition .....                     | 3                   |
| PSY                   | 220  | Developmental Psychology .....            | 3                   |
| BIO                   | 239  | Microbiology for Health Sciences .....    | 3                   |
| BIO                   | 239L | Microbiology for Health Sciences Lab..... | 1                   |
| PHIL                  | 245M | Biomedical Ethics .....                   | 3                   |
| <sup>2</sup> Elective |      | .....                                     | 3                   |

## Required Nursing Courses

|                    |      |                                             |           |
|--------------------|------|---------------------------------------------|-----------|
| NURS               | 115  | Dosage Calculations .....                   | 1         |
| NURS               | 126C | Foundations of Nursing .....                | 9         |
| NURS               | 127C | Family Nursing I .....                      | 9         |
| NURS               | 226C | Family Nursing II .....                     | 10        |
| NURS               | 227  | Manager of Care .....                       | 1         |
| NURS               | 231  | Pharmacology in Nursing .....               | 3         |
| NURS               | 247C | Complex Health Problems in the Family ..... | 9         |
| <b>Total .....</b> |      |                                             | <b>72</b> |

<sup>1</sup>NUTR 125 may be substituted.

<sup>2</sup>May be outside of Arts & Sciences with department approval; may not be a lab/science course

## Associate Degree in Nursing: Advanced Placement

To apply for advanced standing in the associate degree nursing program, individuals must meet the enrollment requirements for the program as described above. Official transcripts of all vocational/college courses must be sent to TVI. All advanced placement students must take NURS 202C prior to enrollment in the Nursing courses. Advanced

placement may be granted in three ways:

**Challenge Exam:** for students who meet one of the following criteria: completion of a formal course of study in a nursing related field within a postsecondary institution (e.g. military corps member) or performance of basic nursing skills during employment in an in-patient setting within the last three years. Individuals interested in challenge must make an appointment with the director of the nursing program. The process includes theory and practical exams. Students should check with the department for courses available for challenge. There is a fee for each challenge exam.

**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. Nursing courses are only valid for three years from the date of application. For specific information, students should contact the director of the nursing programs.

**LPN Mobility:** The associate degree program is designed to enroll qualified licensed practical nurses into the third term who meet the following requirements:

- meet all enrollment criteria for the ADN program including official transcripts of previous education in a vocational school or college
- provide proof of current licensure as an LPN
- pass the Nursing Mobility Profile I examinations as indicated by the program
- provide proof of completion of all required liberal arts courses with a minimum grade of C (anatomy and physiology and microbiology courses must be taken within five years from the date of application to the nursing program). Students must also have completed NURS 115 and NURS 202C. Priority is given to those who have also completed NURS 231.

Students are responsible for meeting the prerequisites and notifying the nursing director of their readiness to enter advanced placement four months prior to the term when they want to enter. Students will be notified by mail when they are selected to enter the clinical courses. After selection, students must meet the same requirements for entering clinical courses described above.

Students pay equipment fees for parking, name tags, achievement tests and preventive lab tests in case of needle stick exposure upon enrollment into nursing courses (fees are attached to specific courses). Students also are responsible for the expenses of physical exams, uniforms, transfer belts, shoes, watch with a second hand, safety goggles, stethoscope, bandage scissors, graduation pin and licensing fees.

**NURS 115      Dosage Calculations      1 credit hour**  
(Prerequisites: Nursing Basic Math Test and nursing director approval; corequisite: NURS 126C) Presents methods of dosage calculations for oral and parental medications, including intravenous therapy and pediatric dosages. The course is offered for CR/NC.

**NURS 126C      Foundations of Nursing      9 credit hours**  
(Prerequisites: nursing director approval, BIO 237/247L, ENG 101, PSY 105, NUTR 244; corequisites: NURS 115, BIO 238/248L, PSY 220) Foundations of nursing are reviewed including an introduction to the nursing process with a focus on assessment. Key concepts of basic and higher order needs within a caring framework are developed. Clinical: assess-

ment of healthy clients across the lifespan and measures to maintain/promote mental and physical health. (5 hours theory + 12 hours clinical) Uniform fee: \$90

**NURS 127C Family Nursing I 9 credit hours**  
(Prerequisites: BIO 238/248L, NURS 115, NURS 126C, PSY 220; pre- or corequisites: BIO 239/239L, PHIL 245M) Using nursing process, the child-bearing and child-rearing family are studied. Clinical: experiences with maternity and pediatric clients in community and hospital settings. (5 hours theory + 12 hours clinical) Course fee: \$15

**NURS 202C Concepts for Transition Students 2 credit hours**  
(ADN students: prerequisites: ENG 101, PSY 105, BIO 238/248L, NUTR 244 and credit for NURS 126C, PN students: pre- or corequisites: ENG 101, NUTR 244, BIO 238/248L and credit for PN 126C) Conceptual framework of the nursing program and an in-depth study of the nursing process are introduced. In-depth focus on assessment across the life span. This course is required for all applicants who seek advanced placement in the practical nurse or associate degree program. Offered spring and summer. (1 hour theory + 3 hours clinical)

**NURS 226C Family Nursing II 10 credit hours**  
(Prerequisites: Calculation Exam II\*, NURS 127C, BIO 238/248L, BIO 239/239L; pre- or corequisites: NURS 231; corequisite: NURS 227) Continued study of the family, using nursing process, focusing on the impact of illness. Clinical: medical and surgical clients in community and hospital settings. (5 hours theory + 15 hours clinical) Course fee: \$20

**NURS 227C Manager of Care 1 credit hour**  
(Prerequisites: NURS 127C; corequisite: NURS 226C) Introduces management principles to prepare the ADN nurse to manage care of groups of clients. Clinical application in NURS 226C. Course fee: \$10

**NURS 231 Pharmacology in Nursing 3 credit hours**  
(Prerequisites: Permission of director of nursing, BIO 238/248L, NURS 126C; pre- or corequisite: BIO 239/239L) Concepts necessary for nursing judgment in the use of chemical agents and the theoretical base required to administer medications are introduced. Information covers drugs in current use, including pharmacokinetics, pharmacodynamics, therapeutic uses, adverse reactions, precautions and contraindications. Course fee: \$10

**NURS 247C Complex Health Problems in the Family 9 credit hours**  
(Prerequisites: Calculation Exam III\*, NURS 226C, NURS 227, NURS 231, elective) Study of the impact of complex, multi-system health problems on individuals and families. Includes psychiatric disorders, cultural factors and practice issues. Clinical: providing and managing care of clients across the life span. (4 hours theory + 15 hours clinical) Course fee: \$20

**NURS 296 Topics in Nursing 1-10 credit hours**  
(Prerequisites: may vary) Various topics in nursing are presented.



the laboratory. (5 lab hours a week for five weeks) Uniform fee: \$35

**NA 121C      Nursing Assistant Clinical Experiences      3 credit hours**  
(*Corequisite: NA 161*) Successful completion of NA 101, NA 110L, NA 131, NA 161 and NA 171 is required before going to clinical. The last six weeks of the program include supervised practice of nursing skills in hospitals, long-term care centers and patient homes throughout the city. (20 hours a week for 6 weeks)

**NA 131      Health Communications      3 credit hours**  
(*Corequisite: NA 101, NA 110L, NA 161, NA 171*) This course includes introductions to anatomy and physiology and nutrition. The basic structure and normal functions of the body systems and some of the aging problems which can occur in those systems are covered.

**NA 161      Nursing Assistant Issues      2 credit hours**  
(*Corequisite: NA 101, NA 110L, NA 121C, NA 131, NA 171*) Special topics are covered such as nutrition labs, blood pressure practice, lab practice, and lab finals.

**NA 171      Nursing Assistant-Applications      3 credit hours**  
(*Corequisites: NA 101, NA 110L, NA 131, NA 161*) Basic math is reviewed for part of the term with practice working selected problems. Tests cover eight areas of concentration. The other part of the term deals with geriatric issues and the application of nursing assistant theory to them.

## PHARMACY TECHNICIAN

Pharmacy Technician is a two-term certificate program that prepares persons to assist pharmacists in the community or hospital pharmacy. Students prepare, mix, assemble and label medications. They also prepare sterile products including irrigation and intravenous admixtures. Instruction is provided in the classroom, in laboratories on campus and in local health care facilities. Arts & Sciences courses listed in the curriculum may be taken prior to entering the program.

There is a \$35 uniform fee for one lab coat, name tag and parking fee. The program begins in the fall term.

Prerequisites are:

- high school diploma or equivalent
- RDG 099 or equivalent
- ENG 099 or equivalent
- MATH 100A or equivalent

*Credit Hours*

|    |      |                                                  |   |
|----|------|--------------------------------------------------|---|
| PT | 110  | Introduction to Pharmacy Technology .....        | 3 |
| PT | 111L | Pharmacy Technician Lab I .....                  | 2 |
| PT | 115  | Pharmacy Technician Anatomy and Physiology ..... | 3 |

|    |      |                                                 |   |
|----|------|-------------------------------------------------|---|
| PT | 116  | Pharmacy Calculations . . . . .                 | 3 |
| PT | 120  | Advanced Pharmacy Technology . . . . .          | 3 |
| PT | 121L | Pharmacy Technician Lab II . . . . .            | 3 |
| PT | 122C | Pharmacy Technician Practicum . . . . .         | 5 |
| PT | 125  | Pharmacology for Pharmacy Technicians . . . . . | 3 |

### Required Arts & Sciences Courses

|                        |         |                                               |           |
|------------------------|---------|-----------------------------------------------|-----------|
| CHEM                   | 111/112 | Introduction to Chemistry . . . . .           | 4         |
| COMM                   | 221     | Interpersonal Communication Studies . . . . . | 3         |
| CSCI                   | 101     | Computer Literacy . . . . .                   | 4         |
| <b>Total . . . . .</b> |         |                                               | <b>36</b> |

**PT 110 Introduction to Pharmacy Technology 3 credit hours**  
*(Prerequisites: RDG 099 or equivalent, ENG 099 or equivalent, MATH 100A or equivalent; corequisites: PT 111L, PT 115, PT 116; pre- or corequisites: CHEM 111/112L, CSCI 101)* Provides a discussion of the pharmacy technician's role, the Pharmacy Practice Act, ethics, prescription preparation and institutional drug distribution systems.

**PT 111L Pharmacy Technician Lab I 2 credit hours**  
*(Corequisites: PT 110, PT 115, PT 116; pre- or corequisites: CHEM 111/112L, CSCI 101)* This campus lab provides opportunities for skill development in prescription preparation including oral, parenteral and IV preparation. Medical terminology and infection control, including universal precautions, are also emphasized. (6 hours a week)

**PT 115 Pharmacy Technician Anatomy and Physiology 3 credit hours**  
*(Corequisites: PT 110, PT 111L, PT 116; pre- or corequisites: CHEM 111/112L, CSCI 101)* This is an integrated study of the structures and function of the human body. Common disease entities related to body systems are presented.

**PT 116 Pharmacy Calculations 3 credit hours**  
*(Corequisites: PT 110, PT 111L, PT 115; pre- or corequisites: CHEM 111/112L, CSCI 101)* This math course is designed to provide skills in pharmaceutical calculations for oral, parenteral and IV preparations.

**PT 120 Advanced Pharmacy Technology 3 credit hours**  
*(Prerequisites: program director approval, PT 110, PT 111L, PT 115, PT 116, CHEM 111/112L, CSCI 101; corequisites: PT 121L, PT 122C, PT 125; pre- or corequisite: COMM 221)* This course covers compounding and packaging of drugs, preparation of intravenous admixtures, inventory maintenance, clerical skills and institutional drug distribution processes. Uniform fee: \$35

**PT 121L Pharmacy Technician Lab II 3 credit hours**  
*(Corequisites: PT 120, PT 122C, PT 125; pre- or corequisite: COMM 221)* This campus lab provides opportunities for skill development in compounding/reconstitution, labeling, aseptic technique, use of laminar flow hoods and use of the computer. (9 hours a week)

**PT 122C Pharmacy Technician Practicum 5 credit hours**  
 (Corequisites: PT 120, PT 121L, PT 125; pre- or corequisite: COMM 221) Students are assigned to institutional and community pharmacies for practical experience in applying what they have learned in classrooms and labs. (15 hours a week)

**PT 125 Pharmacology for Pharmacy Technicians 3 credit hours**  
 (Corequisites: PT 120, PT 121L, PT 122C; pre- or corequisite: COMM 221) This is a study of therapeutic drug categories.

## PHLEBOTOMY

The primary work of a phlebotomist is to draw blood specimens for testing from healthcare clients. The job includes establishing a professional relationship with the client, obtaining blood specimens by venipuncture and skin puncture procedures, performing bedside testing, preparing and maintaining equipment, entering data into the computer and performing clerical duties. The job requires a lot of walking, bending and standing.

Applicants are required to present evidence of current Hepatitis B (HBV), Tetanus, Rubella and Rubeola immunizations, PPD testing and certification in cardiopulmonary resuscitation (CPR) before beginning the clinical part of the course. Students should possess good organizational skills and the ability to prioritize duties, the ability to communicate with clients, and manual dexterity.

To receive a certificate, a student must complete the 7<sup>o</sup> -week, 195-hour program, which includes three weeks of classroom instruction in theory and lab and four weeks of experience in local hospital and/or clinics, with a grade of C or better in all courses. The program begins in the fall and spring terms.

A \$40 equipment fee covers the cost of a lab coat, health tests, name tags, parking fees and preventive lab tests in case of needle stick exposure.

Prerequisites are:

- high school diploma or equivalent
- MATH 099 or equivalent
- ENG 099 or equivalent
- RDG 099 or equivalent

*Credit Hours*

|                        |      |                                      |          |
|------------------------|------|--------------------------------------|----------|
| PHLB                   | 101  | Introduction to Phlebotomy . . . . . | 3        |
| PHLB                   | 122C | Clinical Phlebotomy . . . . .        | 3        |
| <b>Total</b> . . . . . |      |                                      | <b>6</b> |

**PHLB 101 Introduction to Phlebotomy 3 credit hours**  
 (Prerequisites: enrollment criteria for the program, RDG 099 or equivalent, ENG 099 or equivalent, MATH 099 or equivalent; corequisite: PHLB 121C) Includes basic anatomy and physiology and procedures for collecting blood from patients. (10 theory + 15 lab hours a week for 3 weeks)

*(Prerequisite: CPR certification; corequisite: PHLB 101L)* Supervised clinical course in which students practice phlebotomy skills and apply the theory learned in class. Uniform fee: \$40 (30 hours a week for 4 weeks)

## RESPIRATORY THERAPY

The respiratory care profession specializes in diagnostic testing, therapeutic treatment and critical care for patients suffering from life-threatening or chronically disabling cardiopulmonary disorders. A respiratory therapist is a graduate of a two-year associate of science or four-year bachelor of science degree program and is capable of performing at an advanced level.

Under medical direction, respiratory therapists assess and treat clinical problems. They monitor and evaluate cardiorespiratory function, perform diagnostic tests and treatments, research treatment effectiveness and act as consultants to physicians, nurses and other healthcare specialists. Respiratory therapists also serve as educators.

Employment opportunities are in urban and rural healthcare facilities and with medical equipment suppliers and agencies providing home healthcare and rehabilitation services.

The TVI Respiratory Therapy (RT) associate of science program includes classroom and laboratory instruction and supervised clinical experiences at local hospitals and other facilities. The curriculum includes basic and advanced instruction in cardiorespiratory anatomy, physiology and pathophysiology, critical care medicine, cardiopulmonary function, respiratory home care and pulmonary rehabilitation. The emphasis is on developing problem-solving and decision-making skills. The RT program includes instruction by faculty from the University of New Mexico Medical Center and School of Medicine.

The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and the Committee on Accreditation for Respiratory Care (COARC). Graduates are eligible to take the National Board for Respiratory Care (NBRC) Certification and Registry examinations to obtain Certified Respiratory Therapy Technician (CRTT) and Registered Respiratory Therapist (RRT) credentials. Successful completion of the certification exam qualifies individuals to become recognized as licensed Respiratory Care Practitioners (RCP) in New Mexico.

The program begins in the fall term. Orientation sessions covering the petition and selection process and respiratory care careers are scheduled regularly; students should contact the Health Occupations Department for dates and times or call the Health Occupations information hotline at 224-4161. Anyone interested in the Respiratory Therapy program is strongly encouraged to attend one of these orientation sessions.

Students are responsible for meeting the prerequisites. Arts & Sciences courses may be taken prior to entering the program and it is recommended that students complete as many of these courses as possible prior to entering the RT core courses. Once all requirements are fulfilled, students may petition for enrollment in the core courses of the RT curriculum. If the number of eligible petitioners exceeds the number of positions available,

preference will be given to those who have completed the most Arts & Sciences courses required for the RT curriculum. Petitioners will then be ranked by date of completion of petition eligibility requirements. If necessary, petitioners will be randomly selected. Additional positions may be made available for individuals with established residence in rural communities of New Mexico. The procedure for admission to the program under this condition is available from the director of the Respiratory Therapy program. Students must have a physical exam and submit a completed health form with evidence of current immunizations before beginning clinical courses.

Students pay an initial \$90 fee to cover the cost of the uniform, stethoscope, identification badges, CPR certification, parking fees and preventive lab tests in case of needle stick exposure. An additional \$20 fee during the second year covers parking. A \$75 fee for the last clinical course covers the cost of assessment exams to prepare for national board tests.

Prerequisites that must be completed prior to enrollment to RT courses are:

- declare RT as major
- high school diploma or equivalent
- MATH 100 or equivalent: may be fulfilled by ACT, SAT or Accuplacer tests or college coursework
- BIO 123/124L or equivalent
- ENG 101 or equivalent
- PSY 105 or SOC 101 or equivalent
- CSCI 101, CP 176L, BA 150, or equivalent
- TVI GPA 2.0 or higher

### Required Courses

|    |      |                                                      | <i>Credit Hours</i> |
|----|------|------------------------------------------------------|---------------------|
| RT | 110  | Respiratory Therapy Principles and Practices I.....  | 3                   |
| RT | 111  | Respiratory Therapy Principles and Practices II..... | 3                   |
| RT | 115L | Respiratory Therapy Lab I.....                       | 1                   |
| RT | 116L | Respiratory Therapy Lab II.....                      | 1                   |
| RT | 121C | Clinical Experiences I.....                          | 5                   |
| RT | 122C | Clinical Experiences II.....                         | 5                   |
| RT | 131  | Physics of Respiratory Therapy.....                  | 3                   |
| RT | 133  | Pharmacology of Respiratory Therapy.....             | 3                   |
| RT | 210  | Advanced Respiratory Therapy I.....                  | 3                   |
| RT | 215L | Advanced Respiratory Therapy Lab I.....              | 1                   |
| RT | 221C | Advanced Clinical Experiences I.....                 | 5                   |
| RT | 211  | Advanced Respiratory Therapy II.....                 | 3                   |
| RT | 216L | Advanced Respiratory Therapy Lab II.....             | 1                   |
| RT | 222C | Advanced Clinical Experiences II.....                | 5                   |
| RT | 212  | Advanced Respiratory Therapy III.....                | 3                   |
| RT | 217L | Advanced Respiratory Therapy Lab III.....            | 1                   |
| RT | 223C | Advanced, Clinical Experiences III.....              | 5                   |

## Required Arts & Sciences Courses

|                        |      |                                          |           |
|------------------------|------|------------------------------------------|-----------|
| <sup>2</sup> BIO       | 136  | Human Anatomy & Physiology . . . . .     | 1         |
| <sup>2</sup> BIO       | 139L | Human Anatomy & Physiology Lab . . . . . | 3         |
| MATH                   | 120  | Intermediate Algebra. . . . .            | 4         |
| CHEM                   | 111  | Introduction to Chemistry . . . . .      | 3         |
| CHEM                   | 112L | Introduction to Chemistry Lab . . . . .  | 1         |
| PHIL                   | 245M | Biomedical Ethics . . . . .              | 3         |
| BIO                    | 239  | Microbiology . . . . .                   | 3         |
| BIO                    | 239L | Microbiology Lab . . . . .               | 1         |
| <b>Total . . . . .</b> |      |                                          | <b>70</b> |

<sup>1</sup>A college physics course may be substituted for RT 131.

\*BIO 237/247L and BIO 238/248L may be substituted for BIO 136/139L.

In order to satisfy prerequisite and corequisite requirements, the following order of coursework is recommended:

- Fall Term: RT 110, RT 115L, RT 121C, RT 131 and BIO 136/139L
- Winter Term: RT 111, RT 116L, RT 122C, RT 133 and MATH 120
- Summer Term: RT 210, RT 215L, RT 221C, and PHIL 245M
- Fall Term: RT 211, RT 216L, RT 222C and CHEM 111/112L
- Winter Term: RT 212, RT 217L, RT 223C and BIO 239/239L

## Respiratory Therapy Advanced Placement

Advanced placement means enrollment in RT coursework at or above the level of RT 210. Persons wanting to transfer or challenge RT courses should contact the Health Occupations Department. There are two ways in which advanced placement can be granted to Respiratory Therapy applicants:

**Transfer:** Transfer credit may be awarded for documented equivalent therapist coursework completed at other CAAHEP/COARC accredited programs.

**Challenge:** Technician graduates with documented work experience in respiratory care may apply to challenge portions of the RT curriculum. There is a \$15 fee for each challenge exam.

Challenge and transfer applicants must meet all prerequisites for enrollment in the RT program. Entry will be granted on a space available basis.

**RT 110            Respiratory Therapy Principles and Practices I            3 credit hours**  
*(Prerequisites: Program director approval and BIO 123/124L, CSCI 101, ENG 101, PSY 105 or SOC 101; corequisites: RT 115L, RT 121C, RT 131, BIO 136/139L)* Introduces respiratory therapy as a health sciences profession. Includes cardiopulmonary assessment, medical gas administration, oxygen therapy, microbiology, infection control, equipment maintenance, incentive breathing exercises and chest physiotherapy. Uniform fee: \$90

**RT 111            Respiratory Therapy Principles and Practices II            3 credit hours**  
*(Prerequisites: BIO 136/139L, RT 110, RT 115L, RT 121C, RT 131; corequisites: RT 116L,*





(Prerequisite: AS RT Graduate and permission of program director) This course will allow graduates of the AS RT program to continue learning in conjunction with the UNM Health Sciences Center. Students will participate in nationally funded research projects that explore diagnosis, treatment, education and research.

\*RT 121C, RT 122C, RT 221C, RT 222C, and RT 223C: Students meet for lectures on the pathophysiology of the cardiopulmonary system given by the program's medical director and physicians from the UNM School of Medicine or other physicians in the community. Students participate in problem-based learning sessions with physicians to discuss clinical cases. They are required to complete case studies, article reviews and pathology reports and to present oral reports. Students interact with patients and physicians in clinical setting and during physician rounds.

## SURGICAL TECHNOLOGY

Surgical Technology is a two-term certificate program which presents the knowledge and skills necessary to work in hospital operating rooms and free-standing day surgery centers, including preparation of a surgical environment and functioning as a member of the operating room team. Graduates may take a national certification examination.

All students are required to meet program prerequisites prior to enrolling. Prior to clinical courses students are required to have current Basic Life Support (BLS) provider CPR certification, a physical exam, PPD and current immunizations (including tetanus, rubella, rubeola and hepatitis B). The TVI Health Center provides these services for a fee if the student does not have a private physician. Students must arrange for their own transportation to attend all classes, observations and clinical experiences, which may be required on weekends or evenings.

The program begins in the fall term. A \$35 uniform fee covers the cost of a lab coat, parking fees, name tags and preventive lab tests in case of a needle stick exposure.

Prerequisites are:

- high school diploma or equivalent
- MATH 099 and RDG 099 or equivalent
- completion of all required Arts & Sciences courses before fall term

### Required Arts & Science Courses

|                |                                             | <i>Credit Hours</i> |
|----------------|---------------------------------------------|---------------------|
| ENG 101 or 102 | College Writing . . . . .                   | 3                   |
| BIO 136/139L   | Anatomy and Physiology/Non-Majors . . . . . | 4                   |
| or             |                                             |                     |
| BIO 237/247L   | Anatomy and Physiology I . . . . .          | 4                   |
| and            |                                             |                     |
| BIO 238/248L   | Anatomy and Physiology II . . . . .         | 4                   |

**Required Surgical Technology Courses**

|                        |      |                                           |              |
|------------------------|------|-------------------------------------------|--------------|
| ST                     | 110  | Beginning Surgical Technology I . . . . . | 4            |
| ST                     | 112L | Surgical Technology Lab . . . . .         | 2            |
| ST                     | 114C | Surgical Technology Clinical I . . . . .  | 8            |
| ST                     | 120  | Advanced Surgical Technology II . . . . . | 4            |
| ST                     | 124C | Surgical Technology Clinical II . . . . . | 8            |
| <b>Total . . . . .</b> |      |                                           | <b>36-40</b> |

Fall Term: ST 110, ST 112L, ST 114C

Spring Term: ST 120, ST 124C

**ST 110 Beginning Surgical Technology I 4 credit hours**  
*(Prerequisites: ENG 101 or 102, BIO 136/139L or BIO 237/247L, COMM 221; corequisites: ST 112L, ST 114C)* Includes scope of practice, technologist role, medical ethics, medical terminology, basic principles of aseptic technique and anatomy and physiology applied to surgical procedures.

**ST 112L Surgical Technology Lab 2 credit hours**  
*(Corequisites: ST 110, ST 114C)* Provides opportunity to practice clinical skills and competencies developed in the classroom. Includes surgical technique (setting up the sterile field, scrubbing, gowning and gloving) and standards of practice. (6 hours a week for 15 weeks)

**ST 114C Surgical Technology Clinical I 8 credit hours**  
*(Corequisites: ST 110, ST 112L)* Application of surgical procedure theory and skills in the clinical setting. Course fee: \$35 (24 hours a week for 1.5 weeks)

**ST 120 Advanced Surgical Technology II 4 credit hours**  
*(Prerequisites: program director approval, ST 110, ST 112L, ST 114C; corequisite: ST 124C)* Continues surgical technology theory with a focus on general and specialty surgical procedures.

**ST 124C Surgical Technology Clinical II 8 credit hours**  
*(Corequisite: ST 120)* Continued application of surgical procedure theory and skills in the clinical setting with emphasis on a variety of specialty areas. (24 hours per week)

# TECHNOLOGIES

The high-skilled, high-tech jobs of the 21st century will demand specialized entry-level training and skill upgrading, and the Technologies Department offers both, along with state-of-the-art equipment to support them. Programs offered are:

|                                               |                                                     |
|-----------------------------------------------|-----------------------------------------------------|
| Architectural/Engineering Drafting Technology | Certificate and Associate of Applied Science Degree |
| Computing Technology                          | Certificate and Associate of Applied Science Degree |
| Construction Management Technology            | Associate of Applied Science Degree                 |
| Design Drafting Engineering Technology        | Associate of Applied Science Degree                 |
| Electronics Engineering Technology            | Associate of Applied Science Degree                 |
| Electronics Technology                        | Certificate and Associate of Applied Science Degree |
| Manufacturing Skills                          | Verification of Completion                          |
| Manufacturing Technology                      | Certificate and Associate of Applied Science Degree |
| Pre-Engineering                               | Associate of Science Degree                         |
| Residential Superintendent                    | Verification of Completion                          |
| Web Technology                                | Certificate and Associate of Applied Science Degree |

Several programs offer concentrations so students may specialize in their primary area of interest. The time necessary to complete most of the Technologies programs varies from 12 to 24 months if a student carries a full course load each term.

To enter Technologies courses, the student must meet the prerequisites of MATH 100B or equivalent, reading at a minimum of eighth-grade level and CP 176, Introduction to Technology Computer Applications, or equivalent. Technologies accepts BA 150 or CSCI 101 as equivalent to CP 176. The required Accuplacer test for entering students can determine if the math and reading prerequisites are already met.

Electronics Engineering Technology courses are offered at the Montoya Campus only.

The Business Computer Programming concentration is offered at both Main Campus and Montoya Campus. Other Technologies programs are offered only at the Main Campus. Selected classes are available at the Rio Rancho Campus and South Valley Campus. There are beginning groups in most Technologies majors each term.

Challenge examinations are available for some courses numbered below 200. The cost is \$15 per examination. For information concerning transferability of vocational courses either to or from TVI, students should see the appropriate director or program chair.

Optional courses are available to enhance the education of those students meeting the prerequisites. Optional courses and courses numbered 200 or above may not be offered every term and are subject to cancellation before the first day of the term due to insufficient enrollment; a minimum of 12 students is required. Some credit courses are offered in the evening. Information is available in the Schedule of Classes each term.

Students working toward an associate degree or a certificate must earn a grade of C or better in all occupational courses to meet graduation requirements. To qualify as a valid prerequisite a grade of C or better is also necessary for any class. Credit/no credit is not a grading option for students in Technologies courses.

## **ARCHITECTURAL/ENGINEERING DRAFTING TECHNOLOGY**

Architectural/Engineering Drafting Technology offers career preparation for persons with a strong interest in building design and construction.

The program integrates mathematics, technical writing and blueprint reading into the technical courses at all levels. Computer applications are emphasized throughout the program. The curriculum includes the principles of architectural and engineering graphics and the theory and practice of construction technology. To prepare students for work in the construction industry, the development and use of communication, teamwork and problem-solving skills are incorporated throughout the program.

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 with the opportunity for advancement into jobs with increasing responsibility and wider scope.

To enter Architectural/Engineering Drafting Technology courses the student must meet the prerequisites of MATH 100B, ENG 100, reading at a minimum of eighth-grade level, CP 176 or equivalents. Students must purchase their own drafting tools and construction hard hats.

Because TVI strives to respond to changes in the workforce needs of the design professions and the construction industry, the curriculum may be modified and topics courses added during the academic year. Students are encouraged to review the Schedule of Classes each term. Entry into a course without the prerequisite may be allowed with the permission of the program chair.

## COURSES REQUIRED FOR CERTIFICATE

*Credit Hours*

|                                    |      |                                               |              |
|------------------------------------|------|-----------------------------------------------|--------------|
| Term 1                             |      |                                               |              |
| ARDR                               | 107L | Architectural Drafting I .....                | 7            |
| ARDR                               | 108  | Architectural Mathematics.....                | 4            |
| ARDR                               | 109  | Building Materials and Methods I.....         | 4            |
| ARDR                               | 176  | Orientation to the Construction Industry..... | 1            |
| Term 2                             |      |                                               |              |
| ARDR                               | 213  | CAD Analysis.....                             | 4            |
| ARDR                               | 214L | Architectural CAD Drafting II .....           | 7            |
| ARDR                               | 115  | Building Materials and Methods II.....        | 4            |
| Term 3                             |      |                                               |              |
| ARDR                               | 119L | Architectural CAD Drafting III.....           | 7            |
| ARDR                               | 182  | Advanced CAD .....                            | 3            |
| BA                                 | 111  | Communications (7.5 weeks) .....              | 2            |
|                                    |      | or                                            |              |
| ENG                                | 101  | College Writing .....                         | 3            |
| BA                                 | 131  | Human Relations (7.5 weeks) .....             | 2            |
|                                    |      | or                                            |              |
| PHIL                               | 156  | Logic and Critical Thinking .....             | 3            |
| <b>Total for Certificate .....</b> |      |                                               | <b>45-47</b> |

## COURSES REQUIRED FOR ASSOCIATE DEGREE

|        |      |                                                       |   |
|--------|------|-------------------------------------------------------|---|
| Term 1 |      |                                                       |   |
| ARDR   | 107L | Architectural Drafting I .....                        | 7 |
| ARDR   | 108  | Architectural Mathematics.....                        | 4 |
| ARDR   | 109  | Building Materials and Methods I.....                 | 4 |
| ARDR   | 176, | Orientation to the Construction Industry.....         | 1 |
| Term 2 |      |                                                       |   |
| ARDR   | 213  | CAD Analysis.....                                     | 4 |
| ARDR   | 214L | Architectural CAD Drafting II .....                   | 7 |
| ARDR   | 115  | Building Materials and Methods II.....                | 4 |
| Term 3 |      |                                                       |   |
| ARDR   | 119L | Architectural CAD Drafting III.....                   | 7 |
| ARDR   | 182  | Advanced CAD .....                                    | 3 |
| ART    | 260  | Architectural History: Ancient through Modern.....    | 3 |
| PHYS   | 102  | Introduction to Physics.....                          | 3 |
| Term 4 |      |                                                       |   |
| ARDR   | 113  | Site Analysis .....                                   | 2 |
| ARDR   | 201  | Structural Systems Analysis.....                      | 4 |
| ARDR   | 203L | Structural Systems CAD Drafting .....                 | 5 |
| COMM   | 232  | Business and Professional Communication Studies ..... | 3 |

|                                         |      |                                                 |           |
|-----------------------------------------|------|-------------------------------------------------|-----------|
|                                         | or   |                                                 |           |
| ENG                                     | 101  | College Writing .....                           | 3         |
| MATH                                    | 120  | Intermediate Algebra .....                      | 3         |
| Term 5                                  |      |                                                 |           |
| ARDR                                    | 209L | Architectural Design .....                      | 3         |
| ARDR                                    | 212L | M/E CAD Systems Drafting .....                  | 5         |
| ARDR                                    | 215  | M/E Systems Analysis.....                       | 4         |
| ARDR                                    | 221  | Architectural/Engineering Drafting Seminar..... | 1         |
| PHIL                                    | 156  | Logic and Critical Thinking .....               | 3         |
|                                         | or   |                                                 |           |
| PSY                                     | 105  | Introduction to Psychology.....                 | 3         |
| <b>Total for Associate Degree .....</b> |      |                                                 | <b>80</b> |

### OPTIONAL COURSES

|      |      |                                                              |          |
|------|------|--------------------------------------------------------------|----------|
| ARDR | 180  | Fundamentals of Computer-Assisted Drafting .....             | 3        |
| ARDR | 181  | Intermediate Computer-Assisted Drafting.....                 | 3        |
| ARDR | 183  | Fundamentals of Microstation Computer-Assisted Drafting ...  | 3        |
| ARDR | 184  | Intermediate Microstation Computer-Assisted Drafting.....    | 3        |
| ARDR | 275  | Design Applications for Interiors .....                      | 3        |
| ARDR | 296  | Topics .....                                                 | Variable |
| ARDR | 297  | Special Problems .....                                       | Variable |
| ARDR | 298  | Internship .....                                             | 3        |
| ARDR | 299  | Cooperative Education , .....                                | 3        |
| CP   | 177L | Introduction to Computer Graphics .....                      | 3        |
| CP   | 178L | Computer Animation .....                                     | 3        |
| GIS  | 201  | Introduction to Geographic Information Systems .....         | 3        |
| GIS  | 202  | Geographic Information System Software Applications I.....   | 3        |
| GIS  | 203  | Geographic Information System Software Applications II ..... | 3        |

#### **ARDR 107L Architectural Drafting I 7 credit hours**

*(Pre- or corequisites: ARDR 108, ARDR 109, ARDR 176)* The fundamentals of architectural graphic representation are introduced as the foundation of all A/E drafting courses. Basic common assembly systems are explored and schedules are introduced. (3 theory + 12 lab hours a week) Course fee: \$15. Note: Students must provide their own drafting kits.

#### **ARDR 108 Architectural Mathematics 4 credit hours**

*(Prerequisite: MATH 100B)* Basic concepts of geometry and trigonometry are covered with an emphasis on architectural and engineering applications and calculator use. Students must provide a full-function scientific calculator with a ten-digit display. (4 theory + 1 lab hour a week)

#### **ARDR 109 Building Materials and Methods I 4 credit hours**

*(Prerequisites: CP 176, ENG 100 and MATH 100B or equivalent; corequisites: ARDR 108, ARDR 176)* Construction systems, sub-systems and components are studied. Emphasis is

placed on foundations, light wood frame and masonry construction. A construction hard hat is required. (4 theory + 1 lab hour a week)

**ARDR 113 Site Analysis 2 credit hours**  
(Prerequisite: ARDR 119L) Analytical factors of site design are examined, such as orientation and view, sound and light intrusions, contours and grading, drainage and foliage. Planning aspects of site size are introduced. (1 theory + 4 lab hours a week)

**ARDR 115 Building Materials and Methods II 4 credit hours**  
(Prerequisites: ARDR 107L, ARDR 108, ARDR 109, ARDR 176) This is a continuation of ARDR 109 with an intensified examination of exterior finish materials and systems and an introduction to structural materials and systems. (4 theory + 1 lab hour a week)

**ARDR 119L Architectural CAD Drafting III 7 credit hours**  
(Prerequisites: ARDR 213, ARDR 214L, ARDR 115) In this continuation of ARDR 107L, students perform design development and produce representative architectural construction and detail drawings using graphic, dimensioning and notation systems. (3 theory + 12 lab hours a week) Course fee: \$15

**ARDR 176 Orientation to the Construction Industry 1 credit hour**  
(Prerequisite: ENG 100 or equivalent) Topics include the construction environment, the related disciplines of architects, engineers, contractors, suppliers and other consultants and the drawings typical of each discipline. (1 theory + 1 lab hour a week)

**ARDR 180 Fundamentals of Computer-Assisted Drafting 3 credit hours**  
(Prerequisite: CP 176) The student is introduced to the fundamentals of computer-assisted drafting using AutoCAD. (2 theory + 3 lab hours a week) Course fee: \$15

**ARDR 181 Intermediate Computer-assisted Drafting 3 credit hours**  
(Prerequisite: ARDR 180) Topics include customized menu-making, attribute editing and extracting and the drawing of isometrics using AutoCAD. (2 theory + 3 lab hours a week) Course fee: \$15

**ARDR 182 Advanced Computer-assisted Drafting 3 credit hours**  
(Prerequisites: ARDR 213, ARDR 214L) This is an introduction to three-dimensional CAD modeling using AutoCAD to enhance graphic representation and visualization. (2 theory + 3 lab hours a week) Course fee: \$15

**ARDR 183 Fundamentals of Microstation CAD 3 credit hours**  
(Prerequisite: CP 176) The student is introduced to the fundamentals of computer-assisted drafting using Intergraph's Microstation CAD. (2 theory + 3 lab hours a week) Course fee: \$15

**ARDR 184 Intermediate Microstation CAD 3 credit hours**  
(Prerequisite: ARDR 183) Continuing ARDR 183 and Intergraph's Microstation software,

topics include user interface development and introduction to three-dimensional design. (2 theory + 3 lab hours a week) Course fee: \$15

**ARDR 201      Structural Systems Analysis      4 credit hours**

*(Prerequisites: ARDR 119L, ARDR 182, ART 260, PHYS 102. Corequisite: ARDR 203L)*

The basic principles of physics as they apply to construction and structural analysis are covered. Students are introduced to structural design in wood, steel and concrete and to elementary beam design problems. (4 theory + 1 lab hour a week)

**ARDR 203L      Structural Systems CAD Drafting      5 credit hours**

*(Prerequisites: ARDR 119L, ARDR 182, ART 260, PHYS 102. Corequisites: ARDR 201,*

*ARDR 113)* Students develop representative drawings of pre-cast and site-cast concrete, structural steel and heavy timber structures. Non-mathematical concepts of building structures and methods of construction are covered. (2 theory + 10 lab hours a week) Course fee: \$15

**ARDR 209L      Architectural Design      3 credit hours**

*(Pre- or corequisite: ARDR 176)* Lectures present design principles, theories, methods, process. Students design projects to learn by direct experience and role play as a designer communicating with a client, including sketching, and single point perspective. (2 theory + 3 lab hours a week) Course fee: \$15

**ARDR 212L      Mechanical/Electrical Systems CAD Drafting      5 credit hours**

*(Prerequisites: ARDR 201, ARDR 203L, MATH 120. Corequisite: ARDR 215)* Conventional drafting methods of mechanical and electrical systems including overlaying electrical, heating, ventilation and plumbing systems on architectural views are reviewed. Engineering drawings are developed and engineering graphic skills are emphasized. (2 theory + 10 lab hours a week) Course fee: \$15

**ARDR 213      CAD Analysis      4 credit hours**

*(Corequisite: ARDR 214L)* Beginning to advanced CAD concepts and commands are applied to the production and coordination of A/E construction drawings. (4 theory + 1 lab hour a week)

**ARDR 214L      Architectural CAD Drafting II      7 credit hours**

*(Prerequisite: ARDR 107L. Corequisite: ARDR 213)* The student develops representative construction drawings using CAD software commonly employed in the A/E industry. (3 theory + 12 lab hours a week) Course fee: \$15

**ARDR 215      Mechanical/Electrical Systems Analysis      4 credit hours**

*(Prerequisites: ARDR 201, ARDR 203L, MATH 120. Corequisite: ARDR 212L)* General theory and layout information and code requirements for non-residential systems are studied. Topics include lighting, plumbing and air conditioning. (4 theory + 1 lab hour a week)

**ARDR 221 Architectural/Engineering Drafting Seminar 1 credit hour**

*(Pre- or corequisites: ARDR 209L, ARDR 212L, ARDR 215)* The student develops a resume and presents a cumulative portfolio to a review committee. Needs, requirements, personnel procedures, expectations of employers and trends of the professional community are examined. (1 theory + 1 lab hour a week)

**ARDR 275 Design Applications for Interiors 3 credit hours**

*(Prerequisite: ENG 100 or equivalent)* An introduction to basic color systems and psychology, light and lighting, space planning, code applications of finish selections, fabrics and furniture styles is provided. (2 theory + 3 lab hours a week)

**ARDR 296 Topics Variable credit hours**

*(Prerequisite: permission of program chair)* Topics offered depend on requests from the community and available instructors.

**ARDR 297 Special Problems Variable credit hours**

*(Prerequisite: permission of program chair)* The student and instructor define a specific problem in the area of the student's interest and directly related to the program. The student develops and executes a solution using analytical and drafting techniques. An oral presentation may be required.

**ARDR 298 Internship 3 credit hours**

*(Prerequisite: permission of program chair)* In cooperation with local industry, the student works for one term on a cooperative basis in an appropriate, defined training program. The position is not paid.

**ARDR 299 Cooperative Education 3 credit hours**

*(Prerequisite: permission of program chair)* In cooperation with local industry, the student works for one term on a cooperative basis in an appropriate, defined training program. The position is paid.

**GIS 201 Introduction to Geographic Information Systems 3 credit hours**

*(Prerequisite: MATH 120, CP 176, ARDR 180)* This course introduces concepts of Geographic Information Systems including applications, components, mapping, topology, data and data capture.

**GIS 202 Geographic Information Systems Software with Applications 3 credit hours**

*(Prerequisite: GIS 201)* The concepts of Geographic Information Systems with computer applications are introduced. Actual projects are developed using the computer and related hardware. (2 theory + 3 lab hours week)

**GIS 203 Geographic Information Systems Software with Applications II 3 credit hours**

*(Prerequisite: GIS 202, programming language or permission of program chair)* In this

course students develop individual projects. (1 theory + 5 lab hours a week)

## COMPUTING TECHNOLOGY

In this program students have the opportunity to acquire the skills to solve information and management problems using computer hardware and software. Students have the choice of three concentrations: Business Computer Programming, Computer Animation and Computer Networking. Graduates are prepared for jobs as entry-level business applications programmers or computer animation technicians or network technicians, which can be the first steps to a career in the computer field. A new program is being added this year, the Web Technologies program. This program, a collaborative effort of the Technologies Department and the Business Occupations Department, is designed to meet the needs of an entirely new industry and career. For additional information, students should refer to the Web Technologies section of this catalog.

Computers currently used at TVI are the IBM ES-9000, IBM AS400, IBM microcomputers and compatibles and Silicon Graphics workstations. Mainframe, mini- and microcomputers and local area networks are used in Computing Technology courses.

Courses numbered below 200 give students a sound background in fundamental skills used on a wide variety of computers and computer-related equipment. Courses numbered above 200 continue to build computer application skills with emphasis on problem-solving techniques and the interactions among people and machines/computers/technology. A mainframe environment is used to teach three widely used business programming languages while three additional languages are taught on microcomputers. Optional courses are available.

Students entering Computing Technology courses must satisfy the prerequisites of MATH 100B, reading at a minimum of eighth-grade level and CP 176 or equivalent. If a student takes MATH 099 or MATH 100B, it is recommended that he or she also take CP 100.

Some advanced courses may be offered at only the Main Campus or at the Montoya Campus but not both.

Entry into a course without prerequisite classes may be allowed with the permission of the program director.

### BUSINESS COMPUTER PROGRAMMING CONCENTRATION

#### CERTIFICATE AND DEGREE REQUIREMENTS

|      |      |                                                        | <i>Credit Hours</i> |
|------|------|--------------------------------------------------------|---------------------|
| ACCT | 103  | Survey of Accounting for non-Business Majors . . . . . | 3                   |
| CP   | 103  | Mathematics for Computer Programmers. . . . .          | 4                   |
| CP   | 105  | Fundamentals of Computer Programming . . . . .         | 6                   |
| CP   | 101L | ANSI COBOL . . . . .                                   | 6                   |

|                                |      |                                                   |   |
|--------------------------------|------|---------------------------------------------------|---|
| CP                             | 120  | Mainframe/Mini Computer Operating Systems         | 3 |
|                                | or   |                                                   |   |
| CP                             | 216L | Personal Computer Operating Systems               | 3 |
| CP                             | 116  | Systems Analysis                                  | 3 |
| CP                             | 175L | Introduction to C Language Programming            | 3 |
| CP                             | 213  | Database Concepts                                 | 3 |
| CP                             | 214L | RPG III/400 Programming                           | 3 |
| CP                             | 283  | Overview of Network Operating System Environments | 3 |
| ENG                            | 101  | College Writing                                   | 3 |
| ENG                            | 119  | Technical Communications                          | 3 |
|                                | or   |                                                   |   |
| Communications (COMM) Elective |      |                                                   | 3 |

### Additional 18 Credits

|                                      |      |                                             |           |
|--------------------------------------|------|---------------------------------------------|-----------|
| CP                                   | 111L | Advanced ANSI COBOL                         | 6         |
| CP                                   | 201L | Interactive Programming Techniques          | 3         |
| CP                                   | 202L | Assembler Language Programming              | 6         |
| CP                                   | 217L | Personal Computer Assembler Language        | 3         |
| CP                                   | 218  | Introduction to Client/Server Technology    | 3         |
| CP                                   | 274L | Introduction to Unix and WANs               | 3         |
| CP                                   | 275  | Advanced UNIX and WAN Administration        | 3         |
| CP                                   | 278  | Advanced C Language Programming             | 3         |
| CP                                   | 280L | Advanced RPG III/400                        | 3         |
| CP                                   | 284  | Introduction to Visual Basic                | 3         |
| CP                                   | 287  | Advanced Visual Basic w/ Client/Server Apps | 3         |
| <b>Total Credits for Certificate</b> |      |                                             | <b>61</b> |

### Additional Degree Requirements

|                                                       |     |                                            |              |
|-------------------------------------------------------|-----|--------------------------------------------|--------------|
| MATH                                                  | 145 | Fundamentals of Probability and Statistics | 3            |
| MATH                                                  | 150 | Advanced Algebra                           | 4            |
|                                                       | or  |                                            |              |
| MATH                                                  | 180 | Elements of Calculus I                     | 3            |
| Social and Behavioral Sciences or Humanities Elective |     |                                            | 3            |
| <b>Total Credits for Degree</b>                       |     |                                            | <b>70-71</b> |

## COMPUTER ANIMATION CONCENTRATION

### CERTIFICATE AND DEGREE REQUIREMENTS

|     |     |                               |   |
|-----|-----|-------------------------------|---|
| ART | 106 | Drawing I                     | 3 |
| ART | 121 | Two-Dimensional Design        | 3 |
| ART | 122 | Three-Dimensional Design      | 3 |
| CP  | 170 | Techniques for Animation Text | 3 |

|      |      |                                                        |   |
|------|------|--------------------------------------------------------|---|
| CP   | 177L | Introduction to Computer Animation/Graphics . . . . .  | 3 |
| CP   | 178L | Computer Animation I . . . . .                         | 3 |
| CP   | 179  | Computer Animation II . . . . .                        | 3 |
| CP   | 180  | Computer Animation Strategies and Techniques . . . . . | 3 |
| CP   | 262  | Video Editing/Post Production . . . . .                | 3 |
| ELEC | 217  | Upgrading and Repairing PCs . . . . .                  | 3 |
| MMS  | 173  | Beginning Adobe Photoshop . . . . .                    | 1 |
| MMS  | 174  | Intermediate Adobe Photoshop . . . . .                 | 1 |
| MMS  | 175  | Advanced Adobe Photoshop . . . . .                     | 1 |
| THEA | 122  | Introduction to Theater . . . . .                      | 3 |

### Additional Certificate Requirements

|                |     |                           |   |
|----------------|-----|---------------------------|---|
| ENG            | 101 | College Writing . . . . . | 3 |
| Communications |     | (COMM) Elective . . . . . | 3 |

**Total Credits for Certificate . . . . . 42**

### Additional Degree Requirements

|      |      |                                                                 |   |
|------|------|-----------------------------------------------------------------|---|
| ACCT | 103  | Survey of Accounting for non-Business Majors . . . . .          | 3 |
| CP   | 103  | Mathematics for Computer Programmers . . . . .                  | 4 |
| CP   | 105  | Fundamentals of Computer Programming . . . . .                  | 6 |
| CP   | 175L | Introduction to C Language Programming . . . . .                | 3 |
| ENG  | 119  | Technical Communications . . . . .                              | 3 |
| MATH | 145  | Fundamentals of Probability and Statistics . . . . .            | 3 |
| MATH | 150  | Advanced Algebra . . . . .                                      | 4 |
|      | or   |                                                                 |   |
| MATH | 180  | Elements of Calculus I . . . . .                                | 3 |
|      |      | Social and Behavioral Sciences or Humanities Elective . . . . . | 3 |

### Additional Nine Credits

|      |      |                                                             |   |
|------|------|-------------------------------------------------------------|---|
| CP   | 260L | Open GL/Open Inventor . . . . .                             | 3 |
| CP   | 261L | Image Processing . . . . .                                  | 3 |
| CP   | 274L | Introduction to Unix and WANS . . . . .                     | 3 |
| CP   | 283  | Overview of Network Operating System Environments . . . . . | 3 |
| CP   | 284  | Introduction to Visual Basic . . . . .                      | 3 |
| ELEC | 276L | Soldering Techniques (7.5 weeks) . . . . .                  | 2 |
| MMS  | 280  | Postscript Illustration . . . . .                           | 3 |
| MMS  | 281  | Image Manipulation/Painting . . . . .                       | 3 |
| MMS  | 282  | Digital Prepress . . . . .                                  | 3 |

**Total Credits for Degree . . . . . 79-80**





project board techniques, structure for the short application, use of screenwriting software, information on the needs of Hollywood production houses and insights into legal aspects. (2 theory + 3 lab hours a week)

**CP 175L Introduction to C Language Programming 3 credit hours**  
(Prerequisite: CP 105 or DDET 115 or a programming language or permission of director) This is an introduction to C programming language using microcomputers. (2 theory + 3 lab hours a week) Course fee: \$10

**CP 176 Introduction to Technology Computer Applications 4 credit hours**  
(Recommended prerequisite: typing proficiency) Introductory computer hardware and software topics are covered with a mix of lecture and hands-on instruction. Students are introduced to operating systems (MS-DOS, Windows), software applications (word processing, spreadsheets) and database concepts with emphasis on technology applications. Course fee: \$15

**CP 177L Intro to Computer Animation/Graphics 3 credit hours**  
(Prerequisites: CP 176 and ART 106 or CP 113; pre- or corequisite: ART 121, or permission of director) Various topics desirable in industry are explored. Windows 95, Lightwave 3D animation software, modeling, texturing, lighting, animation and other bundled tools are reviewed. Additional lab hours outside the regular class time are required. (2 theory + 3 lab hours a week) Course fee: \$15

**CP 178L Computer Animation I 3 credit hours**  
(Prerequisites: CP 177L and ART 121; pre- or corequisite: ART 122) Extensive use of Alias 3D computer animation software involving modeling, rendering, morphing, texture mapping, animation and image processing. Additional lab hours outside the regular class time are required. (2 theory + 3 lab hours a week)

**CP 179 Computer Animation II 3 credit hours**  
(Prerequisites: CP 178L, MMS 175, ART 122 and CP 170) Advanced techniques such as inverse kinematics, constraints, character building, particle emission and dynamic forces are explored. Team project participation is emphasized. Additional lab hours outside the regular class time are required. (2 theory + 3 lab hours a week) Course fee: \$15

**CP 180 Computer Animation Strategies and Techniques 3 credit hours**  
(Prerequisites: CP 177L, MMS 175 and ART 121; pre- or corequisite: ART 122) The use of Lightwave 3D animation software is expanded to professional applications. Insights into the work environment and employer expectations are emphasized. Additional lab hours outside the regular class time are required. (2 theory + 3 lab hours a week)

**CP 201L Interactive Programming Technique 3 credit hours**  
(Prerequisites: CP 111L and CP 120) Students develop interactive business applications on the IBM mainframe in the VSE environment. Command level CICS and VSAM file structures are used. (2 theory + 3 lab hours a week)

- CP 202L Assembler Language Programming 6 credit hours**  
*(Prerequisites: CP 101L and CP 120)* Techniques necessary to write Assembler language programs are introduced on an IBM mainframe. (4 theory + 6 lab hours a week)
- CP 213 Database Concepts 3 credit hours**  
*(Prerequisite: CP 105 or CP 176 or permission of director)* General concepts and organization of database systems are included along with practical applications. Microcomputers are used. (2 theory + 3 lab hours a week) Course fee: \$10
- CP 214L Report Program Generator III/400 3 credit hours**  
*(Prerequisite: a programming language or permission of director)* Introduction to the RPG III/400 programming language used in business organizations. Students become familiar with the basic coding parameters and code a variety of business functions. (2 theory + 3 lab hours a week)
- CP 216L Personal Computer Operating Systems 3 credit hours**  
*(Prerequisite: CP 105)* An introduction to major PC operating systems. Topics include MS-DOS, Windows, Windows 95 and UNIX. (2 theory + 3 lab hours a week) Course fee: \$10
- CP 217L Personal Computer Assembler Language 3 credit hours**  
*(Prerequisites: CP 105 and CP 216L)* This course introduces the student to Assembler language programming using the microcomputer. (2 theory + 3 lab hours a week) Course fee: \$10
- CP 218 Introduction to Client/Server Technology 3 credit hours**  
*(Prerequisites: CP 283 and CP 216L)* The concepts of client/server technology are introduced. (2 theory + 3 lab hours a week)
- CP 220 Advanced Database Concepts 3 credit hours**  
*(Prerequisite: CP 213 or permission of director)* Continuation of CP 213 in a multi-user network environment with emphasis on relational databases, advanced queries, SQL, macros, custom forms, and incorporating Visual Basic within Access.
- CP 235 Programming in JAVA 3 credit hours**  
*(Prerequisite: CP 175L or CP 281L or CP 284 or permission of director)* This accelerated introduction covers the fundamentals of JAVA including class design and implementation, the AWT, exception handling, JAVA I/O, threads and event-driven programming for applets and applications. Other topics including interactive Internet applets are covered as time permits. (2 theory + 3 lab hours a week)
- CP 260L Open GL/Open Inventor 3 credit hours**  
*(Prerequisites: CP 175L and CP 177L or permission of director)* The use of this graphics library interface that runs on a wide variety of platforms is covered. Students write graphics applications using the object-oriented 3D graphics developer tool kit. (2 theory + 3 lab

hours a week)

**CP 261L      Image Processing      3 credit hours**

*(Prerequisite: CP 175L or permission of director)* The use and applications of PC and Unix-based development environments are covered. Applications include image processing, data manipulation and scientific visualization. (2 theory + 3 lab hours a week)

**CP 262      Video Editing/Post Production      3 credit hours**

*(Prerequisite: CP 178L or permission of director)* Nonlinear video editing techniques are presented. Applications include video and audio editing skills, compositing, special effects and broadcast quality production procedures. (2 theory + 3 lab hours a week) Course fee: \$10

**CP 274L      Introduction to Unix and WANs      3 credit hours**

*(Prerequisite: CP 105 and CP 216 or permission of director)* An introduction to Unix with emphasis on running a network. Topics include the Unix command line, X-Windows and connection/connection-less networking schemes (TCP/IP and NFS). Wide Area Network data delivery and protocols are introduced. (2 theory + 3 lab hours a week) Course fee: \$10

**CP 275      Advanced Unix and WAN Administration      3 credit hours**

*(Prerequisite: CP 274L or permission of director)* Course involves building and customizing a Unix host in a network environment and administering it remotely. Remote access protocols (PPP, SLIP, etc.) and the mechanics of remote data delivery are covered. (2 theory + 3 lab hours a week)

**CP 278      Advanced C Language Programming      3 credit hours**

*(Prerequisite: CP 175L or permission of director)* Students with considerable programming experience write programs working with data structures such as stacks, linked lists, binary search trees and self-balancing trees. (2 theory + 3 lab hours a week) Course fee: \$10

**CP 280L      Advanced RPG III/400      3 credit hours**

*(Prerequisite: CP 214L)* A continuation of CP 214L with emphasis on file processing and interactive techniques. (2 theory + 3 lab hours a week) Course fee: \$10

**CP 281L      C++ Language Programming      3 credit hours**

*(Prerequisite: CP 278 or permission of director)* Programming principles of the computer language C++ are covered. This is an advanced programming class. (2 theory + 3 lab hours a week) Course fee: \$10

**CP 282      Networking Topologies/NOS Environments      3 credit hours**

*(Prerequisite: CP 176 or permission of director)* An introduction to building networks and running a network operating system. Using the OSI model as a guide, students study cabling protocols, data link protocols (Ethernet, FDDI, ATM, etc.) and network protocols (IP and IPX). Switches, bridges, gateways and routers are introduced. (2 theory + 3 lab hours a week)

- CP 283 Overview of Network Operating System Environments 3 credit hours**  
*(Prerequisite: CP 176 or permission of director)* An introduction to installing and administering the most common microprocessor-based NOS environments (Novell, Windows NT, etc.). Students run these NOS systems on a variety of data link protocols and install and maintain devices for inter-network communication. (2 theory + 3 lab hours a week)
- CP 284 Introduction to Visual Basic 3 credit hours**  
*(Prerequisites: CP 105 and a programming language or DDET 115 or permission of director)* Students are introduced to the capabilities of the development environment and common programming techniques required to create simple, useful applications. (2 theory + 3 lab hours a week)
- CP 285 Troubleshooting Networks 3 credit hours**  
*(Prerequisite: CP 282 or permission of director)* Problems course. Students run a wide variety of applications over a network and apply troubleshooting techniques using software and LAN analyzing equipment. (2 theory + 3 lab hours a week)
- CP 287 Advanced Visual Basic with Client/Server Applications 3 credit hours**  
*(Prerequisite: CP 284 or permission of director)* Constructing advanced applications using Visual Basic, with emphasis in client/server development. (2 theory + 3 lab hours a week)
- CP 296 Topics Variable credit hours**  
*(Prerequisite: permission of director)* Topics vary based on the requests from the community and available software, hardware and instructors.
- CP 297 Special Problems Variable credit hours**  
*(Prerequisite: permission of director)* The student and instructor define a specific problem in the area of the student's interest and directly related to the program. The student develops and executes a solution using analytical techniques appropriate to the problem. An oral presentation may be required.
- CP 298 Internship 3 credit hours**  
*(Prerequisite: permission of director)* In cooperation with local industry, the student works for one term on a cooperative basis in an appropriate training program. The position is not paid.
- CP 299 Cooperative Education 3 credit hours**  
*(Prerequisite: permission of director)* In cooperation with local industry, the student works for one term on a cooperative basis in an appropriate training program. The position is paid.

# CONSTRUCTION MANAGEMENT TECHNOLOGY

Construction Management provides coursework leading to an associate of applied science degree. A pilot concentration is offered this year leading to a verification of completion in Residential Superintendent. Students are prepared for mid-management (supervisory) positions in the construction industries, including general contractor, estimator, assistant project manager, inspector, office manager, crew leader, expeditor, superintendent, sales representative and computer specialist. Construction is defined as all the disciplines that contribute to the building process, from inception to demolition.

State-of-the-art computer applications, interfacing between applications and report analysis are used throughout the program. Some courses also use computer-based learning modules.

National accreditation from the American Council for Construction Education (ACCE) is being sought for the degree program. Many of the course credits are transferable to the University of New Mexico towards a baccalaureate degree in construction management.

Because the level of experience for entering students varies, it is imperative that new students interview with the program chairperson to develop an appropriate schedule. Additional information is available from the program chair at (505) 224-3783.

## COURSES REQUIRED FOR RESIDENTIAL SUPERINTENDENT VERIFICATION OF COMPLETION

|                                                   |      |                                                        | <i>Credit Hours</i> |
|---------------------------------------------------|------|--------------------------------------------------------|---------------------|
| Term 1                                            |      |                                                        |                     |
| CM                                                | 130  | Construction Detailing .....                           | 3                   |
| CM                                                | 132L | Construction Graphics/Engineering Methods .....        | 3                   |
| or                                                |      |                                                        |                     |
| ARDR                                              | 180  | Fundamentals of Computer-Assisted Drafting .....       | 3                   |
| CM                                                | 171  | Construction Materials and Techniques .....            | 3                   |
| CM                                                | 175  | Contractor Preparation .....                           | 3                   |
| CP                                                | 176  | Introduction to Technology Computer Applications ..... | 4                   |
| Term 2                                            |      |                                                        |                     |
| CM                                                | 256  | Statics .....                                          | 3                   |
| CM                                                | 257  | Computer Estimating .....                              | 3                   |
| CM                                                | 277  | Construction Management, Planning and Estimating ..... | 3                   |
| CM                                                | 278  | Mechanical and Electrical Blueprint Reading.....       | 2                   |
| COMM                                              | 221  | Interpersonal Communication Studies.....               | 3                   |
| <b>Total for Verification of Completion .....</b> |      |                                                        | <b>30</b>           |

## COURSES REQUIRED FOR ASSOCIATE DEGREE

|        |      |                                                 | <i>Credit Hours</i> |
|--------|------|-------------------------------------------------|---------------------|
| Term 1 |      |                                                 |                     |
| CM     | 130  | Construction Detailing .....                    | 3                   |
| CM     | 132L | Construction Graphics/Engineering Methods ..... | 3                   |

|                                             |               |                                                            |              |
|---------------------------------------------|---------------|------------------------------------------------------------|--------------|
|                                             | or            |                                                            |              |
| ARDR                                        | 180           | Fundamentals of Computer-Assisted Drafting . . . . .       | 3            |
| CM                                          | 171           | Construction Materials and Techniques . . . . .            | 3            |
| CM                                          | 175           | Contractor Preparation . . . . .                           | 3            |
| CP                                          | 176           | Introduction to Technology Computer Applications . . . . . | 4            |
| Term 2                                      |               |                                                            |              |
| CM                                          | 256           | Statics . . . . .                                          | 3            |
| CM                                          | 257           | Computer Estimating . . . . .                              | 3            |
| CM                                          | 277           | Construction Management, Planning and Estimating . . . . . | 3            |
| CM                                          | 278           | Mechanical and Electrical Blueprint Reading . . . . .      | 2            |
| COMM                                        | 221           | Interpersonal Communication Studies . . . . .              | 3            |
| Term 3                                      |               |                                                            |              |
| ACCT                                        | 101A          | Financial Accounting IA . . . . .                          | 3            |
| MATH                                        | 120           | Intermediate Algebra . . . . .                             | 4            |
| EPT                                         | 213           | Occupational Safety . . . . .                              | 3            |
| CM                                          | 261L          | Construction Surveying . . . . .                           | 3            |
| Humanities/Social                           |               | and Behavioral Science . . . . .                           | 3            |
| Term 4                                      |               |                                                            |              |
| CM                                          | 201           | Commercial Construction Theory . . . . .                   | 2            |
|                                             | or            |                                                            |              |
| ARDR                                        | 115           | Building Materials and Methods II . . . . .                | 4            |
| CM                                          | 201L          | Commercial Construction Lab . . . . .                      | 3            |
| CM                                          | 263           | Construction Equipment and Methods . . . . .               | 3            |
| BA                                          | 211           | Business Law . . . . .                                     | 3            |
| ENG                                         | 101           | College Writing . . . . .                                  | 3            |
| PHYS                                        | 102 or higher | . . . . .                                                  | 3            |
| <b>Total for Associate Degree . . . . .</b> |               |                                                            | <b>63-65</b> |

### Optional Course

|    |     |                                 |   |
|----|-----|---------------------------------|---|
| CM | 299 | Cooperative Education . . . . . | 3 |
|----|-----|---------------------------------|---|

**CM 130 Construction Detailing 3 credit hours**

Basics of construction detailing and working drawing sets. (2 theory + 2.5 lab hours a week)

**CM 132L Construction Graphics/Engineering Methods 3 credit hours**

*(Pre- or corequisite: CM 130 or department approval)* Principles and techniques of computer graphic applications used in the construction industry. (1 theory + 5 lab hours a week)

**CM 171 Construction Materials and Techniques 3 credit hours**

*(Pre- or corequisite: CM 130 or department approval)* Plan reading, elementary construction techniques, materials and construction documents; primary emphasis is on Uniform Building Code plan check.

**CM 175            General Contractor Preparation            3 credit hours**

Licensing requirements, rules and regulations, business law, the UBC, construction methods and contract management are covered.

**CM 201            Commercial Construction Theory            2 credit hours**

*(Prerequisite: CM 258 or department approval)* An introduction to commercial drawing sets, including UBC, code compliance and cost per square foot. Commercial and residential buildings are contrasted.

**CM 201L          Commercial Construction Lab            3 credit hours**

*(Corequisite: CM 201 or department approval)* Costs, specifications, codes and personal safety.

**CM 256            Statics            3 credit hours**

Through the use of graphic and algebraic formulas, static forces, equilibrium, moments, stress and strain are introduced. Beams and columns in wood, steel and concrete are covered in reference to the UBC and institutional manuals.

**CM 257            Computer Estimating            3 credit hours**

*(Prerequisites: CM 171 and CP 176 or department approval)* Using software, students complete cost estimates on buildings based on Construction Specifications Institute formatted budgets and take-off techniques. (1 theory + 5 lab hours a week)

**CM 261L          Construction Surveying            3 credit hours**

*(Pre- or corequisite: MATH 123 or department approval)* An introduction to the basic techniques and equipment used in surveying, including tape, level and theodolite; leveling, distance and angle measurement; traversing; and note-keeping. (1 theory + 5 lab hours a week)

**CM 263            Construction Equipment and Methods            3 credit hours**

*(Corequisites: CM 258 and MATH 120 or department approval)* Large equipment used to move, lift and assemble components of commercial buildings is presented. Earth work, concrete forms and construction are covered, along with steel, wood and masonry methods, productivity, licenses and contract options.

**CM 277            Construction Management, Planning and Estimating            2 credit hours**

*(Pre- or corequisite: CM 257 or department approval)* Topics include introduction to construction processes, techniques for transforming contract documents and estimating. State-of-the-art scheduling techniques are surveyed, including computer-assisted packages. Students break down a job into its basic tasks and reassemble it in a framework that controls time, work materials and related activities.

**CM 278            Mechanical and Electrical Blueprint Reading            2 credit hours**

Materials and equipment used in the electrical and mechanical systems of commercial building, and associated codes and costs, are introduced.

**CM 296 Special Topics 1-6 credit hours**

*(Prerequisite: department approval)* In-depth study of topics related to construction management.

**CM 299 Cooperative Education 3 credit hours**

The student is employed at an approved course-related work site and applies learned theory based on goals and objectives.

## DESIGN DRAFTING ENGINEERING TECHNOLOGY

Design Drafting Engineering Technology is a complex field for persons with a strong interest in electronics and/or mechanical design. The program places 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 TVI chapter of the Society of Manufacturing Engineers (SME) and attend local SME seminars.

Students must buy their own drafting tools and a full-function scientific calculator.

It is strongly recommended that all beginning students meet with the program chair to plan an individual course of study. Entry into a course without the necessary prerequisites may be allowed with the permission of the program chair.

The Design Drafting Engineering Technology associate degree program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET).

DDET course credits will transfer to New Mexico State University or other schools offering baccalaureate degrees in engineering technology. Additional information is available from the program chair at (505) 224-3353.

### *Credit Hours*

|      |      |                                           |   |
|------|------|-------------------------------------------|---|
| DDET | 102L | Manufacturing Methods . . . . .           | 3 |
| DDET | 106L | Basic CADD . . . . .                      | 3 |
| DDET | 111L | Mechanical Detailing . . . . .            | 3 |
| DDET | 115L | Intermediate CADD . . . . .               | 3 |
| DDET | 201L | Mathematics of Mechanics . . . . .        | 3 |
| CP   | 175L | Intro to C Language Programming . . . . . | 3 |
|      | or   |                                           |   |
| CP   | 284  | Intro to Visual Basic . . . . .           | 3 |
| DDET | 205L | Machine Design . . . . .                  | 4 |
| DDET | 206L | Jig and Fixture Design . . . . .          | 4 |
| DDET | 211L | Electromechanical Drafting . . . . .      | 3 |



**DDET 106L Basic CADD 3 credit hours**

*(Pre- or corequisite: DDET 104L or permission of program chair)* 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 hard-copy output. (2 theory + 3 lab hours a week) Course fee: \$15

**DDET 111L Mechanical Detailing 3 credit hours**

*(Prerequisite: DDET 104L)* This course introduces the development of detail drawings including layout, view selection, notation, dimensioning, ASME Y-14.5 tolerancing and revisions of mechanical parts. (2 theory + 4 lab hours a week)

**DDET 115L Intermediate CADD 3 credit hours**

*(Prerequisite: DDET 106L. Pre- or corequisite: DDET 111L)* The student continues use of CADD software in an applied situation. Advanced drawings include insertions, layering, auto-dimensioning and constructing library files. (2 theory + 3 lab hours a week) Course fee: \$15

**DDET 116L Basic Electronic Drafting 3 credit hours**

*(Prerequisite: DDET 104L)* Electronic drafting fundamentals including symbolic representation of electronic components and devices, block and connection diagramming, cable drawings and circuit schematics are presented. Basic electronics theory and mathematics applications are included. (2 theory + 3 lab hours a week)

**DDET 201L Mathematics of Mechanics 3 credit hours**

*(Prerequisite: MATH 121 or MATH 150)* A graphical analysis of the relationships among points, lines and planes in space is presented. Advanced applications of trigonometry to dynamic mechanisms and point locations are covered. (2 theory + 3 lab hours a week)

**DDET 205L Machine Design Layout 4 credit hours**

*(Prerequisites: DDET 111L, DDET 115L. Pre- or corequisite: DDET 201L or MATH 123)* Application of machine design principles 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 are introduced. Layout formats, part searches and material specifications are made for each design. (3 theory + 3 lab hours a week)

**DDET 206L Jig and Fixture Design 4 credit hours**

*(Prerequisite: DDET 205L)* 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 hydraulic devices are covered. Students make various designs in the TVI machine shop. (3 theory + 3 lab hours a week)

**DDET 211L Electromechanical Drafting 3 credit hours**

*(Prerequisite: DDET 205L)* The study, experimentation, design and drafting of electromechanical devices and systems. Principal components of hydraulic, pneumatic drive sys-



# ELECTRONICS ENGINEERING TECHNOLOGY

The Electronics Engineering Technology program emphasizes the application of scientific and engineering methods along with related technical skills to support engineering activity in research, development, production, maintenance and operation.

This program represents a rigorous, engineering-type course of study. Lectures, laboratory work and considerable homework provide the basis for the skills necessary for employment in a broad occupational area at levels between the electronics technician and the electrical engineer.

TVI laboratory 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 should have high standards of excellence.

It is strongly recommended that all beginning students meet with the program chair to plan an individual course of study.

Pre- or corequisites for Electronics Engineering Technology courses may be waived by the program chair for a student who has related experience and/or coursework. Credit for an EET course may be given if an official transcript from another institution indicating an equivalent course is approved by the program chair and department dean. Credit for an EET course may be given by passing a challenge exam.

Students in this program are required to purchase laboratory manuals, calculator and drafting tool kit.

The Electronics Engineering Technology associate degree program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET).

EET course credits will transfer to New Mexico State University or other schools offering baccalaureate degrees in engineering technology. Additional information is available from the program chair at (505) 224-5919.

## Electronics Engineering Technology Course Offerings by Term

| EET    | 107L | 109L | 113L | 117L | 119L | 207L | 208L | 209L | 218L | 219L |
|--------|------|------|------|------|------|------|------|------|------|------|
| Fall   | E    | A    |      |      |      | A    | E    | A    | A    | E    |
| Spring | A    | E    | A    | A    | A    |      |      |      | E    | A    |
| Summer |      |      | A    | E    | E    | E    | A    | E    |      |      |

E = Evening Hours

A = Afternoon Hours

### *Credit Hours*

|       |     |                               |   |
|-------|-----|-------------------------------|---|
| ENG   | 101 | College Writing.....          | 3 |
| ENG   | 119 | Technical Communications..... | 3 |
| *MATH | 121 | College Algebra.....          | 3 |

|                                 |          |                                       |              |
|---------------------------------|----------|---------------------------------------|--------------|
|                                 | or       |                                       |              |
| *MATH                           | 150      | Advanced Algebra                      | 4            |
| EET                             | 107L     | Graphics and Analytical Methods       | 3            |
| EET                             | 109L     | Circuit Analysis I                    | 5            |
| EET                             | 113L     | Structured Computer Programming       | 3            |
| EET                             | 117L     | Digital Electronics I                 | 3            |
| *MATH                           | 123      | Trigonometry                          | 3            |
| *MATH                           | 162      | Calculus I                            | 4            |
|                                 | or       |                                       |              |
| *MATH                           | 180      | Elements of Calculus I                | 3            |
| EET                             | 119L     | Circuit Analysis II                   | 5            |
| EET                             | 207L     | Digital Electronics II                | 3            |
| EET                             | 208L     | Microprocessors                       | 4            |
| EET                             | 209L     | Electronic Devices                    | 5            |
| EET                             | 218L     | Microprocessor Interfacing            | 3            |
| EET                             | 219L     | Electronic Systems                    | 5            |
| CHEM                            | 111/112L | Introduction to Chemistry/Lab         | 4            |
|                                 | or       |                                       |              |
| CHEM                            | 121/121L | General Chemistry/Lab                 | 4            |
| PHYS                            | 151/153L | Physics I/Lab                         | 5            |
|                                 | or       |                                       |              |
| PHYS                            | 160/163L | General Physics I/Lab                 | 5            |
|                                 |          | Humanities or Social Science Elective | 3            |
| <b>Total Credits for Degree</b> |          |                                       | <b>66-68</b> |

\*A minimum of eight credit hours in math above MATH 120 are required for graduation.

**EET 107L Graphics and Analytical Methods 3 credit hours**  
*(Pre- or corequisite: MATH 150 or MATH 121)* Mechanical and electronic drafting methods, including schematic preparation, printed circuit layout, chassis definition and wiring, are studied. Lab time is devoted to techniques required to prepare drawings. Students gain experience in word processing, spreadsheet preparation, graphics, data base preparation and CAD. (2 theory + 3 lab hours a week) Course fee: \$15

**EET 109L Circuit Analysis I 5 credit hours**  
*(Pre- or corequisites: ENG 101, EET 107L, MATH 150 or MATH 121)* Passive DC circuits are 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 is presented along with concepts of energy, power and efficiency. Computers are used for spreadsheet preparation, graphics and word processing. (3 theory + 5 lab hours a week)

**EET 113L Structured Computer Programming 3 credit hours**  
*(Prerequisite: MATH 121 or MATH 150)* This is a course in beginning computer programming using engineering applications. (2 theory + 2.5 lab hours a week) Course fee: \$15

**EET 117L      Digital Electronics I      3 credit hours**

*(Prerequisite: EET 109L)* Combinational logic and integrated circuits are analyzed and designed using Boolean algebra, Karnaugh maps and logic diagrams. Number systems, binary codes and code conversions are studied along with flip flops, multivibrators and circuit applications. Lab work emphasizes wiring and troubleshooting skill while confirming circuit design objectives. (3 theory + 1 lab hour a week)

**EET 119L      Circuit Analysis II      5 credit hours**

*(Prerequisite: EET 109L, Pre- or corequisites: ENG 119, MATH 123, MATH 162 or MATH 180)* Passive AC circuits with dependent and independent sources are studied along with network theorems, phasor analysis, AC measurements, power factor analysis/correction, sweep generation usage and Fourier series. Computers are used for complex mathematical problem solving, spreadsheet preparation, graphics, word processing and CAD. (3 theory + 5 lab hours a week)

**EET 207L      Digital Electronics II      3 credit hours**

*(Prerequisite: EET 117L)* Logic circuit decoders, encoders, multiplexers, counters and registers are studied along with ADCs, DACs, RAM, ROM and applications. (3 theory + 1 lab hours a week)

**EET 208L      Microprocessors      4 credit hours**

*(Prerequisite: EET 113L, Pre- or corequisite: EET 207L)* Microprocessors and microcomputers are studied in depth with emphasis on machine and assembly language programming. Interrupts and DOS entry points are introduced. (3 theory + 3 lab hours a week)

**EET 209L      Electronic Devices      5 credit hours**

*(Pre- or corequisite: EET 119L)* Diodes, bipolar transistors, FETs and circuits including rectifiers, zener diode regulators, clippers, clampers and amplifiers are studied. Transistor modeling and circuit analysis/design are stressed along with computer use for circuit analysis, spreadsheet preparation, graphics and word processing. (3 theory + 5 lab hours a week)

**EET 218L      Microprocessor Interfacing      3 credit hours**

*(Prerequisites: EET 208L, EET 209L)* I/O devices including printers, terminals and proto board circuits are interfaced to a microcomputer. Each student makes an oral presentation and prepares documentation describing system operation and organization along with block diagrams, schematics and structured software. (2 theory + 2.5 lab hours a week)

**EET 219L      Electronic Systems      5 credit hours**

*(Prerequisite: EET 209L)* Electronic system schematics are studied along with frequency considerations, decibel usage, differential and operational amplifiers, power supplies, thyristors, PLLs, oscillators and feedback concepts. Each student prepares a technical manual for a computer-controlled system. Video monitor basics and introductory transmission line theory are presented. Computers are used for advanced circuit analysis, instrument control, data logging and word processing. (3 theory + 5 lab hours a week)



## CERTIFICATE AND DEGREE CORE REQUIREMENTS

*Credit Hours*

|      |      |                                   |   |
|------|------|-----------------------------------|---|
| ELEC | 103A | Electronics Fundamentals A        | 4 |
|      | and  |                                   |   |
| ELEC | 103B | Electronics Fundamentals B        | 4 |
|      | or   |                                   |   |
| ELEC | 103L | Electronics Fundamentals          | 8 |
| ELEC | 104  | Electronics Mathematics           | 5 |
| ELEC | 105L | Digital Circuits                  | 4 |
| ELEC | 111L | Introduction to Photonics         | 4 |
| ELEC | 114A | Semiconductor Devices A           | 3 |
|      | and  |                                   |   |
| ELEC | 114B | Semiconductor Devices B           | 4 |
|      | or   |                                   |   |
| ELEC | 114L | Semiconductor Devices             | 7 |
| ELEC | 118A | Electromechanical Devices A       | 3 |
|      | and  |                                   |   |
| ELEC | 118B | Electromechanical Devices B       | 3 |
|      | or   |                                   |   |
| ELEC | 118L | Electromechanical Devices         | 6 |
| ELEC | 203A | Introduction to Microprocessors A | 3 |
|      | and  |                                   |   |
| ELEC | 203B | Introduction to Microprocessors B | 3 |
|      | or   |                                   |   |
| ELEC | 203L | Introduction to Microprocessors   | 6 |
| ELEC | 205L | Analog Circuits                   | 6 |
| ELEC | 214L | Troubleshooting Techniques        | 3 |

## CONCENTRATION OPTIONS FOR CERTIFICATE OR DEGREE

### STUDENT-SELECTED CONCENTRATION: 18 CREDITS

|      |      |                                        |   |
|------|------|----------------------------------------|---|
| ELEC | 217  | Upgrading and Repairing PCs            | 3 |
| ELEC | 220  | Digital Signal Processing Systems      | 6 |
| ELEC | 223  | RF/Consumer Electronics                | 6 |
| CP   | 282  | Networking Topologies/NOS Environments | 3 |
| CP   | 283  | Overview of NOS Environments           | 3 |
| CP   | 285  | Troubleshooting Networks               | 3 |
| LEOT | 205L | Introduction to Laser Systems          | 4 |
| LEOT | 206  | Optics                                 | 6 |
| PC   | 212L | Vacuum Systems (7.5 weeks)             | 2 |

### PROCESS CONTROL CONCENTRATION

|    |     |                           |   |
|----|-----|---------------------------|---|
| PC | 201 | Electromechanical Systems | 3 |
|----|-----|---------------------------|---|

|    |      |                                                        |   |
|----|------|--------------------------------------------------------|---|
| PC | 211  | Power RF (7.5 weeks) . . . . .                         | 2 |
| PC | 212L | Vacuum Systems (7.5 weeks) . . . . .                   | 2 |
| PC | 203  | PLC Theory and Applications (7.5 weeks) . . . . .      | 2 |
| PC | 204  | Feedback Theory and Applications (7.5 weeks) . . . . . | 2 |
| PC | 205  | Sensor Theory and Applications (7.5 weeks) . . . . .   | 2 |

Plus five additional credits from among these courses:

|     |          |                                                                |   |
|-----|----------|----------------------------------------------------------------|---|
| PC  | 206      | CIM Theory and Applications (7.5 weeks) . . . . .              | 2 |
| PC  | 207      | Mobile Robot Design and Construction (7.5 weeks) . . . . .     | 2 |
| PC  | 208      | Industrial Robot Theory and Applications (7.5 weeks) . . . . . | 2 |
| SMT | 201/201L | Semiconductor Manufacturing Technology I Theory/Lab . . . . .  | 3 |
| SMT | 211/211L | Semiconductor Manufacturing Technology II Theory/Lab . . . . . | 3 |

### Additional Certificate Requirements

|     |     |                                       |   |
|-----|-----|---------------------------------------|---|
| BA  | 111 | Communications (7.5 weeks) . . . . .  | 2 |
|     | or  |                                       |   |
| ENG | 101 | College Writing . . . . .             | 3 |
| BA  | 131 | Human Relations (7.5 weeks) . . . . . | 2 |
|     | or  |                                       |   |
| PSY | 105 | Introduction to Psychology . . . . .  | 3 |

**Total Credits for Certificate . . . . . 71-73**

### Additional Degree Requirements

|      |                                                 |                                                      |   |
|------|-------------------------------------------------|------------------------------------------------------|---|
| ENG  | 119                                             | Technical Communications . . . . .                   | 3 |
| CHEM | 111/112L                                        | Introduction to Chemistry/Lab . . . . .              | 4 |
|      | or                                              |                                                      |   |
| CHEM | 121/121L                                        | General Chemistry/Lab . . . . .                      | 4 |
|      | Humanities or Social Science Elective . . . . . |                                                      | 3 |
| MATH | 162                                             | Calculus I . . . . .                                 | 4 |
|      | or                                              |                                                      |   |
| MATH | 180                                             | Elements of Calculus . . . . .                       | 3 |
|      | or                                              |                                                      |   |
| MATH | 150                                             | Advanced Algebra . . . . .                           | 4 |
|      | or                                              |                                                      |   |
| MATH | 145                                             | Introduction to Probability and Statistics . . . . . | 3 |
| PHYS | 151/153L                                        | Physics I/Lab . . . . .                              | 5 |
|      | or                                              |                                                      |   |
| PHYS | 160                                             | General Physics . . . . .                            | 4 |

**Total Credits for Degree . . . . . 84-86**

### Optional Courses

|    |      |                                             |   |
|----|------|---------------------------------------------|---|
| CP | 175L | C Language Programming . . . . .            | 3 |
| CP | 177L | Introduction to Computer Graphics . . . . . | 3 |





**ELEC 203L Introduction to Microprocessors 6 credit hours**

*(Prerequisites: ELEC 118L, CP 176)* The course centers on the 8088 microprocessor in an MS-DOS environment. Programs are written in Assembly language and in a higher level language to drive the PC's serial, I/O, parallel printer port and disk drives. The students build individual buffered interfaces that connect with the PC's I/O backplane for their custom I/O applications. (4 theory + 6 lab hours a week)

**ELEC 205L Analog Circuits 6 credit hours**

*(Prerequisite: ELEC 114L)* Circuitry involved in an analog system is covered. Discrete transistor circuits and classes of operation are studied. Signal generation and active filters using operational amplifiers are presented. Fundamentals of modulation and demodulation are also covered. (4 theory + 6 lab hours a week)

**ELEC 214L Troubleshooting Techniques 3 credit hours**

*(Prerequisite: ELEC 205L or equivalent)* Students apply troubleshooting techniques to a complete electronic system. Emphasis is on systematic analysis to locate problems. (2 theory + 3 lab hours a week)

**ELEC 217 Upgrading and Repairing PCs 3 credit hours**

*(Recommended corequisite: CP 176 or permission of director)* Basic aspects of computer repair, troubleshooting techniques with and without software, modification and replacement are covered. The emphasis is on microcomputers and related hardware. (2 theory + 3 lab hours a week) Course fee: \$15

**ELEC 220 Digital Signal Processing Systems 6 credit hours**

*(Prerequisite: ELEC 203L, ELEC 205L)* Covers op-amp theory, applications and limitations, analog circuit analysis and filtering techniques, including passive, active and digital filters. Interfacing methods between analog signals and digital computers are presented. Topics include address decoding, DAC and ADC applications, parallel and serial interfaces and transmission line theory. Offered fall and spring terms only. (4 theory + 6 lab hours a week)

**ELEC 223 RF/Consumer Electronics 6 credit hours**

*(Prerequisite: ELEC 114L, ELEC 205L)* An introduction to radio frequency communication theory, circuits and problems. Students will study analog and digital video and audio transmission, recording and playback methods, and equipment with emphasis on alignment, troubleshooting and repair. (4 theory + 6 lab hours a week)

**ELEC 276L Soldering Techniques (7.5 weeks) 2 credit hours**

Students use a modern repair center to learn high-reliability soldering and desoldering techniques. Non-destructive printed circuit board repairs and component replacement techniques also are used. (1 theory + 4 lab hours a week) Course fee: \$15

**ELEC 279 Electronics Refresher 3 credit hours**

*(Prerequisite: completion of an electronics program or equivalent)* This is a review of

electronics, including basics, semiconductors, op-amps, digital electronics and microprocessors,

**ELEC 282 Pulsed Power 3 credit hours**  
(Prerequisite: ELEC 114L or permission of director) The generation, transmission and measurement of high-voltage, pulsed power systems are studied. Offered fall term only.

**ELEC 296 Topics Variable credit hours**  
(Prerequisite: advanced Electronics student) The topics depend on the requests from the community.

**ELEC 297 Special Problems Variable credit hours**  
(Prerequisite: advanced Electronics student) The student is given a problem to investigate and solve. The student designs the solution using a combination of techniques.

**ELEC 298 Internship 3 credit hours**  
(Prerequisite: permission of director) In cooperation with local industry, the student works for one term on a cooperative basis in an appropriate training program. The position is not paid.

**ELEC 299 Cooperative Education 3 credit hours**  
(Prerequisite: permission of director) In cooperation with local industry, the student works for one term on a cooperative basis in an appropriate training program. The position is paid.

**LEOT 205L Introduction to Laser Systems 4 credit hours**  
(Prerequisite: ELEC 111L) The theory and operation of solid-state and gas lasers are studied. Continuous wave and pulsed systems are discussed. Laboratory exercises provide hands-on operation of various types of lasers. Offered fall term. (4 theory + 1 lab hours a week)

**LEOT 206 Optics 6 credit hours**  
(Prerequisite: ELEC 111L) Lenses and optical systems are studied from the standpoints of geometric and wave optics. Laboratory experiments are performed. Offered fall term. (4 theory + 6 lab hours a week)

**LEOT 217L Advanced Laser Systems with Applications 6 credit hours**  
(Prerequisite: LEOT 205L) The applications of laser systems to industry are covered. Students write a technical paper. Calibration techniques, interferometry and Q-switching are examples of laboratory exercises. Offered spring term. (4 theory + 6 lab hours a week)

**PC 201 Electromechanical Systems 3 credit hours**  
(Prerequisites: ELEC 114L, ELEC 118L) This course uses electromechanical systems donated by local industries to expose students to equipment schematics, maintenance procedures and troubleshooting. Students practice preventive and corrective maintenance. (2 theory + 3 lab hours a week) Course fee: \$25

**PC 203            PLC Theory and Applications (7.5 weeks)            2 credit hours**

*(Prerequisites: ELEC 203L, ELEC 205L or permission of director)* Topics include ladder logic diagrams, PLC hardware, software and applications of PLCs. A series of PLC lab exercises and a PLC project are required. Offered fall and summer terms only. (2 theory + 3 lab hours per week) Course fee: \$25

**PC 204            Feedback Theory and Applications (7.5 weeks)            2 credit hours**

*(Prerequisites: ELEC 203L, ELEC 205L)* Topics include various types of feedback systems, components and operation. The applications of such systems are studied. Offered fall and spring terms only. (2 theory + 3 lab hours per week) Course fee: \$25

**PC 205            Sensor Theory and Applications (7.5 weeks)            2 credit hours**

*(Prerequisites: ELEC 203L, ELEC 205L)* Topics include force, photonic and temperature sensors. A project designed and constructed by students is required. Offered fall and spring terms only. (2 theory + 3 lab hours per week) Course fee: \$25

**PC 206            CIM Theory and Applications (7.5 weeks)            2 credit hours**

*(Prerequisites: ELEC 203L, ELEC 205L)* Topics include theory of computer integrated manufacturing (CIM), CIM systems used in industry and the programming and operation of such systems. Offered fall and summer terms only. (2 theory + 3 lab hours per week) Course fee: \$25

**PC 207            Mobile Robot Design and Construction (7.5 weeks)            2 credit hours**

*(Prerequisites: ELEC 203L, ELEC 205L)* Topics include microcontrollers, DC motors, motor drive circuitry and communications technology. A project designed and constructed by students is required. Offered spring term. (2 theory + 3 lab hours per week) Course fee: \$25

**PC 208            Industrial Robot Theory and Applications (7.5 wks)            2 credit hours**

*(Prerequisites: ELEC 203L, ELEC 205L)* Theory, operation and maintenance procedures of industrial robots are included along with a project (utilizing an industrial robot system) designed and constructed by students. Offered spring term. (2 theory + 3 lab hours per week) Course fee: \$25

**PC 211            Power RF (7.5 weeks)            2 credit hours**

*(Prerequisite: ELEC 114L)* RF energy and its applications in manufacturing industries are presented. Topics include plasma physics, RF applications, safety, RF generators, transmission lines and RF interference. (2 theory + 3 lab hours a week) Course fee: \$25

**PC 212L            Vacuum Systems (7.5 weeks)            2 credit hours**

*(Prerequisite: ELEC 118L)* This is a study of vacuum technology and vacuum systems. Topics include gas laws and properties, operation and applications of vacuum pumps, gauges and valves and systems leak detection. (2 theory + 3 lab hours a week) Course fee: \$25

# MANUFACTURING TECHNOLOGY

The Manufacturing Technology program, offering both certificate and associate degree options, provides students with a broad base of skills in analog and digital electronics along with a good communication and science background. The program offers concentrations in Semiconductor Manufacturing, Facilities Maintenance and General Manufacturing, one of which a student must complete along with core courses for an associate degree. To receive a certificate in Manufacturing Technology with a Semiconductor concentration, the student must complete all defined courses.

Training is provided in the fundamental concepts of electronics and mechanical components. Circuits which have application in the semiconductor, digital equipment manufacturing, measurement and control are covered.

Laboratory facilities containing modern equipment for testing, troubleshooting, calibrating, analyzing and designing electronic systems and for processing wafers are used in the Semiconductor concentration. Such systems include computers, electronic instruments, wafer processing equipment and electro-mechanical equipment. Other laboratory facilities provide the ability to analyze and test various materials and components.

Students entering Manufacturing Technology courses must meet the prerequisites of MATH 100B or equivalent on placement test, reading at a minimum of eighth-grade level and CP 176 or equivalent. If a student does not meet the prerequisites, it is recommended that he or she enroll in classes offered by the Department of Adult & Developmental Education (DADE).

Entry into a course without the prerequisite may be allowed with the permission of the program director.

## CERTIFICATE PROGRAM REQUIREMENTS

|                                             |     |                                                        | <i>Credit Hours</i> |
|---------------------------------------------|-----|--------------------------------------------------------|---------------------|
| ELEC                                        | 104 | Electronics Mathematics .....                          | 5                   |
| ENG                                         | 101 | College Writing.....                                   | 3                   |
| *CP                                         | 176 | Introduction to Technology Computer Applications ..... | 3                   |
| *MT                                         | 105 | Manufacturing Concepts .....                           | 4                   |
| MT                                          | 205 | Applied Science .....                                  | 4                   |
| MT                                          | 281 | Statistical Controls .....                             | 3                   |
| Communications Elective.....                |     |                                                        | 3                   |
| Humanities or Social Science Elective ..... |     |                                                        | 3                   |
| <b>Total Credits for Certificate .....</b>  |     |                                                        | <b>28</b>           |

\*A student can receive a Manufacturing Skills Verification of Completion upon completion of CP 176 and MT 105.

## DEGREE PROGRAM

### Prerequisites

|      |      |                                                       |   |
|------|------|-------------------------------------------------------|---|
| CP   | 176L | Introduction to Technology Computer Applications..... | 3 |
| ELEC | 104  | Electronics Mathematics .....                         | 5 |
|      | or   |                                                       |   |
| MATH | 120  | Intermediate Algebra.....                             | 4 |

### Degree Requirements

|                                             |          |                                  |           |
|---------------------------------------------|----------|----------------------------------|-----------|
| MT                                          | 105      | Manufacturing Concepts .....     | 4         |
| MT                                          | 205      | Applied Science .....            | 4         |
| MT                                          | 281      | Statistical Controls .....       | 3         |
| ELEC                                        | 103L     | Electronics Fundamentals .....   | 8         |
| ELEC                                        | 105L     | Digital Circuits .....           | 4         |
| ELEC                                        | 118L     | Electromechanical Devices .....  | 6         |
| ENG                                         | 101      | College Writing .....            | 3         |
| ENG                                         | 119      | Technical Communications.....    | 3         |
| #MATH                                       | 121      | College Algebra .....            | 3         |
| CHEM                                        | 121/121L | General Chemistry I .....        | 4         |
| PC                                          | 212L     | Vacuum Systems (7.5 weeks) ..... | 2         |
| *Communication Electives .....              |          |                                  | 6         |
| Humanities or Social Science Elective ..... |          |                                  | 3         |
| <b>Total Credit Hours .....</b>             |          |                                  | <b>56</b> |

\*Not required for Facilities Maintenance concentration

\*Only 3 credit hours are required for Facilities Maintenance concentration

### FACILITIES MAINTENANCE CONCENTRATION

|                           |      |                                                  |           |
|---------------------------|------|--------------------------------------------------|-----------|
| ACHR                      | 133  | Refrigerant Management .....                     | 2         |
| ACHR                      | 134  | Motors and Controls.....                         | 2         |
| ACHR                      | 151  | Air Conditioning .....                           | 2         |
| ACHR                      | 152  | Air Conditioning Control .....                   | 2         |
| ACHR                      | 212  | Hot Water and Steam Generation Systems .....     | 2         |
| ACHR                      | 213  | Controls I .....                                 | 2         |
| ACHR                      | 214  | Chilled Water Systems .....                      | 2         |
| ACHR                      | 215  | Controls II .....                                | 2         |
| ELTR                      | 212  | Programmable Logic Controller .....              | 4         |
| ELTR                      | 213L | PLC Installation and Operation .....             | 3         |
| CM                        | 278  | Mechanical and Electrical Blueprint Reading..... | 2         |
| PLMB                      | 102  | Plumbing Systems Theory.....                     | 1         |
| PLMB                      | 102L | Plumbing Systems Lab .....                       | 2         |
| <b>Credit Hours .....</b> |      |                                                  | <b>28</b> |

## SEMICONDUCTOR MANUFACTURING CONCENTRATION

|                               |          |                                                        |           |
|-------------------------------|----------|--------------------------------------------------------|-----------|
| ELEC                          | 114L     | Semiconductor Devices . . . . .                        | 7         |
| PC                            | 201      | Electromechanical Systems . . . . .                    | 3         |
| PC                            | 211      | Power RF (7.5 weeks) . . . . .                         | 2         |
| SMT                           | 201/201L | Semiconductor Manufacturing Technology I Theory/Lab .  | 3         |
| SMT                           | 211/211L | Semiconductor Manufacturing Technology II Theory/Lab . | 3         |
|                               |          | Technical Elective . . . . .                           | 3         |
| <b>Credit Hours . . . . .</b> |          |                                                        | <b>21</b> |

## GENERAL MANUFACTURING CONCENTRATION

|                               |      |                                                   |           |
|-------------------------------|------|---------------------------------------------------|-----------|
| PC                            | 203  | PLC Theory and Applications (7.5 weeks) . . . . . | 2         |
| MATT                          | 102  | MATT Blueprint Reading I . . . . .                | 2         |
| MATT                          | 103L | Basic Lathe Principles . . . . .                  | 2         |
| MATT                          | 104L | Basic Milling Machine Principles . . . . .        | 2         |
| MATT                          | 117L | Intermediate Lathe Principles . . . . .           | 2         |
| MATT                          | 120L | Intermediate Milling Machine Principles . . . . . | 2         |
| MATT                          | 122L | Computer Numerical Control I . . . . .            | 2         |
| MATT                          | 218L | Computer Numerical Control II . . . . .           | 2         |
| WELD                          | 106L | Introduction to SMAW . . . . .                    | 2         |
| DDET                          | 106L | Basic CADD . . . . .                              | 3         |
| <b>Credit Hours . . . . .</b> |      |                                                   | <b>21</b> |

**Total Credits Required for Degree . . . . . 74-75**

### Communication Electives

|      |     |                                                           |   |
|------|-----|-----------------------------------------------------------|---|
| COMM | 221 | Interpersonal Communication Studies . . . . .             | 3 |
| COMM | 223 | Introduction to Nonverbal Communication Studies . . . . . | 3 |
| COMM | 225 | Small-Group Communication Studies . . . . .               | 3 |
| COMM | 232 | Business and Professional Communication Studies . . . . . | 3 |

### Technologies Electives

|      |      |                                             |          |
|------|------|---------------------------------------------|----------|
| CP   | 175L | C Language Programming . . . . .            | 3        |
| MT   | 280  | Introduction to Quality Assurance . . . . . | 3        |
| ELEC | 111L | Introduction to Photonics . . . . .         | 4        |
| ELEC | 203L | Introduction to Microprocessors . . . . .   | 6        |
| ELEC | 205L | Analog Circuits . . . . .                   | 6        |
| ELEC | 214L | Troubleshooting Techniques . . . . .        | 3        |
| ELEC | 276L | Soldering Techniques (7.5 weeks) . . . . .  | 2        |
| ELEC | 296  | Topics . . . . .                            | Variable |
| ELEC | 297  | Special Problems . . . . .                  | Variable |
| ELEC | 298  | Internship . . . . .                        | 3        |
| ELEC | 299  | Cooperative Education . . . . .             | 3        |

**MT 105                    Manufacturing Concepts                    4 credit hours**

*(Prerequisites: MATH 99, ENG 100, ELEC 100, CP 176)* Introduces variety of concepts commonly used in manufacturing environment. Also explores a variety of manufacturing methods and their applications. (3 theory + 3 lab hours a week)

**MT 205                    Applied Science                    4 credit hours**

*(Prerequisites: ELEC 104 or MATH 120, CHEM 121/121L)* Students study some of the basic principles of chemistry and physics, along with the mechanical, chemical, and thermal properties of some materials. Applications to high-tech industries such as semiconductor industries are explored. (3 theory + 3 lab hours a week)

**MT 280                    Introduction to Quality Assurance                    3 credit hours**

This course examines the philosophies of Deming, Juran and Taguchi as they apply to quality in the workplace. Total Quality Management (TQM), self-directed teams and teamwork also are studied. (Previously offered as DDET 280)

**MT 281                    Statistical Controls                    3 credit hours**

*(Prerequisite: any college algebra)* The uses of hardware and software as they apply to quality assurance are featured in this course. Students study design of experiments, sampling techniques, SPC, control chart application and development and process reliability. (Previously offered as DDET 281) (2 theory + 3 lab hours a week)

**SMT 201                    Semiconductor Manufacturing                    2 credit hours**  
**Technology I Theory**

*(Prerequisites: ELEC 103L, ELEC 105L and MT 205. Corequisite: SMT 201L)* Students are introduced to integrated circuit manufacturing, including the basics of semiconductor materials and devices, integrated circuits, cleanroom technology and topics in wafer processing. Laboratory exercises are conducted in a cleanroom. (2 theory hours a week)

**SMT 201L                    Semiconductor Manufacturing                    1 credit hour**  
**Technology I Lab**

*(Pre- or corequisite: SMT 201)* This is the lab course for SMT 201. Students meet once per week. (3 lab hours a week) Course fee: \$60

**SMT 211                    Semiconductor Manufacturing                    2 credit hours**  
**Technology II Theory**

*(Prerequisites: SMT 201, SMT 201L, ELEC 114L. Corequisite: SMT 211L)* Students study the topics presented in SMT 201 with greater detail. Laboratory experiments include the process steps to construct and test simple PMOS field effect transistor devices.

**SMT 211L                    Semiconductor Manufacturing                    1 credit hour**  
**Technology II Lab**

*(Pre- or corequisite: SMT 211)* This is the lab course for SMT 211. (3 lab hours a week) Course fee: \$60

# PRE-ENGINEERING

The Pre-Engineering program includes general background courses in mathematics and science and an introduction to the concepts and methods of engineering. The associate degree represents a halfway point for those seeking a bachelor's degree in engineering, as graduates may continue their studies in a specialized area of engineering at a four-year college. Students may contact the director for information on course articulation agreements with the New Mexico universities offering engineering degrees.

This is not a professional degree and does not prepare one for specific job opportunities; rather, it provides a broad educational background on which to build a career through further education or work experience. The student who is interested in a two-year program that will provide specific work skills should consider other programs at TVI.

Degree requirements include completion of all courses in the curriculum (or equivalent), a total of 68 hours, and two courses at the University of New Mexico (these and any UNM electives will require UNM tuition).

## ASSOCIATE DEGREE REQUIREMENTS

|                                                  |          |                                         | <i>Credit Hours</i> |
|--------------------------------------------------|----------|-----------------------------------------|---------------------|
| <b>Term 1</b>                                    |          |                                         |                     |
| MATH                                             | 162      | Calculus I.....                         | 4                   |
| ENG                                              | 101      | College Writing . . . . .               | 3                   |
| CHEM                                             | 121/121L | General Chemistry I.....                | 4                   |
| CSCI                                             | 155      | Intro to Computer Programming . . . . . | 3                   |
| *Humanities or Social Science Elective.....      |          |                                         | 3                   |
| <b>Term 2</b>                                    |          |                                         |                     |
| DDET                                             | 102L     | Manufacturing Methods . . . . .         | 3                   |
| PHYS                                             | 160      | General Physics I.....                  | 4                   |
| MATH                                             | 163      | Calculus II . . . . .                   | 4                   |
| CHEM                                             | 122/122L | General Chemistry II.....               | 4                   |
| <b>Term 3</b>                                    |          |                                         |                     |
| MATH                                             | 264      | Calculus III.....                       | 4                   |
| PHYS                                             | 161      | General Physics II . . . . .            | 4                   |
| MT                                               | 281      | Statistical Controls . . . . .          | 3                   |
| *Humanities or Social Science Elective . . . . . |          |                                         | 3                   |
| <sup>1</sup> Technical Elective.....             |          |                                         | 3                   |
| <b>Term 4</b>                                    |          |                                         |                     |
| <sup>3</sup> CE                                  | 202      | Engineering Statics (UNM) . . . . .     | 3                   |
| PHYS                                             | 262      | General Physics III . . . . .           | 4                   |
| <sup>3</sup> EECE                                | 203      | Circuit Analysis (UNM) . . . . .        | 3                   |
| <sup>1</sup> Technical Elective.....             |          |                                         | 3                   |
| *Humanities or Social Science Elective . . . . . |          |                                         | 3                   |
| <b>Total for Associate Degree . . . . .</b>      |          |                                         | <b>65</b>           |

<sup>1</sup>The technical electives may be chosen from computer software, computer hardware or other engineering courses at TVI or UNM. Electives may be chosen in conference with the program director who can guide selections according to articulation agreements.

<sup>2</sup>The Humanities and Social Science electives may be chosen from a variety of Arts & Science courses in the TVI Catalog. Students planning to transfer to complete degree programs are advised to refer to the catalogs of their receiving institution.

<sup>3</sup>The courses at UNM were required in the Pre-Engineering degree and are currently required in UNM's bachelor's engineering degree programs. They are recommended as electives in the Commission on Higher Education's core program for the associate degree in pre-engineering. TVI may replace these courses later with courses offered in the Technologies Department.

## WEB TECHNOLOGIES

The Web Technologies program is designed to meet the needs of an entirely new industry and career path involving the Internet's world wide web. The one-year certificate offers basic entry-level skills in the field. These skills include HTML, basic scripting, design, programming and web server management. The degree offers advanced skills in web management, critical thinking and communication.

To enter the Web Technologies program, the student must meet the prerequisites of MATH 100 or equivalent, RDG 99 or equivalent, and CP 176 or BA 150 or equivalent. A typing speed of 25 words per minute is recommended.

### CERTIFICATE AND DEGREE REQUIREMENTS

|     |     |                                                         | <i>Credit Hours</i> |
|-----|-----|---------------------------------------------------------|---------------------|
| BA  | 121 | Business English . . . . .                              | 3                   |
| BA  | 122 | Business Writing . . . . .                              | 3                   |
|     | or  |                                                         |                     |
| ENG | 101 | College Writing . . . . .                               | 3                   |
| BA  | 222 | Principles of Marketing . . . . .                       | 3                   |
| MMS | 220 | Desktop Publishing on a Mac . . . . .                   | 3                   |
| CP  | 105 | Fundamentals of Computer Programming . . . . .          | 6                   |
| CP  | 132 | Introduction to Scripting . . . . .                     | 3                   |
| CP  | 213 | Database Concepts . . . . .                             | 3                   |
| CP  | 282 | Networking Topologies/Network OS Environments . . . . . | 3                   |
| MMS | 160 | Introduction to the Internet . . . . .                  | 1                   |
| MMS | 171 | Hypertext Markup Language (HTML) . . . . .              | 1                   |
| MMS | 172 | Web Construction Coding . . . . .                       | 1                   |
| MMS | 173 | Beginning Photoshop . . . . .                           | 1                   |
| MMS | 174 | Intermediate Photoshop . . . . .                        | 1                   |
| MMS | 175 | Advanced Photoshop . . . . .                            | 1                   |
| MMS | 176 | Introduction to Internet Commerce . . . . .             | 1                   |

|                                            |     |                       |           |
|--------------------------------------------|-----|-----------------------|-----------|
| MMS                                        | 276 | Web Site Design ..... | 3         |
| <b>Total Credits for Certificate .....</b> |     |                       | <b>37</b> |

### ADDITIONAL DEGREE REQUIREMENTS

|                                               |      |                                                         |           |
|-----------------------------------------------|------|---------------------------------------------------------|-----------|
| CP                                            | 135  | Advanced Scripting .....                                | 3         |
| CP                                            | 220  | Advanced Database .....                                 | 3         |
| CP                                            | 235  | Programming in JAVA .....                               | 3         |
| CP                                            | 274L | Introduction to Unix and WANs .....                     | 3         |
| CP                                            | 275  | Advanced Unix and WAN Administration... ..              | 3         |
| CP                                            | 283  | Overview of Network Operating System Environments ..... | 3         |
| COMM                                          | 221  | Interpersonal Communication Studies.....                | 3         |
|                                               | or   |                                                         |           |
| COMM                                          | 232  | Business and Professional Communication Studies .....   | 3         |
|                                               | or   |                                                         |           |
| COMM                                          | 240  | Organizational Communication Studies .....              | 3         |
| ENG                                           | 101  | College Writing .....                                   | 3         |
| MATH                                          | 119  | Methods of Problem Solving .....                        | 4         |
|                                               | or   |                                                         |           |
| MATH                                          | 120  | Intermediate Algebra.....                               | 4         |
| PHIL                                          | 156  | Logic and Critical Thinking .....                       | 3         |
| Social and Behavioral Sciences Elective ..... |      |                                                         | 3         |
| <b>Total Credits for Degree .....</b>         |      |                                                         | <b>71</b> |

# TRADES & SERVICE OCCUPATIONS

The Trades & Service Occupations Department provides a technical learning environment dedicated to the preparation of individuals for challenging positions in the community work force. Most classes are held at the Main Campus, and there are opportunities for hands-on learning at off-campus sites. The department offers certificates and degrees that prepare individuals for entry-level positions, for job advancement and for technical skill upgrading. Offerings include:

|                                             |                                                     |
|---------------------------------------------|-----------------------------------------------------|
| Commercial Carpentry                        | Apprenticeship                                      |
| Electrical Trades                           | Apprenticeship                                      |
| Fire Sprinkler                              | Apprenticeship                                      |
| Plumbing                                    | Apprenticeship                                      |
| Sheet Metal                                 | Apprenticeship                                      |
| Air Conditioning, Heating and Refrigeration | Certificate                                         |
| Automotive Technology                       | Certificate                                         |
| Baking                                      | Certificate                                         |
| Carpentry                                   | Certificate                                         |
| Commercial Printing                         | Certificate and Associate of Applied Science Degree |
| Construction Technology                     | Associate of Applied Science Degree                 |
| Criminal Justice                            | Associate of Applied Science Degree                 |
| Culinary Arts                               | Associate of Applied Science Degree                 |
| Diesel Equipment Technology                 | Certificate                                         |
| Electrical Trades                           | Certificate                                         |
| Environmental Technology                    | Associate of Applied Science Degree                 |

|                           |                                     |
|---------------------------|-------------------------------------|
| Fire Science              | Associate of Applied Science Degree |
| Fitness Technician        | Certificate                         |
| Food Service Management   | Certificate                         |
| Machine Tool Technology   | Certificate                         |
| Mechanical Technology     | Associate of Applied Science Degree |
| Metals Technology         | Associate of Applied Science Degree |
| Plumbing                  | Certificate                         |
| Quantity Food Preparation | Certificate                         |
| Transportation Technology | Associate of Applied Science Degree |
| Truck Driving             | Certificate                         |
| Welding                   | Certificate                         |

Students are encouraged to participate in Vocational Industrial Clubs of America (VICA), a national student organization. VICA activities are an integral part of the curriculum.

Cooperative education allows qualified students the option to complete course work via a related entry-level-wage job. A written agreement with specific objectives is signed by the student, TVI and the employer. The cooperative education option may not qualify students for financial aid.

Students must provide their own personal protective equipment (hard hat and safety glasses or goggles) and lab clothes which are appropriate and comply with Trades & Service Occupations Department and/or Occupational Safety and Health Act (OSHA) standards. Hard hats must meet ANSI Standard Z89.1-1969. Safety glasses or goggles must meet ANSI Standard Z87.1-1979. Students are trained to OSHA safety standards for their respective area.

Students planning to transfer to four-year schools should meet with TVI personnel to discuss transferability of courses.

Most Trades & Service Occupations programs require that students be in good physical condition and be free of allergies or health conditions that could endanger themselves or others.

Most programs require basic hand tools. Tool lists with approximate costs and purchase deadlines are provided by instructors at the beginning of each term.

All occupational courses must be passed with a minimum grade of C to qualify for graduation.

## APPRENTICESHIPS

Note: Students enrolled in apprenticeships may not qualify for financial aid or Veterans Administration benefits. Apprenticeship courses are taken in order starting with "A" (see Schedule of Classes). Department approval is required to register for advanced courses not in the appropriate sequence.

### Commercial Carpentry Apprenticeship

The Commercial Carpentry Apprenticeship for persons currently employed in the industry is offered in conjunction with the Rio Grande Chapter of Associated Builders and Contractors Inc. (ABC).

The program provides related classroom instruction.

There is a TVI registration fee each term. Students must purchase textbooks and instructional materials through the local ABC chapter.

#### **CCAP 198 Commercial Carpentry Apprenticeship 40 credit hours**

*(Prerequisite: current full-time employment in the carpentry industry or department approval)* This course consists of 600 hours of related classroom instruction covering 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.

### Electrical Trades Apprenticeship

The Electrical Trades Apprenticeship, for persons currently employed full-time in the electrical industry, is offered in conjunction with the Independent Electrical Contractors (IEC) and the Rio Grande chapter of Associated Builders and Contractors Inc. (ABC).

The program provides related classroom instruction.

There is a TVI registration fee each term. Students must purchase books and instructional materials through the IEC office.

#### **ETAP 198 Electrical Trades Apprenticeship 40 credit hours**

*(Prerequisite: current full-time employment in the electrical trades industry or department approval)* This course consists of 600 hours of related classroom instruction covering safety, electrical theory, blueprint reading and layout, National Electrical Code interpretation, tool usage and motor controls.

### Fire Sprinkler Apprenticeship

The Fire Sprinkler Apprenticeship is offered for persons currently employed in the fire sprinkler field. The program provides related classroom instruction. Beginning students are admitted each term as space permits.

There is a TVI registration fee each term. Students must purchase books and instructional materials through the New Mexico chapter of the American Fire Sprinkler Association.

#### **FSAP 198 Fire Sprinkler Apprenticeship 40 credit hours**

*(Prerequisite: current full-time employment in the fire sprinkler or related industry or*

*department approval*) This course consists of 600 hours of classroom instruction, including sprinkler drawings, NFPA codes and standards, hydraulic calculations, wet/dry/pre-action/deluge systems applications, hazard classification inspections and design.

### Plumbing Apprenticeship

The Plumbing Apprenticeship, 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 TVI registration fee each term. Students must purchase textbooks and instructional materials through the local ABC chapter.

#### **PLAP 198 Plumbing Apprenticeship 40 credit hours**

*(Prerequisite: current full-time employment in the plumbing industry)* This course consists of 600 hours of classroom instruction covering safety, shop and trade math, plumbing processes, blueprint reading and mechanical code (plumbing) interpretation.

### Sheet Metal Apprenticeship

The Sheet Metal Apprenticeship, 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 program provides related classroom instruction.

There is a TVI registration fee each term. Students must purchase textbooks and instructional materials through the local ABC chapter.

#### **SMAP 198 Sheet Metal Apprenticeship 40 credit hours**

*(Prerequisite: current full-time employment in the sheet metal industry or department approval)* This course consists of 600 hours of related classroom instruction. Instruction covers safety, shop and trade math, sheet metal processes for shop machinery, triangulation lay-out, radial line layout, parallel line layout, blueprint reading and Sheet Metal and Air Conditioning National Assn. (SMACNA) manuals.

## OPTIONAL COURSES

At least 15 students must sign up and instructional space, instructor and budget must be available before an elective course can be offered.

|      |      |                                          | <i>Credit Hours</i> |
|------|------|------------------------------------------|---------------------|
| *BT  | 177L | Metal Framing.....                       | 3                   |
| *BT  | 178  | Remodeling .....                         | 3                   |
| *BT  | 179  | Advanced Remodeling .....                | 3                   |
| SCSE | 170L | Small Engine Skills Improvement I .....  | 3                   |
| SCSE | 171L | Small Engine Skills Improvement II ..... | 3                   |
| SSKL | 211  | Employment Skills-General .....          | 1                   |
| VICA | 174  | Professional Development .....           | 1                   |



**VICA 176 Career Planning****1 credit hour**

Career information, report writing, conducting interviews, communication improvement and interaction with business and industry are included.

**VICA 178 Civic Responsibility****1 credit hour**

Involvement in various community services as volunteers, and local government and community leaders' roles in the operation of the city are covered. Planning and carrying out a community project are included.

## AIR CONDITIONING, HEATING AND REFRIGERATION

The Air Conditioning, Heating and Refrigeration certificate 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. Courses also may be applied toward a degree in Mechanical Technology.

Training includes safety, installing mechanical equipment, 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.

Students must be free of chronic respiratory diseases and allergies to sheet metal fluxes and metals and must have normal color differentiation.

There is an EPA required certification fee for all refrigeration and air conditioning technicians. The certification is required before graduates enter the work force.

A suggested schedule includes:

Term 1: ACHR 131, 132, 133, 134, 135, 136, 137

Term 2: ACHR 151, 152, 153, 154, 155, 156

Term 3: ACHR 210, 211, 212, 213, 214, 215, 216

*Credit Hours*

|      |     |                                      |   |
|------|-----|--------------------------------------|---|
| ACHR | 131 | Refrigeration Fundamentals.....      | 2 |
| ACHR | 132 | Basic Electricity .....              | 2 |
| ACHR | 133 | Refrigerant Management .....         | 2 |
| ACHR | 134 | Motors and Controls.....             | 2 |
| ACHR | 135 | Refrigeration Applications .....     | 2 |
| ACHR | 136 | Control Circuit Application .....    | 2 |
| ACHR | 137 | Code and Safety Requirements I ..... | 1 |
| ACHR | 151 | Air Conditioning .....               | 2 |
| ACHR | 152 | Air Conditioning Controls .....      | 2 |
| ACHR | 153 | Gas Heating Systems .....            | 2 |
| ACHR | 154 | Gas Heating Control Systems .....    | 2 |
| ACHR | 155 | Commercial Refrigeration .....       | 2 |

|                    |     |                                              |           |
|--------------------|-----|----------------------------------------------|-----------|
| ACHR               | 156 | System Design .....                          | 3         |
| ACHR               | 210 | Pumps and Valves .....                       | 2         |
| ACHR               | 211 | Basic Hydronic Principles .....              | 2         |
| ACHR               | 212 | Hot Water and Steam Generation Systems ..... | 2         |
| ACHR               | 213 | Controls I .....                             | 2         |
| ACHR               | 214 | Chilled Water Systems .....                  | 2         |
| ACHR               | 215 | Controls II .....                            | 2         |
| ACHR               | 216 | Code and Safety Requirements II .....        | 1         |
| <b>Total .....</b> |     |                                              | <b>39</b> |

### Optional Courses

|      |      |                                                        |   |
|------|------|--------------------------------------------------------|---|
| ACHR | 171L | Basic Refrigeration Maintenance.....                   | 3 |
| ACHR | 172L | Basic Air Conditioning, Heating and Refrigeration..... | 3 |
| ACHR | 173L | Commercial Refrigeration .....                         | 3 |

#### **ACHR 131 Refrigeration Fundamentals 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Fundamentals of refrigeration, including components, refrigerants and accessories and hands-on competencies, are included. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

#### **ACHR 132 Basic Electricity 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Principles of electricity, measurements, safety, wiring procedures, schematics, components of basic circuits and principles and practices in electricity are presented. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

#### **ACHR 133 Refrigerant Management 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Accepted practices and procedures of refrigerant handling, containment, safety, leak detection, evacuation, recovery and charging systems are included. Students take the EPA Universal CFC Certification exam. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

#### **ACHR 134 Motors and Controls 2 credit hours**

*(Pre- or corequisite: ACHR 132 or department approval)*

Primary and control circuits in various applications, troubleshooting and components are covered. Attention to motors and their starting devices is emphasized. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

#### **ACHR 135 Refrigeration Application 2 credit hours**

*(Pre- or corequisite: ACHR 131 or department approval)*

System design, accessories, performance characteristics and problem diagnosis are reinforced. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 136 Control Circuit Applications 2 credit hours**

*(Pre- or corequisite: ACHR 134 or department approval)* Electrical schematics, diagrams, troubleshooting of circuits and problem diagnosis are stressed. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 137 Code and Safety Requirements I 1 credit hour**

*(Prerequisites: RDG 099 or equivalent or department approval)* Code requirements and safety practices related to refrigeration are investigated. Code and safety searches are an integral part of this course.

**ACHR 151 Air Conditioning 2 credit hours**

*(Prerequisite: ACHR 135, ACHR 136 or department approval)* Installation, service and maintenance of air conditioning and heat pump systems are covered. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 152 Air Conditioning Control 2 credit hours**

*(Prerequisite: ACHR 135, ACHR 136 or department approval)* Installation, service and maintenance of air conditioning and heat pump systems controls are covered. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 153 Gas Heating Systems 2 credit hours**

*(Prerequisite: ACHR 135, ACHR 136 or department approval)* Installation, service and maintenance of forced fossil fuel furnaces are covered. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 154 Gas Heating Control Systems 2 credit hours**

*(Prerequisite: ACHR 135, ACHR 136 or department approval)* Forced fossil fuel furnace controls installation and maintenance are emphasized. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 155 Commercial Refrigeration 2 credit hours**

*(Prerequisite: ACHR 135, ACHR 136 or department approval)* Installation, service and maintenance of reach-in refrigeration systems are covered. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 156 System Design 3 credit hours**

Air properties, air movement, heat load calculations and water as a secondary refrigerant are topics. (1 theory + 2.5 lab hours a week = 30 theory + 37.5 lab hours a term)

**ACHR 171L Basic Refrigeration Maintenance 3 credit hours**

The student is introduced to the types and components of refrigerators and air conditioners in this theory/lab course. Evaporative coolers and preventive maintenance are stressed. Troubleshooting skills are developed. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**ACHR 172L Basic Air Conditioning, Heating and Refrigeration 3 credit hours**

The students are introduced to basic equipment and service techniques in this theory/lab course. Emphasis is on installation and troubleshooting of parallel compressor systems, energy management systems and preventive maintenance programs. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**ACHR 173L Commercial Refrigeration 3 credit hours**

The student is introduced to commercial refrigeration and ice machines in this theory/lab course. Preventive maintenance is stressed. Simple servicing and troubleshooting skills are developed. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**ACHR 210 Pumps and Valves 2 credit hours**

*(Prerequisites: ACHR 151, ACHR 152 and ACHR 154 or department approval)* The types of valves and pumps used in hydronic systems, the sizing, selection and internal construction, disassembling, assembling and measurement of impellers are covered. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 211 Basic Hydronic Principles 2 credit hours**

*(Prerequisites: ACHR 151, ACHR 152 and ACHR 154 or department approval)* Basic flow, nomenclature, physical principles of typical systems, piping layout and design are covered. Actual operating systems are investigated. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 212 Hot Water and Steam Generation Systems 2 credit hours**

*(Prerequisite: ACHR 210, ACHR 211 or department approval)* Types, design, construction of typical systems, sizing and controls of units are included. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 213 Controls I 2 credit hours**

*(Prerequisite: ACHR 210, ACHR 211 or department approval)* Pneumatic, electronic and electric control systems with computer interfacing are stressed. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 214 Chilled Water Systems 2 credit hours**

*(Prerequisite: ACHR 210, ACHR 211 or department approval)* Commercial and industrial chilled water systems are emphasized. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**ACHR 215 Controls II 2 credit hours**

*(Prerequisite: ACHR 213 or department approval)* Advanced building controls using interfaced operating monitor equipment are covered. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

(Prerequisite: ACHR 137 or department approval) Code requirements and safety practices related to refrigeration are investigated. Code and safety searches are an integral part of this course.

## AUTOMOTIVE TECHNOLOGY

The Automotive Technology program is designed to prepare men and women for entry-level career positions as light truck and automobile technicians. This three-term course of study emphasizes appropriate testing and repair of automobiles as well as professionalism, strong work ethic and personal safety. Courses also may be applied toward a degree in Transportation Technology.

This program is certified by the National Automotive Technicians Education Foundation (NATEF) as a master certified program in all eight specialty areas: automatic transmission/transaxle, brakes, electrical/electronic systems, engine performance, engine repair, heating and air conditioning, manual drive train and axles, and suspension and steering.

Students attending the Automotive Technology program should be free from chronic respiratory problems and not be allergic to automotive chemicals and cleaning solvents. Most automotive industry employers require that their employees possess a valid driver's license and have a clean driving record. Students needing information on equivalents for past courses should see the program chair.

A suggested schedule per term includes:

Term 1: AUTC 121L, 122L, 123L, 126L

Term 2: AUTC 131L, 132L, 133L, 134L

Term 3: AUTC 221L, 222L, 223L

### *Credit Hours*

|                        |      |                                        |           |
|------------------------|------|----------------------------------------|-----------|
| AUTC                   | 121L | Brake Systems . . . . .                | 4         |
| AUTC                   | 122L | Suspension and Alignment . . . . .     | 4         |
| AUTC                   | 123L | Manual Transmissions . . . . .         | 4         |
| AUTC                   | 126L | Automotive Electrical . . . . .        | 4         |
| AUTC                   | 131L | Engine Repair . . . . .                | 4         |
| AUTC                   | 132L | Automatic Transmission . . . . .       | 4         |
| AUTC                   | 133L | Automotive Electronics . . . . .       | 4         |
| AUTC                   | 134L | Air Conditioning and Heating . . . . . | 4         |
| AUTC                   | 221L | Engine Performance I . . . . .         | 4         |
| AUTC                   | 222L | Engine Performance II . . . . .        | 4         |
| AUTC                   | 223L | Engine Performance II . . . . .        | 4         |
| <b>Total . . . . .</b> |      |                                        | <b>44</b> |

### Optional Courses

|      |     |                                      |   |
|------|-----|--------------------------------------|---|
| AUTC | 113 | Transportation Electronics . . . . . | 3 |
|------|-----|--------------------------------------|---|



**AUTC 132L Automatic Transmissions 4 credit hours**

*(Prerequisites: AUTC 126L, RDG 099, MATH 099 or equivalent or department approval)*

The fundamentals of design and operation of automatic transmissions and transaxles, servicing, and proper repair procedures are reviewed. Experiences include performing pump and clutch repair, valve body overhaul and gear replacement on a variety of transmissions. (2 theory + 6 lab hours a week = 30 theory + 90 lab hours a term)

**AUTC 133L Automotive Electronics 4 credit hours**

*(Prerequisite: AUTC 126L or department approval)* Builds on lessons in AUTC 126L.

Testing and diagnostic skills in more complex automotive electronic systems are covered. Subjects include lighting circuits, body computers and sensors, use of lab scopes and scan tools and supplemental restraint systems (SRS). (2 theory + 5 lab hours a week = 30 theory + 75 lab hours a term)

**AUTC 134L Air Conditioning and Heating 3 credit hours**

*(Pre- or corequisite: AUTC 126L or department approval)* Testing, evacuating, and charging air conditioning systems while maintaining an awareness of potential environmental concerns caused by automotive refrigerants are covered as well as cooling and heating diagnosis, climate control trouble shooting, and component repair. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**AUTC 170 Transportation Trades Machining 3 credit hours**

Basic machine shop repair practices as they relate to gasoline and diesel engines, safety, proper use of hand and special tools, how to set up and use the lathe, mill and drill press are included. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**AUTC 172 Air Care Inspector 1 credit hour**

The procedures for becoming a certified air care inspector for the City of Albuquerque Vehicle Pollution Management program are taught along with city and federal regulations governing air pollution and emissions inspections. (7.5 theory + 30 lab hours a term)

**AUTC 174L Alternative Fuels 2 credit hours**

*(Prerequisites: AUTC 221L, 222L, 223L or equivalent or ASE certification in engine performance)* Diagnosis, repair and conversions for compressed natural gas (CNG) and liquefied petroleum gas (LPG) fueled light and medium vehicles are reviewed. Personal and environmental safety, LPG/CNG fuel handling and air/fuel management are included. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**AUTC 221L Engine Performance I 4 credit hours**

*(Prerequisites: AUTC 126L, AUTC 133L or department approval)* Basic fuel and ignition systems along with early emission system designs with structured lab activities permit in-depth analysis of how these systems affect driveability. Skills are developed in performance testing, diagnosis, and repair of engine systems. (2 theory + 5 lab hours a week = 30 theory + 75 lab hours a term)

**AUTC 222L Engine Performance II 4 credit hours**

*(Prerequisite: AUTC 221L or department approval)* A follow-up course to Engine Performance I that examines fuel, ignition and emission devices in early generation computer controlled systems. Diagnostic skills and repair methods include throttle body fuel injection, electronic feedback carburetors and distributor ignition (DI). (2 theory + 6 lab hours a week = 30 theory + 90 lab hours a term)

**AUTC 223L Engine Performance III 4 credit hours**

*(Prerequisite: AUTC 222L or department approval)* Current production automobile and light truck computerized engine management systems are presented. Operation, trouble code analysis, diagnostic routines and proper repair procedures for electronic ignition (EI), port fuel injection, and emission devices are included. (2 theory + 5 lab hours a week = 30 theory + 75 lab hours a term)

**AUTC 296 Special Topics 1-6 credit hours**

*(Prerequisite: department approval)* Various problems and current automotive subjects are presented.

## BAKING

This program prepares students for entry-level employment in restaurants, bake shops and institutional kitchens. Students learn safety and professional skills in a bake shop furnished with modern equipment. Courses also may be applied toward a degree in Culinary Arts.

Students must be free of chronic allergies. A physician's certificate must be presented to TVI before the start of lab classes stating that the student is free from tuberculosis in a transmissible form.

A suggested schedule per term includes:

Term 1: BKNG 101, 103L, 104L, 105L, 106L, HT 133

Term 2: BKNG 111, 112L, 113L, 114L, 115L, computer course

*Credit Hours*

|      |      |                                     |   |
|------|------|-------------------------------------|---|
| BKNG | 101  | Baking Theory I . . . . .           | 2 |
| BKNG | 103L | Breads . . . . .                    | 2 |
| BKNG | 104L | Sweet Yeast Goods . . . . .         | 2 |
| BKNG | 105L | Cake Batters . . . . .              | 2 |
| BKNG | 106L | Pies and Pastries . . . . .         | 2 |
| *HT  | 133  | Food and Beverage Control . . . . . | 3 |
| BKNG | 111  | Baking Theory II . . . . .          | 2 |
| BKNG | 112L | Yeast Doughs . . . . .              | 2 |
| BKNG | 113L | Advanced Cake Batters . . . . .     | 2 |
| BKNG | 114L | Pastries and Cookies . . . . .      | 2 |
| BKNG | 115L | Icings and Fillings . . . . .       | 2 |



**BKNG 112L Yeast Doughs 2 credit hours**

*(Pre- or corequisite: BKNG 111 or department approval)* Supervision, safety techniques and advanced production procedures of a variety of breads, sweet doughs and croissants are covered. (5 lab hours a week = 75 lab hours a term)

**BKNG 113L Advanced Cake Batters 2 credit hours**

*(Pre- or corequisite: BKNG 111 or department approval)* Topics include advanced production procedures of a variety of international cakes and tortes with emphasis on baking chemistry and safety as well as production of tiered, special-occasion and sculptured cakes and decorations. (5 lab hours a week = 75 lab hours a term)

**BKNG 114L Pastries and Cookies 2 credit hours**

*(Pre- or corequisite: BKNG 111 or department approval)* Advanced production techniques of international pastries, pies and petit fours are presented. The seven different methods of cookie production are emphasized. (5 lab hours a week = 75 lab hours a term)

**BKNG 115L Icings and Fillings 2 credit hours**

*(Pre- or corequisite: BKNG 111 or department approval)* Advanced production techniques of international buttercreams, fondants, ganache and marzipan are presented. (5 lab hours a week = 75 lab hours a term)

**BKNG 296 Special Topics 1-6 credit hours**

*(Prerequisite: department approval)* Food Service Management and Quantity Foods students pursue specialized needs. The class may be taken as independent or directed study.

## CARPENTRY

The Carpentry certificate program provides students with entry-level job skills for the construction industry. Tool safety and job-site safety training in compliance with OSHA standards are stressed. Classes meet on- and off-campus in labs designed for residential and commercial construction. Courses also may be applied toward a degree in Construction Technology.

Lab classes teach the fundamentals of site layout, foundations, framing, roof systems, exterior coverings, installation of doors and windows, interior finish, cabinet construction and installation, remodeling and tools. Theory classes present technical information, Uniform Building Code (UBC) regulations, blueprint reading and material analysis.

Students must be free of chronic respiratory disease and allergies or reactions to wood or wood products, construction adhesives, paints and solvents. Students must be able to lift 50 pounds. A valid driver's license and a good driving record are required by most employers. Students purchase all textbooks for this program.

A suggested schedule per term includes:

Term 1: CARP 101, 102, 102L, 103, 103L, 104, 104L

Term 2: CARP 111, 112, 112L, 113, 113L, 114, 114L

|                        |      |                                              |           |
|------------------------|------|----------------------------------------------|-----------|
| CARP                   | 101  | Carpentry Blueprint Reading I . . . . .      | 4         |
| CARP                   | 102  | Foundations Theory . . . . .                 | 1         |
| CARP                   | 102L | Foundations Lab . . . . .                    | 2         |
| CARP                   | 103  | Framing Theory . . . . .                     | 1         |
| CARP                   | 103L | Framing Lab . . . . .                        | 2         |
| CARP                   | 104  | Exteriors Theory . . . . .                   | 1         |
| CARP                   | 104L | Exteriors Lab . . . . .                      | 2         |
| CARP                   | 111  | Carpentry Blueprint Reading II . . . . .     | 4         |
| CARP                   | 112  | Interior Finish Theory . . . . .             | 1         |
| CARP                   | 112L | Interior Finish Lab . . . . .                | 2         |
| CARP                   | 113  | Cabinet-making and Millwork Theory . . . . . | 1         |
| CARP                   | 113L | Cabinet-making and Millwork Lab . . . . .    | 2         |
| CARP                   | 114  | Carpentry Remodel Theory . . . . .           | 1         |
| CARP                   | 114L | Carpentry Remodel Lab . . . . .              | 2         |
| <b>Total . . . . .</b> |      |                                              | <b>26</b> |

### Optional Courses

|      |     |                                              |   |
|------|-----|----------------------------------------------|---|
| CARP | 170 | Carpentry Fundamentals . . . . .             | 3 |
| CARP | 171 | Construction Trades Blueprint/Math . . . . . | 3 |

#### **CARP 101      Carpentry Blueprint Reading I      4 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Topics include lumber sizing, scaling, centering and triangle theory, interpretation of elevation drawings, floor plans, symbols, notations, dimensions and structural information.

#### **CARP 102      Foundations Theory      1 credit hour**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

This course provides instruction in the safety and use of hand and power tools, site layout and various methods of concrete foundation construction.

#### **CARP 102L      Foundations Lab      2 credit hours**

*(Pre- or corequisite: CARP 101, 102 or department approval)* This course provides hands-on training in the safety and use of hand and power tools. Site layout, footing, stemwall and concrete slab construction are covered. (5 lab hours a week = 75 lab hours a term)

#### **CARP 103      Framing Theory      1 credit hour**

*(Prerequisite: CARP 101, 102 or department approval)* The layout of floor, wall, ceiling and roof structural members is covered, as well as blueprint reading and calculation of structural materials in accordance with the Uniform Building Code (UBC).

#### **CARP 103L      Framing Lab      2 credit hours**

*(Pre- or corequisite: CARP 103 or department approval)* Students cut and assemble the structural material to construct floor, wall, ceiling and roof systems in accordance with the

UBC. Safety is stressed. (5 lab hours a week = 75 lab hours a term)

**CARP 104 Exteriors Theory 1 credit hour**  
(Pre- or corequisite: CARP 101, 102, 103 or department approval) This course provides instruction in the installation of exterior wall and roof finishes, windows and exterior doors in accordance with the UBC.

**CARP 104L Exteriors Lab 2 credit hours**  
(Pre- or corequisite: CARP 104 or department approval) This course provides experience in installing exterior wall and roof finishes, windows and exterior doors in accordance with the UBC. (5 lab hours a week = 75 lab hours a term)

**CARP 111 Carpentry Blueprint Reading II 4 credit hours**  
(Prerequisite: CARP 101, 102, 102L, 103, 103L, 104, 104L or department approval) Blueprint applications for residential homes, multiple family dwellings and commercial buildings are introduced, along with material estimating and volume measure.

**CARP 112 Interior Finish Theory 1 credit hour**  
(Pre- or corequisite: CARP 111 or department approval) The focus is on the UBC requirements for the installation of thermal insulation and drywall. Methods of painting, trimming and finishing interiors are covered.

**CARP 112L Interior Finish Lab 2 credit hours**  
(Pre- or corequisite: CARP 112 or department approval) Hands-on activities are provided in a safety-focused environment: insulation techniques, drywall installation, taping and texture of drywall, painting, trimwork and finishing of the interiors of residential and commercial buildings. (5 lab hours a week = 75 lab hours a term)

**CARP 113 Cabinet-making and Millwork Theory 1 credit hour**  
(Pre- or corequisite: CARP 111 or department approval) This course provides instruction in the design, layout and construction of wood cabinets.

**CARP 113L Cabinet-making and Millwork Lab 2 credit hours**  
(Pre- or corequisite: CARP 113 or department approval) Hands-on experiences are assigned in the safe use of equipment and power tools used in the construction and finish of wooden cabinets. (5 lab hours a week = 75 lab hours a term)

**CARE 114 Carpentry Remodel Theory 1 credit hour**  
(Pre- or corequisite: CARP 111 or department approval) Uniform Building Code requirements for remodeling an existing structure are covered.

**CARE 114L Carpentry Remodel Lab 2 credit hours**  
(Pre- or corequisite: CARP 114 or department approval) This course offers hands-on experiences in the safe use of power equipment and problem solving in remodeling. (5 lab hours a week = 75 lab hours a term)

**CARP 170      Carpentry Fundamentals      3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Instruction covers safety and use of hand and power tools, site layout, concrete, roof finishes, windows, insulation, drywall, trim-work painting and problem solving. (5 lab hours a week = 15 theory + 75 lab hours a term)

**CARP 171      Construction Trades Blueprints      3 credit hours**

Instruction is provided in reading and interpreting residential blueprints with emphasis on terminology, symbols, notations, scaling, dimensioning and drawing techniques. Construction methods, materials, calculations for material take-off and estimates are reviewed.

**CARP 296      Special Topics      1-6 credit hours**

*(Prerequisite: department approval)* This course includes an in-depth study of methods and advanced techniques.

## COMMERCIAL PRINTING

This certificate and associate degree program provides students with safety training and entry-level skills for jobs in the offset printing industry or in-plant print and duplication shops.

The commercial printing lab contains paste-up and stripping tables, process cameras, platemakers, offset duplicators, paper cutters, folders, bindery machines and other equipment used in the industry.

Students must be free of chronic allergies to lubricants, solvents, inks and photographic chemicals, and must have normal color differentiation with near- and far-point depth perception.

A suggested schedule for the certificate includes:

Term 1: CMPR 102, 104L, 105L, 108L 109L, BA 150

Term 2: CMPR 114L, 117L, 205L, 206L, EPT 213

|                                                 |      |                                               | <i>Credit Hours</i> |
|-------------------------------------------------|------|-----------------------------------------------|---------------------|
| CMPR                                            | 102  | Offset Theory I . . . . .                     | 2                   |
| CMPR                                            | 104L | Prepress Lab . . . . .                        | 2                   |
| CMPR                                            | 105L | Press and Bindery Lab . . . . .               | 2                   |
| CMPR                                            | 108L | Basic Press Work . . . . .                    | 2                   |
| CMPR                                            | 109L | Intermediate Press Work . . . . .             | 2                   |
| *BA                                             | 150  | Introduction to Computer Processing . . . . . | 4                   |
| CMPR                                            | 114L | Estimating . . . . .                          | 2                   |
| CMPR                                            | 117L | Advanced Prepress Lab . . . . .               | 2                   |
| CMPR                                            | 205L | Advanced Press Work . . . . .                 | 2                   |
| CMPR                                            | 206L | Process Press Work . . . . .                  | 2                   |
| EPT                                             | 213  | Occupational Safety . . . . .                 | 3                   |
| <b>Total required for certificate . . . . .</b> |      |                                               | <b>25</b>           |

## ADDITIONAL DEGREE REQUIREMENTS

### Business Occupation Courses

|     |     |                                                   |   |
|-----|-----|---------------------------------------------------|---|
| AA  | 101 | Beginning Keyboarding . . . . .                   | 3 |
| AA  | 102 | Intermediate Keyboard Applications . . . . .      | 3 |
| MMS | 220 | Desktop Publishing on a Mac . . . . .             | 3 |
| MMS | 256 | Desktop Publishing and Digital Printing . . . . . | 3 |
| MMS | 280 | Postscript Illustration . . . . .                 | 3 |
| MMS | 281 | Image Manipulation/Painting . . . . .             | 3 |
| MMS | 282 | Digital Prepress . . . . .                        | 3 |

### Arts & Sciences Courses

|                                                             |               |                                    |   |
|-------------------------------------------------------------|---------------|------------------------------------|---|
| ENG                                                         | 101           | College Writing . . . . .          | 3 |
| ENG                                                         | 119           | Technical Communications . . . . . | 3 |
| COMM                                                        | 130 or higher | . . . . .                          | 3 |
| Humanities/Social and Behavioral Science Elective . . . . . |               |                                    | 3 |
| MATH                                                        | 119 or higher | . . . . .                          | 3 |

**Total required for degree . . . . . 61**

\*Business Occupations course

### Optional Course

|      |     |                                                        |   |
|------|-----|--------------------------------------------------------|---|
| CMPR | 170 | Basic Commercial Printing Skills Improvement . . . . . | 3 |
|------|-----|--------------------------------------------------------|---|

**CMPR 102      Offset Theory I      2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

This course covers the entire process of offset lithography including basic composition, layout and paste-up techniques, film processing on the process camera, film assembly, platemaking, press and bindery.

**CMPR 104L      Prepress Lab      2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

The printing process, including paste-up techniques, process camera, film assembly and platemaking, are covered, along with shooting halftones and lineshots and stripping for color jobs. Personal safety is stressed. (5 lab hours a week = 75 lab hours a term)

**CMPR 105L      Press and Bindery Lab      2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Procedures for set-up, operation, clean-up and maintenance of offset lithography presses are presented. Initial training is offered in custom ink mixing and basic bindery and finishing, including the operation of the folder and the power cutter. Safety is stressed. (5 lab hours a week = 75 lab hours a term)

**CMPR 108L      Basic Press Work      2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Press adjustments, roller pressure adjustments, cylinder pressure (plate to blanket) and packing cylinders and changing blankets are essentials of the lab experience. Mechanical types and weights of paper stock that affect offset running ability are also covered. (5 lab hours a week = 75 lab hours a term)

**CMPR 109L Intermediate Press Work 2 credit hours**

*(Prerequisites: RDG 099 or equivalent MATH 099 or equivalent or department approval)*

This course simulates working conditions. Time is spent to improve competencies and increase skill level and speed. A final project is taken from design to bindery. (5 lab hours a week = 75 lab hours a term)

**CMPR 114L Estimating 2 credit hours**

*(Prerequisites: CMPR 102, 104L, 105L, 108L and 109L or department approval)*

The basics of handling customer jobs, estimating cost and labor for a variety of printing jobs are covered. Making up work orders and charging jobs in a simulated business environment using both catalog and computer methods are presented. (5 lab hours a week = 75 lab hours a term)

**CMPR 117L Advanced Prepress Lab 2 credit hours**

*(Prerequisites: CMPR 102, 104L, 105L, 108L and 109L or department approval)*

Topics include hairline, multiple burn stripping using chokes and spreads, creating camera-ready art, flowing graphics from an existing file into a publication and printing finished document. Basic entry-level electronic prepress techniques are stressed. (5 lab hours a week = 75 lab hours a term)

**CMPR 170 Commercial Printing Skills Improvement: Basic 3 credit hours**

Individuals with industry experience who need to update their knowledge may review the entire range of offset experience with emphasis on improving quality. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**CMPR 205L Advanced Press Work 2 credit hours**

*(Prerequisites: CMPR 102, 104L, 105L, 108L and 109L or department approval)*

This course offers advanced training in press work with emphasis on efficiency and quality, including reducing make-ready and wash-up time. (5 lab hours a week = 75 lab hours a term)

**CMPR 206L Process Press Work 2 credit hours**

*(Prerequisites: CMPR 102, 104L, 105L, 108L and 109L or department approval)*

Producing process color on the press, including control densities and lit, is the focus. (5 lab hours a week = 75 lab hours a term)

**CMPR 296 Special Topics 1-6 credit hours**

*(Prerequisite: department approval)* Various problems and the advanced techniques of commercial printing are presented.

# CONSTRUCTION TECHNOLOGY

The Construction Technology associate of applied science degree has concentrations in general construction and electrical. Required courses are designed to develop professionalism, leadership and technical skills necessary for students to gain employment in the construction industry or a related field.

The program provides instruction in safety, graphics, materials, computer estimating, statistics, management, equipment, blueprint reading, drafting, communications, math and technical skills related to the residential and commercial construction industry.

## GENERAL CONSTRUCTION CONCENTRATION

### Required Trades & Service Occupations Courses

|      |      |                                                       |   |
|------|------|-------------------------------------------------------|---|
| CARP | 101  | Carpentry Blueprint Reading I . . . . .               | 4 |
| CARP | 102  | Foundations Theory . . . . .                          | 1 |
| CARP | 102L | Foundations Lab . . . . .                             | 2 |
| CARP | 103  | Framing Theory . . . . .                              | 1 |
| CARP | 103L | Framing Lab . . . . .                                 | 2 |
| CARP | 104  | Exteriors Theory . . . . .                            | 1 |
| CARP | 104L | Exteriors Lab . . . . .                               | 2 |
| CARP | 111  | Carpentry Blueprint Reading II . . . . .              | 4 |
| CARP | 112  | Interior Finish Theory . . . . .                      | 1 |
| CARP | 112L | Interior Finish Lab . . . . .                         | 2 |
| CARP | 113  | Cabinet-making and Millwork Theory . . . . .          | 1 |
| CARP | 113L | Cabinet-making and Millwork Lab . . . . .             | 2 |
| CARP | 114  | Carpentry Remodel Theory . . . . .                    | 1 |
| CARP | 114L | Carpentry Remodel Lab . . . . .                       | 2 |
| *CM  | 132  | Construction Graphics . . . . .                       | 3 |
| *CM  | 171  | Construction Materials and Techniques . . . . .       | 3 |
| *CM  | 175  | General Contractor Preparation . . . . .              | 3 |
| *CM  | 201  | Commercial Construction Theory . . . . .              | 2 |
| *CM  | 201L | Commercial Construction Lab . . . . .                 | 3 |
| *CM  | 257  | Computer Estimating . . . . .                         | 3 |
| *CM  | 260  | Construction Job Costing . . . . .                    | 3 |
| *CM  | 263  | Construction Equipments and Methods . . . . .         | 3 |
| *CM  | 278  | Mechanical and Electrical Blueprint Reading . . . . . | 2 |
| EPT  | 213  | Occupational Safety . . . . .                         | 3 |

### Computer Requirement

|      |      |                                                            |   |
|------|------|------------------------------------------------------------|---|
| BA   | 150  | Introduction to Computer Processing                        |   |
|      | or   |                                                            |   |
| CP   | 176L | Introduction to Technology Computer Applications . . . . . | 4 |
|      | or   |                                                            |   |
| CSCI | 101  | Computer Literacy                                          |   |

## Required Arts & Sciences Courses

|                                                         |               |                       |              |
|---------------------------------------------------------|---------------|-----------------------|--------------|
| COMM                                                    | 130 or higher | .....                 | 3            |
| ENG                                                     | 101           | College Writing ..... | 3            |
| Humanities/Social and Behavioral Science Elective ..... |               |                       | 3            |
| MATH                                                    | 120 or higher | .....                 | 3-4          |
| PHYS                                                    | 102 or higher | .....                 | 3            |
| <b>Total</b> .....                                      |               |                       | <b>73-74</b> |

\*Technologies course

## ELECTRICAL CONCENTRATION

### Required Trades & Service Occupations Courses

|      |      |                                                  |   |
|------|------|--------------------------------------------------|---|
| ELTR | 101  | Electrical Theory I.....                         | 4 |
| ELTR | 102  | Electrical Math I .....                          | 3 |
| ELTR | 103L | Electrical DC/AC Lab.....                        | 3 |
| ELTR | 104L | AC Circuitry, Motors, Generators.....            | 3 |
| ELTR | 112  | Residential Blueprint Reading I.....             | 3 |
| ELTR | 113  | Electrical Theory II .....                       | 4 |
| ELTR | 114L | Residential Wiring Lab .....                     | 3 |
| ELTR | 115L | Residential Services .....                       | 3 |
| ELTR | 201  | Electrical Theory III .....                      | 4 |
| ELTR | 203  | Electrical Motor Control Theory .....            | 3 |
| ELTR | 204L | Industrial Motor Control Lab.....                | 3 |
| ELTR | 205L | Industrial Power Distribution .....              | 3 |
| ELTR | 211  | Industrial Electrical Circuitry and Safety ..... | 3 |
| ELTR | 212  | Programmable Logic Controller Theory.....        | 4 |
| ELTR | 213L | PLC Installation and Operation .....             | 3 |
| ELTR | 214L | PLC Systems Operation and Troubleshooting.....   | 3 |

### Computer Requirement

|      |      |                                                        |   |
|------|------|--------------------------------------------------------|---|
| BA   | 150  | Introduction to Computer Processing                    |   |
|      |      | or                                                     |   |
| CP   | 176L | Introduction to Technology Computer Applications ..... | 4 |
|      |      | or                                                     |   |
| CSCI | 101  | Computer Literacy                                      |   |

## Required Arts & Sciences Courses

|                                                         |               |                       |              |
|---------------------------------------------------------|---------------|-----------------------|--------------|
| COMM                                                    | 130 or higher | .....                 | 3            |
| ENG                                                     | 101           | College Writing ..... | 3            |
| Humanities/Social and Behavioral Science Elective ..... |               |                       | 3            |
| MATH                                                    | 120 or higher | .....                 | 3-4          |
| PHYS                                                    | 102 or higher | .....                 | 3            |
| <b>Total</b> .....                                      |               |                       | <b>71-72</b> |

# CRIMINAL JUSTICE

This associate degree program provides comprehensive instruction in criminal justice for students who plan careers in criminal justice agencies (such as law enforcement, courts and corrections) or in the private sector (security, investigations). Students who have already received a certificate from an approved New Mexico criminal justice academy may be granted credit if their academy experience coincides with a model academy curriculum and they have successfully passed a final examination with a grade of 85 percent or better.

Some employers may require a high school diploma, two years of college, an associate or bachelor's degree or in some instances a law degree.

## Required Core Courses

|      |     |                                             | <i>Credit Hours</i> |
|------|-----|---------------------------------------------|---------------------|
| CJ   | 101 | Criminal Law .....                          | 3                   |
| CJ   | 102 | Juvenile Law and Procedure .....            | 3                   |
| CJ   | 103 | Probation and Parole .....                  | 3                   |
|      |     | or .....                                    | 3                   |
| CJ   | 104 | Patrol Procedures*                          |                     |
| CJ   | 107 | Criminal Procedure .....                    | 3                   |
| CJ   | 108 | Community-Oriented Policing .....           | 3                   |
| *CJ  | 111 | Traffic Investigation and Enforcement ..... | 3                   |
|      |     | or .....                                    | 3                   |
| CJ   | 116 | Correctional Services .....                 | 3                   |
| CJ   | 112 | Criminal Investigation .....                | 3                   |
| CJ   | 113 | Organized and White Collar Crime .....      | 3                   |
|      |     | or .....                                    | 3                   |
| CJ   | 109 | Introduction to Security Services .....     | 3                   |
| CJ   | 118 | Report Writing .....                        | 3                   |
| CJ   | 117 | Public Policies and Strategies .....        | 3                   |
| FITT | 170 | Physical Fitness I .....                    | 1                   |

\*CJ 299 may be substituted for CJ 111.

## Computer Requirement

|      |      |                                                        |   |
|------|------|--------------------------------------------------------|---|
| BA   | 150  | Introduction to Computer Processing .....              |   |
|      |      | or .....                                               |   |
| CP   | 176L | Introduction to Technology Computer Applications ..... | 4 |
|      |      | or .....                                               |   |
| CSCI | 101  | Computer Literacy .....                                |   |

## Required Arts & Sciences Courses

|      |     |                                           |   |
|------|-----|-------------------------------------------|---|
| COMM | 221 | Interpersonal Communication Studies ..... | 3 |
| ENG  | 101 | College Writing .....                     | 3 |
| ENG  | 119 | Technical Communications .....            | 3 |

|                    |     |                                  |           |
|--------------------|-----|----------------------------------|-----------|
| MATH               | 120 | Intermediate Algebra .....       | 4         |
| PSY                | 105 | Introduction to Psychology ..... | 3         |
| SOC                | 101 | Introduction to Sociology .....  | 3         |
| SOC                | 111 | Criminal Justice System .....    | 3         |
| SOC                | 211 | Social Problems .....            | 3         |
| SOC                | 212 | Juvenile Delinquency .....       | 3         |
| SOC                | 214 | Sociology of Corrections .....   | 3         |
|                    | or  | .....                            | 3         |
| PSY                | 271 | Social Psychology .....          | 3         |
| SOC                | 215 | Criminology .....                | 3         |
| SOC                | 216 | Ethnic and Minority Groups ..... | 3         |
| <b>Total .....</b> |     |                                  | <b>72</b> |

**CJ 101 Criminal Law 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Studies include the historical development, purposes and goals of common and statutory criminal laws which control actions in the criminal justice system.

**CJ 102 Juvenile Law and Procedure 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

The Juvenile court and justice system including the Children's Code and the Rules of Procedure are covered.

**CJ 103 Probation and Parole 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

The history, philosophy and legal basis governing investigation and supervision of juvenile offenders and adult violators placed on probation and parole are presented.

**CJ 104 Patrol Procedures 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Basic patrol function and the problems faced by law enforcement officers are introduced.

**CJ 107 Criminal Procedure 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

This course examines the method of enforcing the substantive criminal law. It includes the process of applying the established law, constitutional law, rules of evidence, case law and an understanding of the logic used by the courts.

**CJ 108 Community-Oriented Policing 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

This course examines the history of policing, problems with some of the earlier methods, a re-thinking of the basic role of police and using police for problem solving, improving relations with the public and crime prevention with the public.

- CJ 109 Introduction to Security Services 3 credit hours**  
Topics include history and development of security services, relationships to the legal process, career roles and operational processes in security operations. The course also helps homeowners make living quarters more secure and covers personal defense, report writing, emergency procedures and defensive driving.
- CJ 111 Traffic Investigation and Enforcement 3 credit hours**  
(Prerequisite: CJ 101, 104, 118 or department approval) Included in this course is the study of traffic law enforcement and basic wreck checking. The course progresses to the complete investigation of major accidents.
- CJ 112 Criminal Investigation 3 credit hours**  
(Prerequisite: CJ 101, 107, 118 or department approval) Basic criminal investigation is studied from the preliminary investigation to final preparation and presentation in court.
- CJ 113 Organized and White Collar Crime 3 credit hours**  
(Prerequisites: CJ 101 and 107 or department approval) Illegal activities of people and institutions whose purpose is profit through legitimate gain through illegal enterprise are studied in this course.
- CJ 116 Correctional Services 3 credit hours**  
(Prerequisite: CJ 101 or department approval) The duties and authorities of correctional officers, admission procedures, cell searches, lockdown, penal terminology, key control measures and operations are covered, as well as court decisions dealing with corrections.
- CJ 117 Public Policies and Strategies 3 credit hours**  
(Prerequisite: CJ 108 or department approval) Issues and strategies involved in implementing community-oriented policing are examined, including problems in standard operating procedures, police discretion, cadet training, in-service training, community input strategies, civilian review boards and problem solving.
- CJ 118 Report Writing 3 credit hours**  
(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval) Police reports, including writing and use of forms, are covered.
- CJ 296 Special Topics 1-6 credit hours**  
(Prerequisite: department approval) The in-depth study of problems and the advanced techniques that criminal justice experts use in responding to them are included.
- CJ 299 Cooperative Education 3 credit hours**  
The student is employed at an approved course-related work site and applies learned theory based on goals and objectives.

# CULINARY ARTS

Food service is an excellent field for students seeking a challenging career in a rapidly growing industry. The Culinary Arts associate degree program provides comprehensive training in safety, sanitation, quantity food preparation, food service nutrition, equipment use, human relations, supervisory skills and business practices. This program is nationally accredited by the American Culinary Federation Educational Institute's Accrediting Commission.

Students must be free of chronic allergies. Each student must present a physician's certificate to TVI before the start of classes stating that the student is free from tuberculosis in a transmissible form.

|      |      |                                              | <i>Credit Hours</i> |
|------|------|----------------------------------------------|---------------------|
| QUFD | 101  | Quantity Food Theory I . . . . .             | 2                   |
| QUFD | 103L | Buffet Procedures . . . . .                  | 2                   |
| QUFD | 105L | Breakfast/Lunch . . . . .                    | 2                   |
| QUFD | 107L | Cold Food Preparation . . . . .              | 2                   |
| QUFD | 108L | Quantity Food Production . . . . .           | 2                   |
| QUFD | 111  | Quantity Food Theory II . . . . .            | 2                   |
| QUFD | 112L | Dining Room Skills . . . . .                 | 2                   |
| QUFD | 113L | Cold Food Preparation II . . . . .           | 2                   |
| QUFD | 114L | Stocks and Sauces--Sous Chef . . . . .       | 2                   |
| QUFD | 115L | Entree (Meat and Fish Preparation) . . . . . | 2                   |
| BKNG | 101  | Baking Theory I . . . . .                    | 2                   |
| BKNG | 103L | Breads . . . . .                             | 2                   |
| BKNG | 104L | Sweet Yeast Goods . . . . .                  | 2                   |
| BKNG | 105L | Cake Batters . . . . .                       | 2                   |
| BKNG | 106L | Pies and Pastries . . . . .                  | 2                   |
| BKNG | 111  | Baking Theory II . . . . .                   | 2                   |
| BKNG | 112L | Yeast Doughs . . . . .                       | 2                   |
| BKNG | 113L | Advanced Cake Batters . . . . .              | 2                   |
| BKNG | 114L | Pastries and Cookies . . . . .               | 2                   |
| BKNG | 115L | Icings and Fillings . . . . .                | 2                   |

## Required Business Occupations Courses

|    |     |                                                    |   |
|----|-----|----------------------------------------------------|---|
| HT | 130 | Hotel/Motel Food and Beverage Management . . . . . | 3 |
| HT | 133 | Food and Beverage Control . . . . .                | 3 |
| BA | 133 | Principles of Management . . . . .                 | 3 |

## Computer Requirement

|    |      |                                                            |   |
|----|------|------------------------------------------------------------|---|
| BA | 150  | Introduction to Computer Processing                        |   |
|    |      | or                                                         |   |
| CP | 176L | Introduction to Technology Computer Applications . . . . . | 4 |
|    |      | or                                                         |   |

### Required Arts & Sciences Courses

|              |                                                   |              |
|--------------|---------------------------------------------------|--------------|
| COMM         | 130 or higher                                     | 3            |
| ENG          | 101 College Writing                               | 3            |
|              | Humanities/Social and Behavioral Science Elective | 3            |
| MATH         | 119 or higher                                     | 3-4          |
| NUTR         | 120 Personal and Practical Nutrition              | 3            |
| <b>Total</b> |                                                   | <b>68-69</b> |

Course descriptions are found under Baking, Food Service Management and Quantity Foods.

## DIESEL EQUIPMENT TECHNOLOGY

This certificate program prepares students to work on a variety of diesel-powered equipment used in the trucking, heavy equipment and extraction industries. Courses also may be applied toward a degree in Transportation Technology.

The program meets in labs where students are introduced to safety and a variety of diesel engines, electrical and hydraulic test equipment, air conditioning equipment, drive train components, fuel injection test and calibration devices and related equipment.

Students must be free of chronic respiratory diseases and allergies to fuels and solvents. A valid driver's license and a good driving record are required by most employers.

A suggested schedule per term includes:

Term 1: DETC 101, 103L, 104L, 105L

Term 2: AUTC 113, DETC 111, 111L, 112L, 113L

Term 3: DETC 201, 201L, 202, 202L, 203, 203L, EPT 213

|       |      |                                                     | <i>Credit Hours</i> |
|-------|------|-----------------------------------------------------|---------------------|
| DETC  | 101  | Diesel Drive Train Theory                           | 4                   |
| DETC  | 103L | Manual Shift Transmissions Lab                      | 2                   |
| DETC  | 104L | Drive Axles, Brakes and Automatic Transmissions Lab | 3                   |
| DETC  | 105L | Hydraulic Systems                                   | 2                   |
| #AUTC | 113  | Transportation Electronics                          | 3                   |
| DETC  | 111  | Diesel Engine Theory                                | 2                   |
| DETC  | 111L | Diesel Engine Overhaul                              | 3                   |
| DETC  | 112L | Precision Measurement and Component Repair Lab      | 2                   |
| DETC  | 113L | Engine Tune-up and Testing Lab                      | 2                   |
| DETC  | 201  | Diesel Electrical Theory                            | 2                   |
| DETC  | 201L | Diesel Electrical Lab                               | 3                   |
| DETC  | 202  | Diesel Fuel Injection Theory                        | 1                   |
| DETC  | 202L | Diesel Fuel Injection Lab                           | 2                   |
| DETC  | 203  | Transport Refrigeration/Air Conditioning Theory     | 1                   |

|                        |      |                                                        |           |
|------------------------|------|--------------------------------------------------------|-----------|
| DETC                   | 203L | Transport Refrigeration/Air Conditioning Lab . . . . . | 2         |
| EPT                    | 213  | Occupational Safety . . . . .                          | 3         |
| <b>Total . . . . .</b> |      |                                                        | <b>37</b> |

#Automotive Technology course

**DETC 101 Diesel Drive Train Theory 4 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Emphasis is on safety, disassembly, evaluation, reassembly, adjustment, troubleshooting and testing of drive train components. Lessons are presented on air brake troubleshooting and repair, final drive units, hydraulic system components and circuits.

**DETC 103L Manual Shift Transmissions Lab 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Shop safety, disassembly, evaluation, assembly and adjustment of manual shift transmissions used in trucks are included in this course. Also covered are single and twin countershaft transmissions, auxiliary transmissions and transfer gear cases. (5 lab hours a week = 75 lab hours a term)

**DETC 104L Drive Axles, Brakes and Automatic Transmissions Lab 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Shop safety and disassembly, evaluation, assembly and adjustment of automatic transmissions, drive axles, clutches and other drive train components are presented. Air and hydraulic brake system components are disassembled, evaluated and reassembled. (7.5 lab hours a week = 112.5 lab hours a term)

**DETC 105L Hydraulic Systems 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Shop safety, disassembly, evaluation and assembly of hydraulic pumps, valves, actuators and hydraulic circuits used in the heavy-equipment industry are presented. Hydrostatic transmissions and in-line circuit testers are covered. (5 lab hours a week = 75 lab hours a term)

**DETC 111 Diesel Engine Theory 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Emphasis is placed on two- and four-stroke cycle diesel engine operating principles. Operation, troubleshooting and repair procedures are covered for blocks, crankshafts, camshafts, rods, bearings, pistons, cylinder heads, lubrication systems, cooling systems, fuel systems, air induction and exhaust systems. Job seeking and retention skills are stressed.

**DETC 111L Diesel Engine Overhaul 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Engine disassembly, evaluation and reassembly techniques are covered in this course. Engines are assembled to manufacturer's recommended specifications then operated and ad-

justed on a test stand. (7.5 lab hours a week = 112.5 lab hours a term)

**DETC 112L Precision Measurement and Component Repair Lab 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval; prerequisite: DETC 102 or department approval; pre- or corequisite: DETC 111)* The uses of micrometers and dial indicators are presented. Measurements are done on engines then compared to manufacturer's specifications. Component repair involves disassembly, evaluation and reassembly of units such as blowers, turbochargers, oil pumps, water pumps and fuel transfer pumps. (5 lab hours a week = 75 lab hours a term)

**DETC 113L Engine Tune-Up and Testing Lab 2 credit hours**

Engine adjustments and tune-ups are performed on major brands of engines. Troubleshooting skills are practiced on engines in operating condition. (5 lab hours a week = 75 lab hours a term)

**DETC 201 Diesel Electrical Theory 2 credit hours**

Students study shop safety and diagnosis and troubleshooting procedures of electrical systems and diesel components.

**DETC 201L Diesel Electrical Lab 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)* Students practice shop safety and diagnostic and troubleshooting procedures of electrical components and diesel systems. (5 lab hours a week = 75 lab hours a term)

**DETC 202 Diesel Fuel Injection Theory 1 credit hour**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)* Safety, diagnosis, troubleshooting and repair of fuel injection systems and diesel components are reviewed.

**DETC 202L Diesel Fuel Injection Lab 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)* Safety and diagnosis, troubleshooting and repair procedures on fuel injection systems and diesel components are practiced. (5 lab hours a week = 75 lab hours a term)

**DETC 203 Transport Refrigeration/Air Conditioning Theory 1 credit hour**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval; pre- or corequisite: DETC 201 or department approval)* Shop safety and diagnostic, troubleshooting and repair procedures of transport refrigeration and air conditioning systems are studied.

**DETC 203L Transport Refrigeration/Air Conditioning Lab 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)* Students practice shop safety while learning diagnostic, troubleshooting and repair procedures on transport refrigeration and air conditioning systems. (5 lab hours a week = 75 lab hours a term)

hours a term)

**DETC 296 Special Topics**

**1-6 credit hours**

*(Prerequisite: department approval)* This course includes an in-depth study of problems and the advanced techniques diesel technicians use in responding to them.

## ELECTRICAL TRADES

The Electrical Trades certificate program provides the student with job-site safety training, OSHA compliance and entry-level skills for employment in electrical construction, maintenance or related fields. Courses also may be applied toward a degree in Construction Technology.

Lab instruction is conducted on- and off-campus, enabling students to gain on-the-job experience in electrical installation. Electrical safety, circuitry, residential electrical materials, residential wiring, residential services, commercial/industrial materials, industrial power distribution, motor control and PLC (programmable logic controller) installation, operation and troubleshooting are covered in the lab activities. Theory instruction includes NEC (National Electrical Code) compliance, technical information, math, residential and commercial blueprint reading, and material analysis.

Students must have normal color differentiation, be free from chronic respiratory diseases and allergies and be able to lift 50 pounds. A valid drivers's license and a good driving record are required by most employers.

A suggested schedule per term includes;

Term 1: BA 111, 131, ELTR 101, 102, 103L, 104L

Term 2: ELTR 112, 113, 114L, 115L, EPT 213

Term 3: ELT 201, 202, 203, 204L, 205L

Term 4: ELTR 211, 212, 213L, 214L

*Credit Hours*

|      |      |                                  |   |
|------|------|----------------------------------|---|
| *BA  | 131  | Human Relations (7.5 weeks)      | 2 |
|      | or   |                                  |   |
| *PSY | 105  | Introduction to Psychology       | 3 |
|      | or   |                                  |   |
| *SOC | 101  | Introduction to Sociology        | 3 |
| *BA  | 111  | Communications (7.5 weeks)       | 2 |
|      | or   |                                  |   |
| *ENG | 101  | College Writing                  | 3 |
| ELTR | 101  | Electrical Theory I              | 4 |
| ELTR | 102  | Electrical Math I                | 3 |
| ELTR | 103L | Electrical DC/AC Lab             | 3 |
| ELTR | 104L | AC Circuitry, Motors, Generators | 3 |
| ELTR | 112  | Blueprint Reading I              | 3 |
| ELTR | 113  | Electrical Theory II             | 4 |
| ELTR | 114L | Wiring Lab                       | 3 |

|                        |      |                                                      |              |
|------------------------|------|------------------------------------------------------|--------------|
| ELTR                   | 115L | Electrical Services . . . . .                        | 3            |
| EPT                    | 213  | Occupational Safety . . . . .                        | 3            |
| ELTR                   | 201  | Electrical Theory III . . . . .                      | 4            |
| ELTR                   | 203  | Electrical Motor Control Theory . . . . .            | 3            |
| ELTR                   | 204L | Industrial Motor Control Lab . . . . .               | 3            |
| ELTR                   | 205L | Industrial Power Distribution . . . . .              | 3            |
| ELTR                   | 211  | Industrial Electrical Circuitry and Safety . . . . . | 3            |
| ELTR                   | 212  | Programmable Logic Controller Theory . . . . .       | 4            |
| ELTR                   | 213L | PLC Installation and Operation . . . . .             | 3            |
| ELTR                   | 214L | PLC Systems Operation and Troubleshooting . . . . .  | 3            |
| <b>Total . . . . .</b> |      |                                                      | <b>59-61</b> |

#Business Occupations course

\*Arts & Sciences course

### Optional Courses

|      |      |                                              |   |
|------|------|----------------------------------------------|---|
| ELTR | 170  | Electrical Wiring Circuitry . . . . .        | 2 |
| ELTR | 171L | Conduit Hand Bending Fundamentals . . . . .  | 1 |
| ELTR | 173  | Industrial Motor Control Circuitry . . . . . | 2 |
| ELTR | 174L | Industrial PC Motor Control . . . . .        | 3 |
| ELTR | 175  | Fiber Optical Cable Installation . . . . .   | 2 |
| ELTR | 176  | Electrical Journeyman Preparation . . . . .  | 3 |

#### **ELTR 101 Electrical Theory I 4 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval; pre- or corequisite: ELTR 102)* This course covers the basic concepts of DC and AC electricity with emphasis on Ohm's Law, Kirchoff's Law, circuit analysis and troubleshooting. Subject areas include DC and AC theory, symbol identification, schematic reading, circuit application, magnetism, basic transformers, single-phase motors and application of the National Electrical Code.

#### **ELTR 102 Electrical Math I 3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)* Topics include basic arithmetic functions, electrical formulas, calculations of material and circuit load requirements, rules for series, parallel and combination circuits and mechanical work and power.

#### **ELTR 103L Electrical DC/AC Lab 3 credit hours**

*(Pre- or corequisite: ELTR 101, 102 or department approval)* Emphasis is placed on safety. Topics include electrical circuitry, meters, power sources, conductors, insulators, reactive circuits and application of the National Electrical Code. (7.5 lab hours a week = 112.5 lab hours a term)

#### **ELTR 104L AC Circuitry, Motors, Generators 3 credit hours**

*(Pre- or corequisite: ELTR 101, 102 or department approval)* Subjects include combina-

tion circuit analysis, RLC circuitry, DC/AC motors, generators, solid-state components, wiring methods for single pole and three-way switches and application of the National Electrical Code. Safety is stressed. (7.5 lab hours a week = 112.5 lab hours a term)

**ELTR 112      Blueprint Reading I      3 credit hours**  
*(Pre- or corequisite: ELTR 101 or department approval)* Instruction is provided in reading and interpreting blueprints and specifications. Emphasis is on terminology, symbols, notations, scaling, dimensioning and basic blueprint drawing techniques.

**ELTR 113      Electrical Theory II      4 credit hours**  
*(Pre- or corequisite.. ELTR 112 or department approval)* This course covers the application of the National Electrical Code, local codes and regulations for installation of branch circuits, services, feeders, temporary services and associated materials and equipment for residential and light commercial applications.

**ELTR 114L      Wiring Lab      3 credit hours**  
*(Pre- or corequisite: ELTR 112, 113 or department approval)* This course covers safety, tools, materials, single pole switches, receptacles, overcurrent protection, three- and four-way switches, pilot switches, door chimes, dryer and range receptacles and swamp coolers, as well as NEC requirements for residential and light commercial applications. (7.5 lab hours a week = 112.5 lab hours a term)

**ELTR 115L      Electrical Services      3 credit hours**  
*(Pre- or corequisite.. ELTR 112, 113 or department approval)* This course allows students to study and build residential services, install circuit panels, cut and thread rigid conduit, hand bend and install EMT conduit in adherence to the National Electrical Code. (7.5 lab hours a week = 112.5 lab hours a term)

**ELTR 170      Electrical Wiring Circuitry      2 credit hours**  
This course provides instruction in the interpretation, design and wiring of common switch, receptacle and related circuitry in accordance with the NEC and state and local codes.

**ELTR 171L      Conduit Hand Bending Fundamentals      1 credit hour**  
This theory/lab course provides instruction in the computation and placement of conduit hand benders to bend and install conduit systems in accordance with the NEC and state and local codes. (.5 theory + 2 lab hours a week = 7.5 theory + 30 lab hours a term)

**ELTR 173      Industrial Motor Control Circuitry      2 credit hours**  
The design, interpretation, drawing and installation of electromechanical relay type motor controls in accordance with the National Electrical Code are presented.

**ELTR 174L      Industrial PC Motor Control      3 credit hours**  
The operation of programmable logic controllers, interpretation of PLC logic diagrams and the installation of programming of PLC systems in accordance with the National Electrical Code are reviewed and applied. (1 theory + 5 lab hours a week)

**ELTR 175      Fiber Optical Cable Installation      2 credit hours**

This theory course introduces the installation of fiber optical cable in various systems. Emphasis is placed on proper installation and termination.

**ELTR 176      Electrical Journeyman Preparation      3 credit hours**

The use and application of the National Electrical Code and the duties encountered by journeymen on typical job sites are reviewed in preparation for the New Mexico journeyman's electrical exam.

**ELTR 201      Electrical Theory III      4 credit hours**

*(Prerequisite: ELTR 111, 112, 113, 114L or 115L or department approval)* This course introduces students to the commercial/industrial aspects of electrical safety, tools, materials, power distribution systems, services, hazardous locations, intrusion/fire alarm systems in accordance with the National Electrical Code and blueprint reading.

**ELTR 203      Electrical Motor Control Theory      3 credit hours**

*(Prerequisite: ELTR 112 or department approval; pre- or corequisite: ELTR 201)* This course introduces students to the symbology and method of interpreting and drawing electromechanical motor control circuitry. NEMA standards are studied in detail.

**ELTR 204L      Industrial Motor Control Lab      3 credit hours**

*(Pre- or corequisite: ELTR 203, 205L or department approval)* Topics include safety, electromechanical relay-type motor control, momentary push button switches, limit switches, proximity switches, pneumatic timers, forward/reverse starters, three-phase motors and National Electrical Code requirements. (7.5 lab hours a week = 112.5 lab hours a term)

**ELTR 205L      Industrial Power Distribution      3 credit hours**

*(Pre- or corequisite: ELTR 201, 204L or department approval)* This lab covers safety, use of mechanical and hydraulic benders, use of power threaders, knock-out punches, hammer drills and powder actuated fasteners, drop-in anchors, cable installation, cutting, splicing and termination, wire pulling and the application of the NEC. (7.5 lab hours a week = 112.5 lab hours a term)

**ELTR 211      Industrial Electrical Circuitry and Safety      3 credit hours**

*(Prerequisite: ELTR 201, 202, 203, 204L, 205L or department approval)* Instruction in safety principles and standards used in the electrical field and techniques for electrical troubleshooting are emphasized.

**ELTR 212      Programmable Logic Controller Theory      4 credit hours**

*(Pre- or corequisite: ELTR 211 or ELEC 103L, 105L, 118L or department approval)* Topics include the principles of operation of a programmable controller, the numbering systems used by controllers, logic fundamentals and basics of programming.

**ELTR 213L      PLC Installation and Operation      3 credit hours**

*(Pre- or corequisite: ELTR 211, 212 or ELEC 103L, 105L, 118L or department approval)*

Students install and program programmable logic controllers in accordance with manufacturer's specifications and NEC requirements. Simulating fundamental industrial control processes with various input and output devices is also covered. (7.5 lab hours a week = 112.5 lab hours a term)

**ELTR 214L PLC Systems Operation and Troubleshooting 3 credit hours**  
*(Pre- or corequisite: ELTR 211, 212 or department approval)* This course covers intricate industrial wiring, motor controls and motor troubleshooting, programmable controller timer, counter and sequence program operations and the troubleshooting techniques involved. (7.5 lab hours a week = 112.5 lab hours a term)

**ELTR 296 Special Topics 1-6 credit hours**  
*(Prerequisite: department approval)* This course provides advanced, in-depth study and research into methods and current technological equipment used in the electrical trades.

## ENVIRONMENTAL TECHNOLOGY

The Environmental Technology associate of applied science degree program provides basic classroom instruction in the diverse field of environmental and occupational safety from a health and safety perspective. The curriculum also provides coursework designed to upgrade skills of individuals already employed in the field.

The student receives a broad, general understanding of environmental problems, as well as physical science instruction, in preparation for entry-level jobs. Instruction is provided in biology, chemistry, physics, ecology, environmental legislation, regulation compliance and abatement. The program addresses key areas of environmental protection including biological and hazardous waste, water quality protection, air quality protection, soil, domestic and industrial waste control, workplace safety, energy management and recycling.

|     |      |                                                  | <i>Credit Hours</i> |
|-----|------|--------------------------------------------------|---------------------|
| EPT | 102  | Emergency Response .....                         | 3                   |
| EPT | 111  | Environmental Technology I.....                  | 4                   |
| EPT | 112  | Hazards and Protection Training .....            | 3                   |
| EPT | 173  | Water Quality Protection .....                   | 3                   |
| EPT | 299  | Cooperative Education or approved elective ..... | 3                   |
| EPT | 211L | Environmental Technology II/Lab .....            | 4                   |
| EPT | 212  | Energy and Waste Management.....                 | 3                   |
| EPT | 213  | Occupational Safety .....                        | 3                   |
| EPT | 215  | Environmental Instrumentation and Analysis.....  | 3                   |
| EPT | 131  | Materials Categorization and Analysis .....      | 4                   |
| EPT | 232  | Air Quality Protection .....                     | 1                   |
| EPT | 233  | Environmental Bioremediation .....               | 4                   |



- EPT 111 Environmental Technology I 4 credit hours**  
*(Prerequisites: MATH 100, ENG 100 or department approval)* 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.
- EPT 112 Hazards and Protection Training 3 credit hours**  
*(Prerequisite: EPT 101, EPT 213, CHEM 111, CHEM 112L, computer elective or department approval)* Training is provided in safe work practices at hazardous waste sites. Procedures specified by OSHA in the 29 CFR 1910.120 regulation concerning safety and health plans, site characterization and analysis, waste removal and remedial operations are covered. (7.5 lab hours a week = 112.5 lab hours a term)
- EPT 131 Materials Categorization and Analysis 4 credit hours**  
*(Prerequisite: CHEM 111/112L or department approval)* This course introduces fundamentals of analysis of hazardous and non-hazardous materials. Emphasis is on the use of proper techniques and protocols.
- EPT 170 Introduction to OSHA Compliance 3 credit hours**  
Everyday application of Occupational Safety and Health Administration (OSHA) standards required in today's workplace is covered.
- EPT 171 Introduction to Safety Management 3 credit hours**  
Behavioral and management techniques for safety in today's demanding workplace are presented. Topics include planning, budgeting, communications, motivation and people skills.
- EPT 172 Introductory Soil Science 3 credit hours**  
Soil profiles, standard soil classification systems, elementary soil biology and chemistry, root zone interactions, nutrient cycling and agricultural considerations are reviewed.
- EPT 173 Water Quality Protection 3 credit hours**  
*(Prerequisite: EPT 111, CHEM 111, CHEM 112L, math elective, computer elective or department approval)* Students study water supply system operations, distribution systems and basic hydraulics and become familiar with water quality protection and treatment techniques including backflow prevention and cross connection control. (1 theory + 5 lab hours a week = 15 theory plus 75 lab hours a term)
- EPT 174 Basic Site Remediation Technology 3 credit hours**  
Major remedial technologies for site cleanup under federal, state and local regulations are emphasized. Physical, biological, chemical and thermal treatments in common use are presented.
- EPT 175 Pest Management 3 credit hours**  
Multiple pest types--insects, weeds, rodents and fungal pests--are addressed, along with control techniques and impacts on the environment.

**EPT 176            Food Resources and the Environment            3 credit hours**

The impact of food resource choices on the quality of the environment and human health is presented. Economic, ecological and social aspects of food resource production and consumption are explored.

**EPT 177            Business Aspects of Environmental Technology            3 credit hours**

*(Prerequisites: EPT 111, ENG 101 and ENG 119)* Business aspects of environmental services and consulting are included in the course. The increasingly competitive nature of the environmental business arena is emphasized.

**EPT 178            Industrial Hygiene for Environmental Technicians            3 credit hours**

*(Prerequisites: CHEM 111 and CHEM 112L)* Recognition, evaluation and control of health hazards encountered during hazardous waste clean-up and emergency responses are presented. Personnel monitoring, chemistry, toxicology, pathology and air surveillance are covered.

**EPT 179            Sampling Design and Polychlorinated Biphenyl            3 credit hours**

*(Prerequisite: EPT 111 or department approval)* Practice sampling technique and statistically superior field environmental sampling designs are provided. EPA's Polychlorinated biphenyl (PCB) sampling grid design is covered, as well as regulations, spills and clean-ups.

**EPT 211L          Environmental Technology II/Lab            4 credit hours**

*(Prerequisite: EPT 111, BIO 231L, CHEM 212L, physics elective, math elective or department approval)* Technical, operational and regulatory aspects of environmental technology are presented. Identification and handling of biological, chemical and nuclear wastes are presented, as well as site sampling, characterization and assessment, waste removal and site remediation methods. (2 theory + 5 lab hours a week = 30 theory + 75 lab hours a term)

**EPT 212            Energy and Waste Management            3 credit hours**

*(Prerequisite: EPT 111, CHEM 111, CHEM 112L, physics elective, math elective, computer elective or department approval)* This course provides an orientation to energy and waste management focusing on energy requirement assessments, energy conservation techniques and waste reduction and control.

**EPT 213            Occupational Safety            3 credit hours**

Principles and standards of safety are introduced. Basic safety concepts and monitoring procedures are emphasized, culminating in inspections and projects that contribute to the TVI safety program.

**EPT 215            Environmental Instrumentation and Analysis            3 credit hours**

*(Prerequisite: EPT 111, math elective or department approval; corequisite: EPT 211L)* Contemporary environmental instrumentation and analytical techniques are explored in this hands-on introduction to the care and use of laboratory and field-portable instruments. Maintenance

nance, calibration and operation of instruments and meters are covered, along with EPA protocols. (2 theory + 2.5 lab hours a week = 75 theory + 37.5 lab hours a term)

**EPT 232 Air Quality Protection 1 credit hour**

*(Prerequisite: EPT 111, CHEM 111, CHEM 112L, math elective, computer elective or department approval)* Topics include the fundamentals of vehicle pollution control, city, state and federal rules and regulations governing air pollution, general and point-source emissions and standard air pollution control methods. (.5 theory + 2.5 lab hours a week = 7.5 theory + 37.5 lab hours a term)

**EPT 233 Environmental Bioremediation 4 credit hours**

*(Prerequisite: BIOL 121/121L or department approval)* This is an introduction to the basic concepts of bioremediation to detoxify hazardous contaminants.

**EPT 270 Air Pollution Meteorology 3 credit hours**

Basic meteorology and climatology, mainly in the Southwest United States, are presented. Applications to ambient air monitoring, dispersion modeling, air discharge permitting, air quality and hazardous waste transport and sampling considerations are emphasized.

**EPT 271 Ambient Air Monitoring and Clean Air Act 3 credit hours**

The federal Clean Air Act (CAA) and the EPA's and NMED's regulations and enforcement actions are the focus of this course. Also covered are criteria for the location, construction, instrumentation and operation of meteorological and air chemistry monitoring stations operated for data collection and permit compliance.

**EPT 296 Special Topics 1-6 credit hours**

*(Prerequisite: department approval)* This course includes an in-depth study of problems and advanced techniques.

**EPT 299 Cooperative Education 3 credit hours**

The student is employed at an approved course-related work site and applies learned environmental theory based on goals and objectives.

# FIRE SCIENCE

The Fire Science program offers career preparation for students with a strong interest in the fields of fire protection and emergency response. Upon completion of the associate of applied science degree, graduates will be qualified for a variety of fire service and emergency response positions in the fields of fire protection services, industrial fire protection, hazardous materials, insurance services, fire protection systems service and fire prevention. This program maintains a close working relationship with area providers of fire protection and emergency response services.

The program consists of a comprehensive core courses supplemented by a wide range of electives. In addition, the student will complete Arts & Sciences courses. It is recommended that entering students meet with the faculty to discuss their career and educational objectives.

|                                               |      |                                                | <i>Credit Hours</i> |
|-----------------------------------------------|------|------------------------------------------------|---------------------|
| FITT                                          | 170  | Physical Fitness I.....                        | 1                   |
| EPT                                           | 213  | Occupational Safety.....                       | 3                   |
| FS                                            | 102  | Fire Service Organization.....                 | 3                   |
| FS                                            | 103  | Introduction to Fire Science.....              | 3                   |
| FS                                            | 111  | Fire Prevention.....                           | 3                   |
| FS                                            | 112  | Building Construction.....                     | 3                   |
| FS                                            | 201  | Fire Protection Systems.....                   | 3                   |
| FS                                            | 202  | Managing Community Fire Protection.....        | 3                   |
| FS                                            | 203  | Hazardous Material.....                        | 3                   |
| FS                                            | 211  | Incident Command and Control.....              | 3                   |
| *#EMS                                         | 160L | Basic Emergency Medical Technician Skills..... | 7                   |
| *FS                                           | 212  | Fire Investigation.....                        | 3                   |
| *FS                                           | 213  | Industrial Fire Protection.....                | 3                   |
| *FS                                           | 214  | Facilities Inspection.....                     | 3                   |
| *FS                                           | 215  | Tactics I.....                                 | 3                   |
| *FS                                           | 216  | Tactics II.....                                | 3                   |
| *FS                                           | 299  | Cooperative Education.....                     | 3                   |
| (FS 299 may be repeated for up to 9 credits.) |      |                                                |                     |

\*Students have the option of any of these courses for a total of 15 credit hours,  
#Health Occupations course

## Computer Requirement

|      |      |                                                       |   |
|------|------|-------------------------------------------------------|---|
| BA   | 150  | Introduction to Computer Processing                   |   |
|      | or   |                                                       |   |
| CP   | 176L | Introduction to Technology Computer Applications..... | 4 |
|      | or   |                                                       |   |
| CSCI | 101  | Computer Literacy                                     |   |

## Required Arts & Sciences Courses

|              |               |                               |           |
|--------------|---------------|-------------------------------|-----------|
| CHEM         | 111/112L      | Introduction to Chemistry/Lab | 4         |
| COMM         | 130 or higher |                               | 3         |
| ENG          | 101           | College Writing               | 3         |
| ENG          | 119           | Technical Communications      | 3         |
| MATH         | 120           | Intermediate Algebra          | 4         |
| PHYS         | 102           | Introduction to Physics       | 3         |
| PSY          | 105 or higher |                               | 3         |
| SOC          | 101           | Introduction to Sociology     | 3         |
| SOC          | 216           | Ethnic and Minority Groups    | 3         |
| <b>Total</b> |               |                               | <b>76</b> |

**FS 102                      Fire Service Organization                      3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

In an orientation to basic management principles used in modern fire protection organizations, topics include the fire protection system, fire department organization and management, planning and evaluating systems, data collection, resource management and budgeting.

**FS 103                      Introduction to Fire Science                      3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

This course presents an overview of the fire protection system focusing on the history of the fire service, fire protection careers and employment requirements, fire service organizations, firefighting equipment and facilities, and chemistry and behavior of fire.

**FS 111                      Fire Prevention                      3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

A basic overview is presented of fire prevention programs and specific techniques used to reduce the occurrence of fire. Public fire safety education programs and basic concepts of installed fire protection and detection systems are covered.

**FS 112                      Building Construction                      3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Building construction is introduced with emphasis on structural elements, construction materials, construction techniques, fire loading, fire resistance, fire spread and growth in buildings and fire department operations in various building types.

**FS 201                      Fire Protection Systems                      3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

This course presents an in-depth study of fire protection system design and operation. A variety of fire suppression systems are discussed including water, carbon dioxide, halon, dry chemical and foam.

**FS 202                    Managing Community Fire Protection                    3 credit hours**

*(Prerequisite: FS 102 or department approval)* Topics include legal aspects, program and personnel management, emergency management, EMS and rescue services, code administration, alternative delivery systems, training and trends in the fire service.

**FS 203                    Hazardous Materials                    3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*  
(Note: Students are required to wear respiratory protection equipment and participate in simulated hazardous materials incidents. Students must complete a pulmonary function test and medical review at the student's expense. Documentation of the medical evaluation must be submitted prior to simulations.) Topics include recognition and identification of hazardous materials and defensive actions to prevent additional injuries and property and/or environmental damage. This course meets selected NFPA and OSHA requirements at the Hazardous Materials Operations level.

**FS 211                    Incident Command and Control                    3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*  
Specific incident management techniques for a variety of emergency incidents are covered. The course includes basic fireground and emergency incident operations, incident management systems and multi-agency/multi-jurisdiction response.

**FS 212                    Fire Investigation                    3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*  
The course focuses on investigative techniques to determine fire cause and origin for structural, vehicle, wildland and hazardous materials fires as well as explosions.

**FS 213                    Industrial Fire Protection                    3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*  
In-depth information is presented regarding industrial loss control concepts focusing on industrial fire and safety hazards, hazardous materials, industrial fire brigades, fire department operations at industrial facilities, and NFPP, ISFSI and OSHA fire brigade standards.

**FS 214                    Facilities Inspection                    3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*  
Emphasis is placed on inspections conforming to NFPA 101: Life Safety Code and applicable NFPA fire codes. General and occupancy-specific requirements are covered.

**FS 215                    Tactics I                    3 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*  
In-depth information is provided on strategy and tactics used by fire officers at emergency incidents. Topics include structural firefighting, rescue, apparatus placement, water supply, ventilation, fire suppression systems, forcible entry and making fireground decisions.

**FS 216                      Tactics II                                              3 credit hours**  
*(Prerequisites: FS 215 or department approval)* Topics include high-rise operations, urban search and rescue, wildland fires, aircraft emergencies, hazardous materials, mass casualty incidents and firefighter safety.

**FS 296                      Special Topics                                              1-6 credit hours**  
*(Prerequisite: department approval)* Current topics in fire protection and emergency services are presented.

**FS 299                      Cooperative Education                                              3 credit hours**  
 The student is employed at an approved course-related work site and applies learned theory based upon goals and objectives of the Fire Science program.

## FITNESS TECHNICIAN

The Fitness Technician (FITT) certificate program's intent is to increase the availability of qualified professionals who assess an apparently healthy individual's present physical fitness level and health status as well as design and implement an appropriate exercise program. The goals are:

1. To prepare individuals for employment in the health and fitness industry as personal fitness trainers.
2. To prepare individuals to sit for the American College of Sports Medicine's Health/Fitness Instructor and the National Strength and Conditioning Association's Certified Personal Trainer certification exams.
3. To provide course work for continuing education units (CEUs) required by certifying organizations to maintain certification as a personal fitness trainer.

In order to graduate from the Fitness Technician program, a student must have current American Red Cross or American Heart Association CPR certification.

A new class begins every fall term.

The program also offers fitness classes that are required for other programs and are open to all students.

A suggested schedule includes:

Fall Term:            FITT 209, 211, 277, computer course

Spring Term:        FITT 225, 289, 290, 298 or 299

|              |     |                                                         | <i>Credit Hours</i> |
|--------------|-----|---------------------------------------------------------|---------------------|
| FITT         | 209 | Introduction to Exercise Physiology . . . . .           | 3                   |
| FITT         | 211 | The Business of Personal Fitness Training . . . . .     | 3                   |
| FITT         | 225 | Fitness and Weight Control . . . . .                    | 3                   |
| FITT         | 277 | Kinesiology . . . . .                                   | 3                   |
| FITT         | 289 | Fitness Assessment and Exercise Prescription . . . . .  | 3                   |
| FITT         | 290 | Exercise Prescription for Special Populations . . . . . | 3                   |
| FITT         | 298 | Fitness Technician Field Experience                     |                     |
| or . . . . . |     |                                                         | 3                   |

FITT 299 Cooperative Education

### Computer Requirement

BA 150 Introduction to Computer Processing

or

CP 176L Introduction to Technology Computer Applications . . . . . 4

or

CSCI 101 Computer Literacy

**Total** . . . . . 25

### Optional Courses

FITT 170 Physical Fitness I . . . . . 1

FITT 171 Physical Fitness II . . . . . 1

FITT 173 Circuit Training . . . . . 1

FITT 174 Weight Training for Women . . . . . 1

FITT 175 Beginning Step Aerobics . . . . . 1

FITT 176 Intermediate Step Aerobics . . . . . 1

**FITT 170 Physical Fitness I 1 credit hour**

Assessment of muscular strength, muscular endurance, cardiorespiratory fitness, flexibility and body composition is introduced. Based on the assessments, the student designs and participates in a self-paced exercise program. (3 lab hours a week = 45 lab hours a term)

**FITT 171 Physical Fitness II 1 credit hour**

*(Prerequisite: FITT 170)* Based on fitness assessments, the student designs and participates in an advanced, self-paced exercise program. (3 lab hours a week = 45 lab hours a term)

**FITT 173 Circuit Training 1 credit hour**

Structured strength training and aerobics to provide a total body workout within a single format. (3 lab hours a week = 45 lab hours a term)

**FITT 174 Weight Training for Women 1 credit hour**

This introductory weight training course designed for women focuses on the use of free weights and machine exercises to develop muscle endurance, hypertrophy and muscular strength. (3 lab hours a week = 45 lab hours a term)

**FITT 175 Beginning Step Aerobics 1 credit hour**

For individuals who have never participated in a step aerobics program. Cardiorespiratory fitness, flexibility and body composition are addressed. (3 lab hours a week = 45 lab hours a term)

**FITT 176 Intermediate Step Aerobics 1 credit hour**

*(Prerequisite: FITT 175 or department approval)* For those who know the proper steps on

command. (3 lab hours a week = 45 lab hours a term)

**FITT 209 Introduction to Exercise Physiology 3 credit hours**  
(Prerequisite: RDG 100 or equivalent) How the human body responds and adapts to exercise and physical training is introduced. Scientifically based exercise programs are covered with applications to individual and team sports. (2 theory + 2.5 lab hours a week = 30 theory + 37.5 lab hours per term) (Fall term only)

**FITT 211 The Business of Personal Fitness Training 3 credit hours**  
(Prerequisite: ENG 100 or equivalent) This course focuses on the business of personal training, including marketing services and programs, day-to-day operations, documentation, financial considerations, liability concerns, and trends and issues in the health/fitness industry. (2 theory + 2.5 lab hours a week = 30 theory + 37.5 lab hours per term) (Fall term only)

**FITT 225 Fitness and Weight Control 3 credit hours**  
(Prerequisites: FITT 209 and ENG 100 or equivalent) This course provides basic understanding of the interrelationship among exercise, weight control and nutrition. Applications are made to dietary analysis, energy balance, fat loss and weight gain programs. (2 theory + 2.5 lab hours a week = 30 theory + 37.5 lab hours per term) (Spring term only)

**FITT 277 Kinesiology 3 credit hours**  
(Prerequisite: RDG 100 or equivalent) The physiological and kinesiological aspects of muscular fitness training are covered. Special emphasis is placed on designing strength, endurance, hypertrophy and power resistance/weight training programs. (2 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours per term) (Fall term only)

**FITT 289 Fitness Assessment and Exercise Prescription 3 credit hours**  
(Prerequisites: FITT 209, 277 and MATH 100A) Methods of assessing health status, cardiorespiratory and muscular fitness, flexibility and body composition in apparently healthy individuals are covered and appropriate exercise programs are prescribed. (2 theory + 2.5 lab hours a week = 30 theory + 37.5 lab hours per term) (Spring term only)

**FITT 290 Exercise Prescription for Special Populations 3 credit hours**  
(Pre- or corequisite: FITT 289) The indications and contraindications are reviewed for assessing and prescribing exercise programs for special populations (elderly, prepubescent children, pregnancy, low back pain, diabetes, spinal cord injury, etc.). (2 theory + 2.5 lab hours a week = 30 theory + 37.5 lab hours per term) (Spring term only)

**FITT 296 Special Topics 1-6 credit hours**  
(Prerequisite: department approval) Fitness problems and the advanced techniques that fitness professionals use in responding to them are covered.

**FITT 298 Fitness Technician Field Experience 3 credit hours**  
(Prerequisite: department approval) This course provides students with a supervised field

experience in a fitness setting. (7.5 lab hours a week = 112.5 hours per term)

**FITT 299 Cooperative Education 3 credit hours**

The student is employed at an approved course-related work site and applies learned theory based on goals and objectives.

## MACHINE TOOL TECHNOLOGY

The Machine Tool Technology certificate program qualifies students for job entry as machine tool operators. Courses also may be applied toward a degree in Metals Technology.

All courses emphasize safe operations of various machine tools. Classes meet in well equipped labs where students are introduced to micrometers, gauges, drill presses, hand tools, engine lathes, milling machines, computer controlled machining centers and other equipment commonly used throughout the metal-working industry.

Students must be free of chronic respiratory diseases and allergies to oils, solvents and cutting fluids, must be able to stand on concrete floors for the length of a standard work shift and must have depth perception correctable in both eyes.

A suggested schedule includes:

Term 1: MATT 101, 102, 103L, 104L, 105L, 108L

Term 2: MATT 111, 113, 117L, 120L, 121L, 122L

Term 3: MATT 202, 208L, 214, 216L, 217L, 218L

|                        |      |                                                           | <i>Credit Hours</i> |
|------------------------|------|-----------------------------------------------------------|---------------------|
| MATT                   | 101  | Metals Math I . . . . .                                   | 2                   |
| MATT                   | 102  | Metals Blueprint Reading I . . . . .                      | 2                   |
| MATT                   | 103L | Basic Lathe Principles . . . . .                          | 2                   |
| MATT                   | 104L | Basic Milling Machine Principles . . . . .                | 2                   |
| MATT                   | 105L | Basic Supporting Machine Tool Principles . . . . .        | 2                   |
| MATT                   | 108L | Basic Measurement and Inspection . . . . .                | 2                   |
| MATT                   | 111  | Metals Math II . . . . .                                  | 2                   |
| MATT                   | 113  | Metals Blueprint Reading II . . . . .                     | 2                   |
| MATT                   | 117L | Intermediate Lathe Principles . . . . .                   | 2                   |
| MATT                   | 120L | Intermediate Milling Machine Principles . . . . .         | 2                   |
| MATT                   | 121L | Intermediate Supporting Machine Tool Principles . . . . . | 2                   |
| MATT                   | 122L | Computer Numerical Control I . . . . .                    | 2                   |
| MATT                   | 202  | Metallurgy . . . . .                                      | 2                   |
| MATT                   | 208L | Advanced Lathe Principles . . . . .                       | 2                   |
| MATT                   | 214  | Machine Tool Technology CAD . . . . .                     | 2                   |
| MATT                   | 216L | Advanced Milling Machine Principles . . . . .             | 2                   |
| MATT                   | 217L | Advanced Supporting Machine Tool Principles . . . . .     | 2                   |
| MATT                   | 218L | Computer Numerical Control II . . . . .                   | 2                   |
| <b>Total . . . . .</b> |      |                                                           | <b>36</b>           |

## Optional Courses

|      |     |                                              |   |
|------|-----|----------------------------------------------|---|
| MATT | 173 | Machine Tool Technology Skills . . . . .     | 3 |
| MATT | 174 | Advanced Machine Tool Technology Skills..... | 3 |

**MATT 101      Metals Theory I      2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Whole numbers, fractions and decimals, shop geometry and algebra, formulas and equations, and the Pythagorean theorem are presented. Emphasis is on developing problem solving skills.

**MATT 102      Metals Blueprint Reading I      2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

The interpretation of basic manufacturing and fabrication drawings, terminology, orthographic projection, sectional views, dimensions, tolerances, symbols and drawing standards are covered.

**MATT 103L      Basic Lathe Principles      2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

This is an introduction to basic engine lathe principles and operations. Safety, setup, speeds and feeds, workholding devices and tooling, facing, turning, chamfering, shouldering and tailstock operations are included. (5 lab hours a week = 75 lab hours a term)

**MATT 104L      Basic Milling Machine Principles      2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Basic milling machine principles and operations are introduced. Safety, basic setup, speeds and feeds, tooling, workholding devices, squaring, step milling, drilling, reaming, and tapping are covered. (5 lab hours a week = 75 lab hours a term)

**MATT 105L      Basic Supporting Machine Tool Principles      2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Drill press, bandsaw, pedestal grinder and handtool principles and operations are introduced. Safety, care and use of hand tools, layout, toolbit grinding and machine care and maintenance are covered. (5 lab hours a week = 75 lab hours a term)

**MATT 108L      Basic Measurement and Inspection      2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Practical exercises are provided in basic metal shop measurement and inspection techniques, including use of rules, calipers, micrometers, comparison instruments and inspection reports. (5 lab hours a week = 75 lab hours a term)

**MATT 111      Metals Math II      2 credit hours**

*(Prerequisite: MATT 101 or department approval)* Basic shop algebra, formulas, geometry and triangulation are reviewed. Calculation of areas, volumes, material requirements, angles, applied trigonometry and advanced shop math applications are covered.

**MATT 113      Metals Blueprint Reading II      2 credit hours**

*(Prerequisite: MATT 102 or department approval)* Following a review of basic shop blueprint interpretation, instruction is provided in interpretation of complex manufacturing and fabrication drawings including sectional views, tolerances and allowances, surface texture and assembly drawings.

**MATT 117L      Intermediate Lathe Principles      2 credit hours**

*(Prerequisite: MATT 103L or department approval)* Basic engine lathe principles and operations are reviewed, with training in safety, precision turning and facing, production turning, taper turning, carbide tooling applications, power cutoff, boring, single point threading and basic CNC turning set up and operation. (5 lab hours a week = 75 lab hours a term)

**MATT 120L      Intermediate Milling Machine Principles      2 credit hours**

*(Prerequisite: MATT 104L or department approval)* Following a review of basic milling principles and operations, training is offered in safety, climb and conventional milling methods, hole production, slotting, pocket milling, rotary table work and basic CNC milling set-up and operation. (5 lab hours a week = 75 lab hours a term)

**MATT 121L      Intermediate Supporting Machine Tool Principles      2 credit hours**

*(Prerequisite: MATT 105L or department approval)* Concentrated training is offered in safety, surface grinding, tool reconditioning, production support and advanced quality assurance methods. (5 lab hours a week = 75 lab hours a term)

**MATT 122L      Computer Numerical Control I      2 credit hours**

*(Prerequisite: MATT 101 and 102 or department approval)* Basic computer skills necessary to program, set up and operate CNC milling and turning centers are presented. CNC manuscript and tape preparation, program troubleshooting and editing, tooling and workholding and fundamentals of CNC operation are covered. (5 lab hours a week = 75 lab hours a term)

**MATT 173      Machine Tool Technology Skills      3 credit hours**

Basic knowledge and upgrade skills in the machine tool industry are covered, including safety, hand tools, lathe, mill, bench work, measurement, blueprint reading and shop math. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**MATT 174      Advanced Machine Tool Technology Skills      3 credit hours**

*(Prerequisite: MATT 173 or department approval)* Advanced instruction is offered in safety, lathe, mill, blueprint reading and shop math. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**MATT 202      Metallurgy      2 credit hours**

The basic science of metals is introduced, including structure, properties, alloying, weldability and testing of ferrous and non-ferrous metals with emphasis on machining performance and applications.



# MECHANICAL TECHNOLOGY

The Mechanical Technology associate of applied science degree is available with two concentrations: air conditioning and plumbing. Cross training in both programs is provided.

All courses must be passed with a minimum grade of C to qualify for graduation.

## AIR CONDITIONING, HEATING AND REFRIGERATION CONCENTRATION

|      |     |                                              | <i>Credit Hours</i> |
|------|-----|----------------------------------------------|---------------------|
| ACHR | 131 | Refrigeration Fundamentals .....             | 2                   |
| ACHR | 132 | Basic Electricity .....                      | 2                   |
| ACHR | 133 | Refrigerant Management .....                 | 2                   |
| ACHR | 134 | Motors and Controls.....                     | 2                   |
| ACHR | 135 | Refrigeration Applications .....             | 2                   |
| ACHR | 136 | Control Circuit Application .....            | 2                   |
| ACHR | 137 | Code & Safety Requirements I.....            | 1                   |
| ACHR | 151 | Air Conditioning .....                       | 2                   |
| ACHR | 152 | Air Conditioning Controls .....              | 2                   |
| ACHR | 153 | Gas Heating Systems .....                    | 2                   |
| ACHR | 154 | Gas Heating Electrical Systems .....         | 2                   |
| ACHR | 155 | Commercial Refrigeration.....                | 2                   |
| ACHR | 156 | System Design .....                          | 3                   |
| ACHR | 210 | Pumps and Valves .....                       | 2                   |
| ACHR | 211 | Basic Hydronic Principles .....              | 2                   |
| ACHR | 212 | Hot Water and Steam Generation Systems ..... | 2                   |
| ACHR | 213 | Controls I.....                              | 2                   |
| ACHR | 214 | Chilled Water Systems .....                  | 2                   |
| ACHR | 215 | Controls II .....                            | 2                   |
| ACHR | 216 | Code & Safety Requirements II .....          | 1                   |

### Additional Required Trades & Service Occupations Courses

|      |      |                                    |   |
|------|------|------------------------------------|---|
| EPT  | 213  | Occupational Safety .....          | 3 |
| PLMB | 101  | Basic Plumbing Theory .....        | 1 |
| PLMB | 101L | Basic Plumbing Lab .....           | 2 |
| PLMB | 102  | Plumbing Systems Theory .....      | 1 |
| PLMB | 102L | Plumbing Systems Lab .....         | 2 |
| PLMB | 105  | Plumbing Blueprint Reading I ..... | 1 |
| PLMB | 106L | Backflow Prevention .....          | 2 |

### Computer Requirement

|    |     |                                     |
|----|-----|-------------------------------------|
| BA | 150 | Introduction to Computer Processing |
|    | or  |                                     |

|      |      |                                                  |   |
|------|------|--------------------------------------------------|---|
| CP   | 176L | Introduction to Technology Computer Applications | 4 |
|      | or   |                                                  |   |
| CSCI | 101  | Computer Literacy                                |   |

### Required Arts & Science Courses

|                                                      |               |                 |              |
|------------------------------------------------------|---------------|-----------------|--------------|
| Communications Elective (oral communications course) |               |                 | 3            |
| ENG                                                  | 101           | College Writing | 3            |
| Humanities/Social and Behavioral Science Elective    |               |                 | 3            |
| MATH                                                 | 120 or higher |                 | 3-4          |
| PHYS                                                 | 102 or higher |                 | 3            |
| <b>Total</b>                                         |               |                 | <b>70-71</b> |

### PLUMBING CONCENTRATION

|      |      |                                           |   |
|------|------|-------------------------------------------|---|
| PLMB | 101  | Basic Plumbing Theory                     | 1 |
| PLMB | 101L | Basic Plumbing Lab                        | 2 |
| PLMB | 102  | Plumbing Systems Theory                   | 1 |
| PLMB | 102L | Plumbing Systems Lab                      | 2 |
| PLMB | 103  | Heating Control Circuitry Theory          | 1 |
| PLMB | 103L | Heating Control Circuitry Lab             | 2 |
| PLMB | 105  | Plumbing Blueprint Reading I              | 1 |
| PLMB | 106L | Backflow Prevention                       | 2 |
| PLMB | 111  | Systems Layout/Maintenance Theory         | 1 |
| PLMB | 111L | Systems Layout Lab                        | 2 |
| PLMB | 112L | Systems Maintenance Lab                   | 2 |
| PLMB | 115  | Plumbing Blueprint Reading II             | 2 |
| PLMB | 116L | Building Maintenance, Heating and Cooling | 1 |
| PLMB | 173L | Orbital Automated Welding Systems         | 3 |
| ACHR | 131  | Refrigeration Fundamentals                | 2 |
| ACHR | 132  | Basic Electricity                         | 2 |
| ACHR | 133  | Refrigerant Management                    | 2 |
| ACHR | 134  | Motors and Controls                       | 2 |
| ACHR | 135  | Refrigeration Applications                | 2 |
| ACHR | 136  | Control Circuit Application               | 2 |
| ACHR | 151  | Air Conditioning                          | 2 |
| ACHR | 152  | Air Conditioning Controls                 | 2 |
| ACHR | 153  | Gas Heating Systems                       | 2 |
| ACHR | 154  | Gas Heating Electrical Systems            | 2 |

### Other Required Trades & Service Occupations Courses

|      |     |                            |   |
|------|-----|----------------------------|---|
| EPT  | 213 | Occupational Safety        | 3 |
| WELD | 170 | Welding Skills Improvement | 3 |

## Computer Requirement

|      |      |                                                            |   |
|------|------|------------------------------------------------------------|---|
| BA   | 150  | Introduction to Computer Processing                        |   |
|      | or   |                                                            |   |
| CP   | 176L | Introduction to Technology Computer Applications . . . . . | 4 |
|      | or   |                                                            |   |
| CSCI | 101  | Computer Literacy                                          |   |

## Required Arts & Sciences Courses

|                                                                |              |
|----------------------------------------------------------------|--------------|
| Communications Elective (oral communications course) . . . . . | 3            |
| ENG 101 College Writing . . . . .                              | 3            |
| Humanities/Social and Behavioral Science Elective . . . . .    | 3            |
| MATH 120 or higher . . . . .                                   | 3-4          |
| PHYS 102 or higher . . . . .                                   | 3            |
| <b>Total . . . . .</b>                                         | <b>68-69</b> |

# METALS TECHNOLOGY

The Metals Technology associate of applied science degree is available with two concentrations: Machine Tool Technology and Welding.

The program prepares individuals for entry-level positions in the metal working industry. The program also provides the opportunity to transfer to a four-year program. Personal safety is stressed.

Courses are from the Machine Tool Technology and Welding certificate programs along with Business Occupations, Technologies and Arts & Sciences.

## MACHINE TOOL TECHNOLOGY CONCENTRATION

|      |      |                                                           | <i>Credit Hours</i> |
|------|------|-----------------------------------------------------------|---------------------|
| MATT | 101  | Metals Math I . . . . .                                   | 2                   |
| MATT | 102  | Metals Blueprint Reading I . . . . .                      | 2                   |
| MATT | 103L | Basic Lathe Principles . . . . .                          | 2                   |
| MATT | 104L | Basic Milling Machine Principles . . . . .                | 2                   |
| MATT | 105L | Basic Supporting Machine Tool Principles . . . . .        | 2                   |
| MATT | 108L | Basic Measurement and Inspection . . . . .                | 2                   |
| MATT | 111  | Metals Math II . . . . .                                  | 2                   |
| MATT | 113  | Metals Blueprint Reading II . . . . .                     | 2                   |
| MATT | 117L | Intermediate Lathe Principles . . . . .                   | 2                   |
| MATT | 120L | Intermediate Milling Machine Principles . . . . .         | 2                   |
| MATT | 121L | Intermediate Supporting Machine Tool Principles . . . . . | 2                   |
| MATT | 122L | Computer Numerical Control I . . . . .                    | 2                   |
| MATT | 202  | Metallurgy . . . . .                                      | 2                   |

|                                                             |      |                                                       |   |
|-------------------------------------------------------------|------|-------------------------------------------------------|---|
| MATT                                                        | 208L | Advanced Lathe Principles . . . . .                   | 2 |
| MATT                                                        | 214  | Machine Tool Technology CADD . . . . .                | 2 |
| MATT                                                        | 216L | Advanced Milling Machine Principles . . . . .         | 2 |
| MATT                                                        | 217L | Advanced Supporting Machine Tool Principles . . . . . | 2 |
| MATT                                                        | 218L | Computer Numerical Control II. . . . .                | 2 |
| WELD                                                        | 170  | Welding Skills . . . . .                              | 3 |
| WELD                                                        | 171  | Advanced Welding Skills . . . . .                     | 3 |
| Business Occupations and/or Technologies Elective . . . . . |      |                                                       | 3 |

### Computer Requirement

|      |      |                                                            |   |
|------|------|------------------------------------------------------------|---|
| BA   | 150  | Introduction to Computer Processing                        |   |
|      | or   |                                                            |   |
| CP   | 176L | Introduction to Technology Computer Applications . . . . . | 4 |
|      | or   |                                                            |   |
| CSCI | 101  | Computer Literacy                                          |   |

### Required Arts & Sciences Courses

|                                                             |                               |              |
|-------------------------------------------------------------|-------------------------------|--------------|
| COMM                                                        | 130 or higher . . . . .       | 3            |
| ENG                                                         | 101 College Writing . . . . . | 3            |
| ENG                                                         | 102 or higher . . . . .       | 3            |
| Humanities/Social and Behavioral Science Elective . . . . . |                               | 3            |
| MATH                                                        | 120 or higher . . . . .       | 3-4          |
| PHYS                                                        | 102 or higher . . . . .       | 3            |
| <b>Total . . . . .</b>                                      |                               | <b>67-68</b> |

### WELDING CONCENTRATION

|      |      |                                                                 |   |
|------|------|-----------------------------------------------------------------|---|
| MATT | 101  | Metals Math I . . . . .                                         | 2 |
| MATT | 102  | Metals Blueprint Reading I . . . . .                            | 2 |
| WELD | 104L | Oxyacetylene Welding and Cutting . . . . .                      | 2 |
| WELD | 105L | Oxyacetylene Brazing/Soldering and Fabrication . . . . .        | 2 |
| WELD | 106L | Introduction to SMAW . . . . .                                  | 2 |
| WELD | 107L | Introduction to SMAW Qualifications<br>and Fabrication. . . . . | 2 |
| MATT | 111  | Metals Blueprint Reading II . . . . .                           | 2 |
| MATT | 113  | Metals Math II. . . . .                                         | 2 |
| WELD | 114L | Advanced SMAW . . . . .                                         | 2 |
| WELD | 115L | Introduction to GMAW and Fabrication. . . . .                   | 2 |
| WELD | 116L | Introduction to GTAW and Fabrication . . . . .                  | 2 |
| WELD | 117L | Qualifications for SMAW and GMAW . . . . .                      | 2 |
| MATT | 202  | Metallurgy . . . . .                                            | 2 |
| WELD | 202  | Advanced Blueprint Reading . . . . .                            | 2 |
| WELD | 205L | Pipe Layout and Welding . . . . .                               | 2 |

|                                                             |                                                   |   |
|-------------------------------------------------------------|---------------------------------------------------|---|
| WELD 206L                                                   | Advanced GMAW and Fabrication . . . . .           | 2 |
| WELD 207L                                                   | Advanced GTAW and Fabrication . . . . .           | 2 |
| WELD 208L                                                   | Qualifications for GTAW . . . . .                 | 2 |
| MATT 173                                                    | Machine Tool Technology Skills . . . . .          | 3 |
| MATT 174                                                    | Advanced Machine Tool Technology Skills . . . . . | 3 |
| Business Occupations and/or Technologies Elective . . . . . |                                                   | 3 |

### Computer Requirement

|          |                                                            |   |
|----------|------------------------------------------------------------|---|
| BA 150   | Introduction to Computer Processing                        |   |
|          | or                                                         |   |
| CP 176L  | Introduction to Technology Computer Applications . . . . . | 4 |
|          | or                                                         |   |
| CSCI 101 | Computer Literacy                                          |   |

### Required Arts & Sciences Courses

|                                                            |              |
|------------------------------------------------------------|--------------|
| COMM 130 or higher . . . . .                               | 3            |
| ENG 101 College Writing . . . . .                          | 3            |
| Humanities/Social or Behavioral Science Elective . . . . . | 3            |
| MATH 120 or higher . . . . .                               | 3-4          |
| PHYS 102 or higher . . . . .                               | 3            |
| <b>Total . . . . .</b>                                     | <b>64-65</b> |

## PLUMBING

The Plumbing certificate program provides safety training, technical knowledge and occupational skills necessary to enter the plumbing industry. Fundamentals of layout, assembly and installation are covered, as well as nomenclature of tools and materials and practice with the tools of the trade. Courses also may be applied toward a degree in Mechanical Technology.

Emphasis is on new construction, 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.

Students must be free of chronic respiratory diseases and allergies to plumbing fluxes, oils, glues and plastic compounds, and must be able to lift 50 pounds.

A suggested schedule per term includes:

Term 1: PLMB 101, 101L, 102, 102L, 103, 103L, 105, 106L, EPT 213

Term 2: PLMB 111, 111L, 112L, 115, 116L, 117L, VICA 176

#### *Credit Hours*

|           |                                 |   |
|-----------|---------------------------------|---|
| PLMB 101  | Basic Plumbing Theory . . . . . | 1 |
| PLMB 101L | Basic Plumbing Lab . . . . .    | 2 |



**PLMB 103 Heating Control Circuitry Theory 1 credit hour**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Troubleshooting of heating control circuitry, control theory, terminology and symbols are covered with emphasis on electrical control devices from various manufacturers.

**PLMB 103L Heating Control Circuitry Lab 1 credit hour**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

The focus is on installation and troubleshooting of heating control circuitry. The correct use of electrical test instruments is stressed, as is safety. (3 lab hours a week = 45 lab hours a term)

**PLMB 105 Plumbing Blueprint Reading I 1 credit hour**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Topics include sketching and reading blueprint working drawings for new construction, maintenance and remodeling.

**PLMB 106L Backflow Prevention 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

Identification, testing and repair of backflow prevention assemblies is the focus. (5 lab hours a week = 75 lab hours a term)

**PLMB 111 Systems Layout/Maintenance Theory 1 credit hour**

*(Prerequisite: PLMB 103L, PLMB 106L or department approval)*

This course covers design, layout and installation of water, soil and vent lines; inspecting and testing systems; maintenance and repair of plumbing, solar systems and yard irrigation; and swimming pool, hot tub and spa installation and service.

**PLMB 111L Systems Layout Lab 2 credit hours**

*(Pre- or corequisite: PLMB 106L, PLMB 111 or department approval)*

The emphasis is on layout and installation of water, soil and vent lines, related fixtures and fittings, inspecting and testing systems and soldering. (5 lab hours a week = 75 lab hours a term)

**PLMB 112L Systems Maintenance Lab 2 credit hours**

*(Pre- or corequisite: PLMB 111, PLMB 111L or department approval)*

This course covers maintenance and repair of plumbing and yard irrigation as well as swimming pool, hot tub and spa installation and service. (5 lab hours a week = 75 lab hours a term)

**PLMB 115 Plumbing Blueprint Reading II 2 credit hours**

*(Prerequisite: PLMB 105 or department approval)*

Content includes drawings, isometric pipe layouts, interpreting blueprints, application of plumbing codes, and planning and coordinating the job.

**PLMB 116L Building Maintenance, Heating and Cooling 1 credit hour**

*(Pre- or corequisite: PLMB 101L, PLMB 103L or department approval)*

This course presents requirements for installation, pre-fabrication and maintenance of heating, sheet metal,

cooling and ventilating systems. (3 lab hours a week = 45 lab hours a term)

**PLMB 170 Mechanical Trades Math 1 credit hour**

Topics include basic arithmetic, whole numbers, fractions and decimals. Volumes, weight measurements and basic algebra as it applies to electricity are also covered.

**PLMB 171 Journeyman Preparation 3 credit hours**

Licensing requirements, rules and regulations and the Uniform Plumbing Code are covered for persons interested in becoming journey level plumbers and natural gas fitters in New Mexico.

**PLMB 173L Orbital Welding Systems 3 credit hours**

*(Pre- or corequisite: PLMB 101 or department approval)* Instruction is in pipe ultra-pure stainless steel welding. Students operate, lay out and analyze welding applications for testing sequences. ( 1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**PLMB 174L Polyvinylidene Fluoride (PVDF) Welding Systems 3 credit hours**

*(Prerequisite: PLMB 173L)* Asahi Butt Fusion System, UF 2000 infra-red fusion and bead and crevice free system are presented. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**PLMB 296 Special Topics 1-6 credit hours**

This flexible course is designed to enable students currently in the plumbing trades to pursue studies in specialized areas. This class also may be taken as an independent or guided study or as a refresher to sharpen skills prior to licensing.

## QUANTITY FOOD PREPARATION

The Quantity Foods Preparation program emphasizes preparation and presentation of flavorful, nutritional meals, and occupational safety/sanitation. Speed and efficiency are stressed in hands-on kitchen/restaurant situations. Students are prepared for entry as food service workers into the rapidly growing food and hospitality industry. Courses also may be applied toward a degree in Culinary Arts.

Classes are held in modern commercial kitchens where students prepare food and operate a cafeteria line including cash registers. Advanced students operate the Student Specialties dinner program, a fine dining restaurant open to the public (advanced reservations required).

Students must be free of chronic allergies. A physician's certificate must be presented to TVI before the start of lab classes stating that the student is free from tuberculosis in a transmissible form.

A suggested schedule per term includes:

Term 1: QUFD 101, 103L, 105L, 107L, 108L, HT 133

Term 2: QUFD 111, 112L, 113L, 114L, 115L, computer course





# TRANSPORTATION TECHNOLOGY

The Transportation Technology associate degree is available to students with two concentrations: Automotive Technology and Diesel Equipment Technology. The program prepares individuals for entry-level positions, including management and supervision, in the transportation industry.

## AUTOMOTIVE TECHNOLOGY CONCENTRATION

|      |      |                                    | <i>Credit Hours</i> |
|------|------|------------------------------------|---------------------|
| AUTC | 121L | Brake Systems .....                | 4                   |
| AUTC | 122L | Suspension and Alignment .....     | 4                   |
| AUTC | 123L | Manual Transmissions .....         | 4                   |
| AUTC | 126L | Automotive Electrical .....        | 4                   |
| AUTC | 131L | Engine Repair .....                | 4                   |
| AUTC | 132L | Automatic Transmission .....       | 4                   |
| AUTC | 133L | Automotive Electronics .....       | 4                   |
| AUTC | 134L | Air Conditioning and Heating ..... | 4                   |
| AUTC | 221L | Engine Performance I .....         | 4                   |
| AUTC | 222L | Engine Performance II .....        | 4                   |
| AUTC | 223L | Engine Performance II .....        | 4                   |

### Additional Required Trades & Service Occupations Courses

|         |          |                          |   |
|---------|----------|--------------------------|---|
| EPT     | 102      | Emergency Response.....  | 3 |
| EPT     | 213      | Occupational Safety..... | 3 |
| Welding | Elective | .....                    | 3 |

### Computer Requirement

|      |      |                                                        |   |
|------|------|--------------------------------------------------------|---|
| BA   | 150  | Introduction to Computer Processing                    |   |
|      |      | or                                                     |   |
| CP   | 176L | Introduction to Technology Computer Applications ..... | 4 |
|      |      | or                                                     |   |
| CSCI | 101  | Computer Literacy                                      |   |

### Required Arts & Sciences Courses

|                    |                                        |                       |              |
|--------------------|----------------------------------------|-----------------------|--------------|
| COMM               | 130 or higher                          | .....                 | 3            |
| ENG                | 101                                    | College Writing ..... | 3            |
| Humanities         | Social and Behavioral Science Elective | .....                 | 3            |
| MATH               | 120 or higher                          | .....                 | 3-4          |
| PHYS               | 102 or higher                          | .....                 | 3            |
| <b>Total</b> ..... |                                        |                       | <b>72-73</b> |

## DIESEL EQUIPMENT TECHNOLOGY CONCENTRATION

|      |      |                                                       |   |
|------|------|-------------------------------------------------------|---|
| DETC | 101  | Diesel Drive Train Theory .....                       | 4 |
| DETC | 103L | Manual Shift Transmissions Lab .....                  | 2 |
| DETC | 104L | Drive Axles, Brakes, Automatic Transmissions Lab..... | 3 |
| DETC | 105L | Hydraulic Systems .....                               | 2 |
| AUTC | 113  | Transportation Electronics.....                       | 3 |
| DETC | 111  | Diesel Engine Theory.....                             | 2 |
| DETC | 111L | Diesel Engine Overhaul .....                          | 3 |
| DETC | 112L | Precision Measurement and Component Repair Lab .....  | 2 |
| DETC | 113L | Engine Tune-up and Testing Lab.....                   | 2 |
| DETC | 201  | Diesel Electrical Theory .....                        | 2 |
| DETC | 201L | Diesel Electrical Lab .....                           | 3 |
| DETC | 202  | Diesel Fuel Injection Theory .....                    | 1 |
| DETC | 202L | Diesel Fuel Injection Lab .....                       | 2 |
| DETC | 203  | Transport Refrigeration/Air Conditioning Theory ..... | 1 |
| DETC | 203L | Transport Refrigeration/Air Conditioning Lab .....    | 2 |

### Additional Required Trades & Service Occupations Courses

|                       |      |                                                |   |
|-----------------------|------|------------------------------------------------|---|
| EPT                   | 102  | Emergency Response.....                        | 3 |
| EPT                   | 213  | Occupational Safety .....                      | 3 |
| MATT                  | 105  | Basic Supporting Machine Tool Theory.....      | 2 |
| MATT                  | 105L | Basic Supporting Machine Tool Principles ..... | 2 |
| Welding Elective..... |      |                                                | 3 |

### Computer Requirement

|      |      |                                                        |   |
|------|------|--------------------------------------------------------|---|
| BA   | 150  | Introduction to Computer Processing                    |   |
|      |      | or                                                     |   |
| CP   | 176L | Introduction to Technology Computer Applications ..... | 4 |
|      |      | or                                                     |   |
| CSCI | 101  | Computer Literacy                                      |   |

### Required Arts & Sciences Courses

|                                                         |               |                       |     |
|---------------------------------------------------------|---------------|-----------------------|-----|
| COMM                                                    | 130 or higher | .....                 | 3   |
| ENG                                                     | 101           | College Writing ..... | 3   |
| MATH                                                    | 120 or higher | .....                 | 3-4 |
| PHYS                                                    | 102 or higher | .....                 | 3   |
| Humanities/Social and Behavioral Science Elective ..... |               |                       | 3   |

**Total .....** **66-67**



cial driver's licensing needs and state and federal regulations governing the professional truck driver are covered. Course fee: \$220

**TRDR 102L Basic Operational Lab 4 credit hours**  
(Pre- or corequisite: TRDR 101, CDL learner's permit or department approval) On the driving range, topics include vehicle inspection, basic control, shifting, backing, coupling and uncoupling, hazard perception, visual search, speed and space management, preventive maintenance and handling cargo. Course fee: \$110

**TRDR 103L Advanced Operational Practices 3 credit hours**  
(Prerequisite: TRDR 101, 102L or passing score on basic operational skills test) Skills needed to cope with hazards of the roadway environment are presented during day and evening hours on mountain grades, urban and rural roads, interstates and docking facilities. Course fee: \$110

**TRDR 171 Material Handling 2 credit hours**  
Basic forklift/hand truck operation and basic material handling are covered, along with forklift safety inspections and cost factors of improper handling. (1 theory + 2.5 lab hours a week = 15 theory + 37.5 lab hours a term)

**TRDR 296 Special Topics 1-6 credit hours**  
This course includes an in-depth study of problems and the advanced techniques that experts in the trucking industry use to solve them.

## WELDING

The Welding certificate program qualifies students for entry-level employment in the metals-processing industry. All courses emphasize safe operations of various welding equipment. Classes meet in well equipped labs where students study, practice and simulate qualifying exercises in oxyacetylene, shielded metal-arc (SMAW), gas metal-arc (GMAW), gas tungsten-arc (GTAW) and pipe welding processes. Instruction is also offered in welding fabrication and materials testing. The program conforms to the American Welding Society EG 2.0-95 training standard for training of entry-level welders. Courses also may be applied to a degree in Metals Technology.

Beginning with the fall of 1998, the Welding certificate program has changed to two terms in length. Some courses previously taken in Terms 1 and 2 are now offered in the Metals Technology associate degree program. Students should adhere to the suggested schedule below to ensure that certificate requirements are completed on time. Students needing information on equivalents for past courses should see the director.

Students must be free of chronic respiratory diseases and have depth perception correctable in both eyes.

A suggested schedule includes:

Term 1: MATT 101, 102, 202; WELD 104L, 106L, 115L, 116L

|                    |      |                                            | <i>Credit Hours</i> |
|--------------------|------|--------------------------------------------|---------------------|
| MATT               | 101  | Metals Math .....                          | 2                   |
| MATT               | 102  | Metals Blueprint.....                      | 2                   |
| MATT               | 202  | Metallurgy.....                            | 2                   |
| WELD               | 104L | Oxyacetylene Welding and Cutting .....     | 2                   |
| WELD               | 106L | Introduction to SMAW .....                 | 2                   |
| WELD               | 115L | Introduction to GMAW and Fabrication.....  | 2                   |
| WELD               | 116L | Introduction to GTAW and Fabrication ..... | 2                   |
| MATT               | 111  | Metals Math .....                          | 2                   |
| MATT               | 113  | Metals Blueprint Reading II .....          | 2                   |
| WELD               | 114L | Advanced SMAW .....                        | 2                   |
| WELD               | 202  | Advanced Blueprint Reading .....           | 2                   |
| WELD               | 205L | Pipe Layout and Welding .....              | 2                   |
| WELD               | 206L | Advanced GMAW and Fabrication.....         | 2                   |
| WELD               | 207L | Advanced GTAW and Fabrication .....        | 2                   |
| <b>Total .....</b> |      |                                            | <b>28</b>           |

### Optional Courses

|      |      |                                                           |   |
|------|------|-----------------------------------------------------------|---|
| WELD | 105L | Oxyacetylene Brazing/Soldering and Fabrication .....      | 3 |
| WELD | 107L | Introduction to SMAW Qualifications and Fabrication ..... | 3 |
| WELD | 117L | Qualifications for SMAW and GMAW .....                    | 3 |
| WELD | 170  | Welding Skills .....                                      | 3 |
| WELD | 171  | Advanced Welding Skills .....                             | 3 |
| WELD | 208L | Qualifications for GTAW .....                             | 3 |

#### **WELD 104L Oxyacetylene Welding and Cutting 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*  
 Safety and use of oxyacetylene equipment are presented. Training is provided in thermal cutting torches, brazing techniques, fusion welding, welding of alloys and general all position welding. (5 lab hours a week = 75 lab hours a term)

#### **WELD 105L Oxyacetylene Brazing/Soldering and Fabrication 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*  
 Instruction in safety, brazing and soldering is presented. Fluxes are applied to various metal and tiller metals. Basic fabrication and repair problems are used for practical applications. (5 lab hours a week = 75 lab hours a term)

#### **WELD 106L Introduction to SMAW 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*  
 Topics in shielded metal-arc welding (SMAW) include safety, beading, build-ups and welding various types of joints. (5 lab hours a week = 75 lab hours a term)

**WELD 107L Introduction to SMAW Qualifications and Fabrication 2 credit hours**

*(Prerequisites: RDG 099 or equivalent, MATH 099 or equivalent or department approval)*

This course provides instruction in safety and proper procedure for arc welding qualifications using basic fabrication and repair problems for practical applications. (5 lab hours a week = 75 lab hours a term)

**WELD 114L Advanced SMAW 2 credit hours**

*(Prerequisites: WELD 106L and 107L or department approval)* Advanced instruction in

SMAW with a strong emphasis on safety is offered. Students practice stringers, weaves and wash passes. (5 lab hours a week = 75 lab hours a term)

**WELD 115L Introduction to GMAW and Fabrication Lab 2 credit hours**

*(Prerequisite: WELD 106L or department approval)* Mig welding safety, spray and short-circuiting transfer are covered. Fabrication and repairs are assigned. (5 lab hours a week = 75 lab hours a term)

**WELD 116L Introduction to GTAW and Fabrication Lab 2 credit hours**

*(Prerequisite: WELD 106L or department approval)* Basic instruction is provided in safety and TIG welding on aluminum and stainless steel. Fabrication and repairs are assigned. (5 lab hours a week = 75 lab hours a term)

**WELD 117L Qualifications for SMAW and GMAW 2 credit hours**

*(Pre- or corequisites: WELD 114L and 115L or department approval)* Simulated qualification procedures are provided for arc and mig welding in all positions. (5 lab hours a week = 75 lab hours a term)

**WELD 170 Welding Skills 3 credit hours**

Safety practices, basic tools and equipment, operating procedures and applications of oxy-acetylene and arc welding are covered. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**WELD 171 Advanced Welding Skills 3 credit hours**

*(Prerequisite: WELD 170 or department approval)* Mig and tig welding, basic math and blueprint reading are included. (1 theory + 5 lab hours a week = 15 theory + 75 lab hours a term)

**WELD 202 Advanced Blueprint Reading 2 credit hours**

*(Prerequisite: MATH 113 or department approval)* Pipe layout and development, structural print reading and design and layout considerations related to fabrication are covered.

**WELD 205L Pipe Layout and Welding 2 credit hours**

*(Prerequisite: WELD 114L or department approval)* Topics include basic pipe welding and layout, materials testing and industrial safety, as well as welding problems for carbon steels. (5 lab hours a week = 75 lab hours a term)



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- Hailey Binford, ESL instructor; M.A.
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- Teresa Hill, English and reading instructor; B.A.
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- Larry Johnson, special education, reading, math, and computer instructor; M.A.
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- Elizabeth C. Martinez, English, math and business occupations instructor; M.A.
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- Marcie Bernal McKenzie, ESL, reading and literacy instructor; M.A.
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## BUSINESS OCCUPATIONS

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Anita Vaughn, administrative assistant instructor; M.P.A.  
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## TECHNOLOGIES

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Andrew Kerr, architectural/engineering drafting technology instructor; B.S.Arch.

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Michael White, electronics engineering technology instructor; M.S.E.E.  
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Kerry Barton, achievement coach; M.A.  
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Paul Beck, machine tool technology instructor; B.S.  
Salvatore Benevegna, air conditioning, heating and refrigeration instructor; B.A.  
Noel Binford, construction management instructor; B.S.  
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Thomas Bryant, diesel equipment technology instructor; B.S.  
Glen Bugge, automotive technology instructor; B.S.  
Darcy Buland, quantity foods instructor; B.S.  
Darrell Creel, truck driving chair; B.A.

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Patrick Dunworth, criminal justice instructor; B.S.  
Paula Fisher, director of employer-based programs; M.A.  
John P. Gabaldon, electrical trades instructor; B.S.  
Scott Henriksen, automotive technology instructor; M.A.  
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Dave Hinchcliffe, carpentry instructor; B.S.  
Joyce Jones, quantity foods instructor; B.S.  
Michael Kavanaugh, fire science instructor; B.S.  
Robert Kho, automotive technology instructor; B.A.  
Barry King, environmental technology instructor; M.S.

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