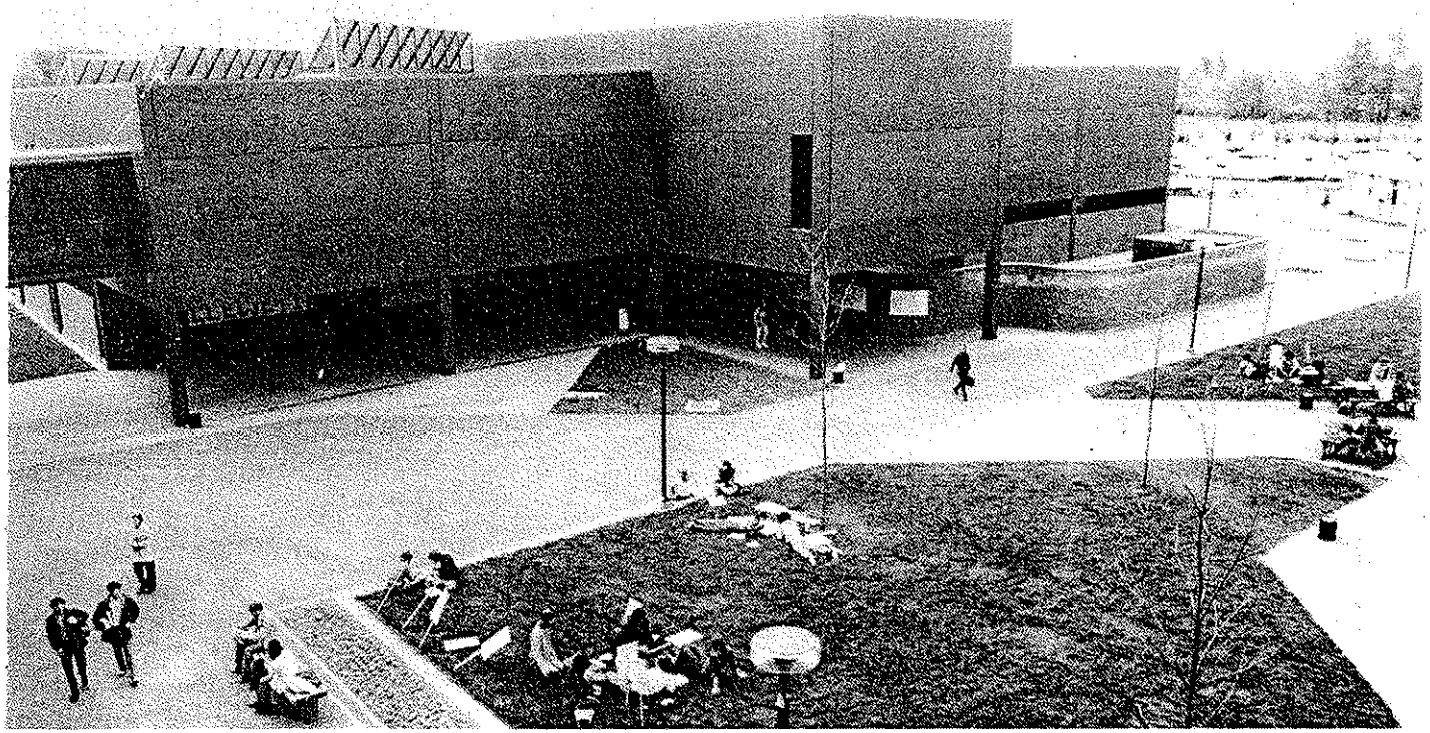
1978-79 CATALOG

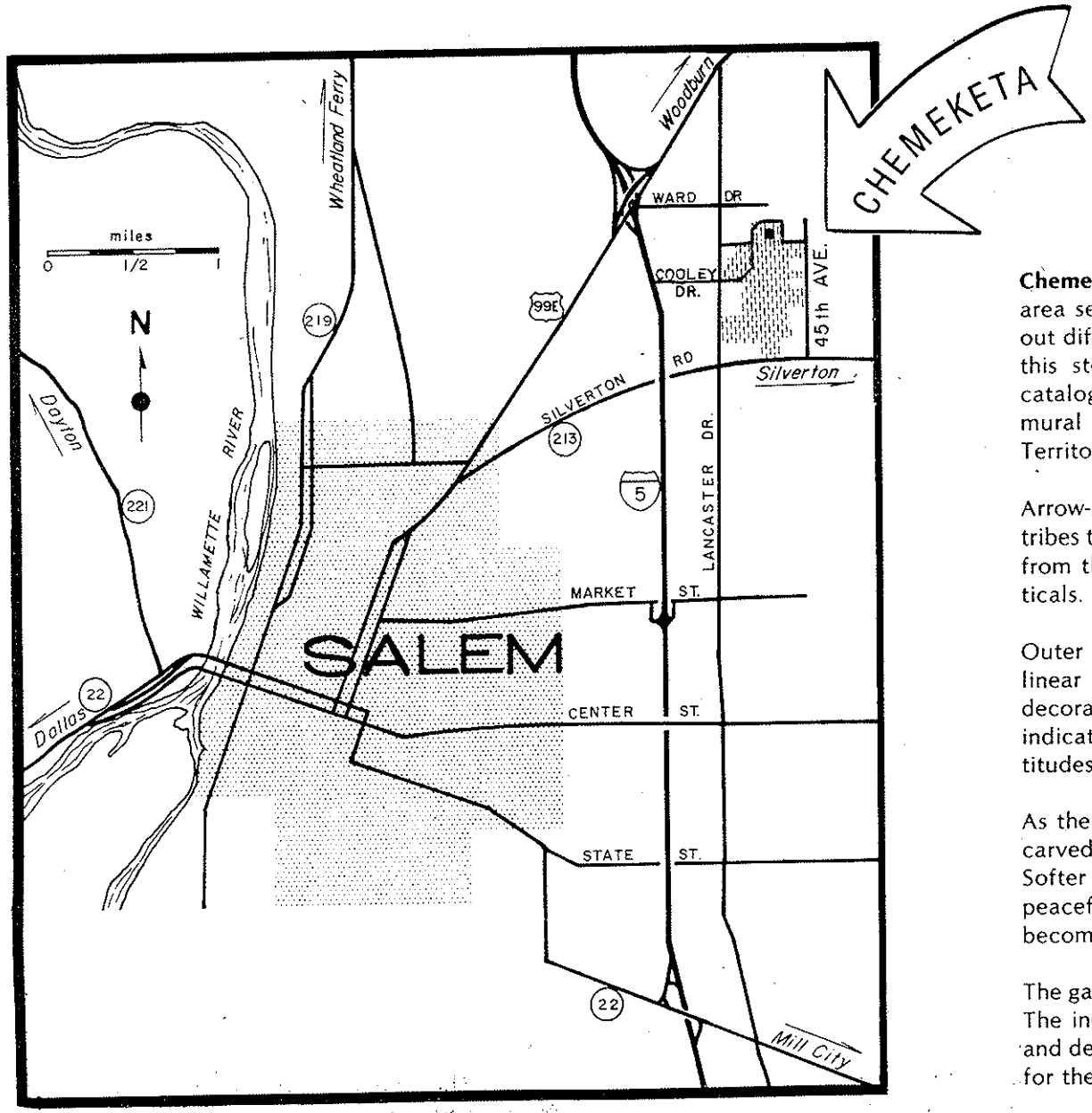
CHEMEKETA COMMUNITY COLLEGE



CHEMEKETA
COMMUNITY
COLLEGE

(4000 Lancaster Dr. N.E.)
P.O. Box 14007
Salem, Oregon 97309

399-5000



SITE OF
CHEMEKETA

4000 Lancaster Drive N.E.
P.O. Box 14007
Salem, Oregon 97309

Chemeketa means "The Place of Peace," and was the area set off for friendly meetings of the tribes to work out difficulties and to find ways to live together. To tell this story, the panel pictured on the cover of your catalog embellishes our first permanent building. The mural has been divided in several sections, indicating Territories.

Arrow-shaped thrusts, symbolizing the movement of the tribes toward the established metting place, push inward from the outside edges. They are divided by these verticals.

Outer areas of these arrows are very complex, bold, linear forms, arrived at from the tools, weapons and decorations used by the Indians in their daily lives, also indicating their natural proud, strongly independent attitudes in their own territory.

As the tribes move through the territorial divisions, the carved designs become less aggressive and less linear. Softer curves start to enter into the forms, showing more peaceful attitudes. The final points of the arrow shapes become completely calm on reaching the center.

The gathering has now been made for the tribal meeting. The individual Chiefs, each with his own form of dress and decoration and behavior, sit down in a formal circle for the peaceful work of conference.

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This catalog is published for information to the general public. Every effort is made to insure accuracy at the time of printing. However, the statements contained here are not to be regarded as an irrevocable contract between a student and the college. The college must, as in the past, reserve the right to make any necessary changes in matters discussed herein, including procedures, policies, calendar, curriculum course content or emphasis and costs.

Academic Calendar
1978-79

SUMMER SCHOOL 1978

Registration	June 19 (Mon.)
Classes in regular session	June 20 (Tues.)
Last day to register without penalty	June 21 (Wed.)
Last day to register for summer term	June 23 (Fri.)
Last day to make class or program changes	June 23 (Fri.)
Fourth of July holiday	July 4 (Tues.)
Last day to withdraw from classes without responsibility for grades (8 week classes)	Aug. 4 (Fri.)
End of 8 week classes	Aug. 11 (Fri.)
Last day to withdraw from classes without responsibility for grades (10 week classes)	Aug. 18 (Fri.)
End of 10 week classes	Aug. 25 (Fri.)

FALL TERM

Registration	Sept. 18-22 (Mon.-Fri.)
Classes in regular session	Sept. 25 (Mon.)
Last day to register without penalty	Sept. 26 (Tues.)
Last day to register for fall term	Sept. 29 (Fri.)
Last day to make class or program changes	Sept. 29 (Fri.)
Veterans' Day holiday	Nov. 10 (Fri.)
Thanksgiving holiday	Nov. 23-24 (Thurs.-Fri.)
Last day to withdraw from classes without responsibility for grades	Dec. 8 (Fri.)
Review and examination	Dec. 11-15 (Mon.-Fri.)
End of fall term	Dec. 15 (Fri.)

WINTER TERM 1978-79

Registration	Jan. 3 (Wed.)
Classes in regular session	Jan. 4 (Thurs.)
Last day to register without penalty	Jan. 5 (Fri.)
Last day to register for winter term	Jan. 9 (Tues.)
Last day to make class or program changes	Jan. 9 (Tues.)
Last day to withdraw from classes without responsibility for grades	Mar. 9 (Fri.)
Review and examination	Mar. 12-16 (Mon.-Fri.)
End of winter term	Mar. 16 (Fri.)

SPRING TERM 1978-79

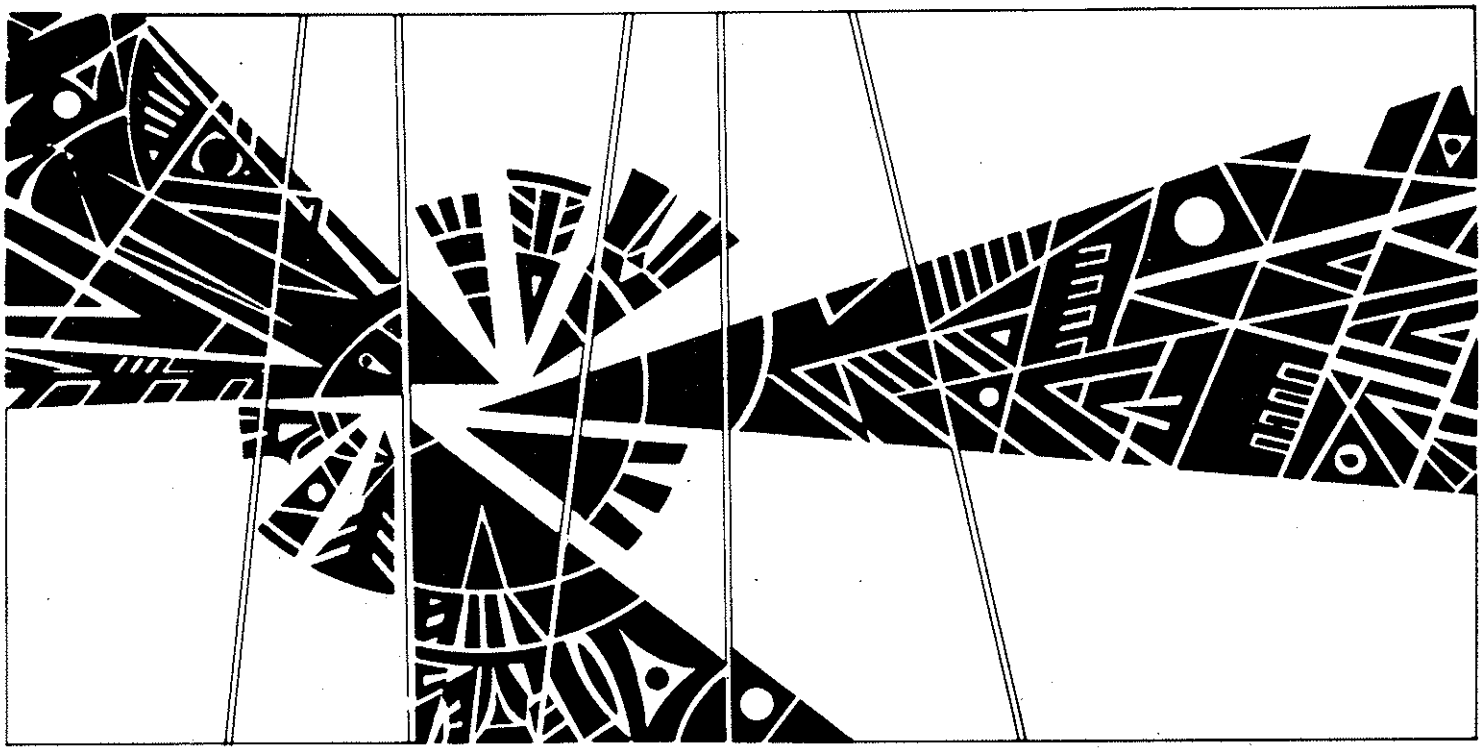
Registration	Mar. 26 (Mon.)
Classes in regular session	Mar. 27 (Tues.)
Last day to register without penalty	Mar. 28 (Wed.)
Last day to register for spring term	Mar. 30 (Fri.)
Last day to make class or program changes	Mar. 30 (Fri.)
Memorial Day holiday	May 28 (Mon.)
Last day to withdraw from classes without responsibility for grades	June 1 (Fri.)
Review and examination	June 4-8 (Mon.-Fri.)
End of spring term	June 8 (Fri.)

SUMMER TERM 1979

Registration	June 18 (Mon.)
Classes in regular session	June 19 (Tues.)
End of 8 week classes	Aug. 10 (Fri.)
End of 10 week classes	Aug 24 (Fri.)

FALL TERM 1979-80

Registration	Sept. 17-21 (Mon.-Fri.)
Classes in regular session	Sept. 24 (Mon.)
End of fall term	Dec. 14 (Fri.)



GENERAL INFORMATION

CHEMEKETA COMMUNITY COLLEGE

GENERAL INFORMATION

PHILOSOPHY

Chemeketa Community College is dedicated to the philosophy that the greatest well-being accrues to the individual, the community and the society only when each individual is accorded the opportunity to define and pursue legitimate interests and discover and develop abilities to the maximum of individual potential.

Chemeketa Community College is dedicated to providing educational opportunities at a minimum of cost to the student—with the conviction that the fullest possible development of each individual's abilities is essential to the welfare of the community, the state and the nation. Chemeketa is an open door college, offering post high school educational opportunities up to two years to all people of the district.

This dedication commits the college to offer diversified programs to develop and accommodate the unique potential and needs of its students—widening the horizon beyond the curriculum in all aspects of career and personal life. It commits the college to offer its resources to the entire district and likewise, to enhance and exploit the resources of the area it serves. And, it commits the college to continuously evaluate the relevancy, standards and the quality of its programs; the effectiveness of its instruction and the quality of all services to the students and the district service area. These commitments demonstrate that the college responds flexibly to the demands of society while fully recognizing the worth of each individual.

Implementation of the Philosophy

In view of this nature, role and philosophy of the comprehensive community college, Chemeketa designs its educational program to meet four objectives—singly or in a combination:

- Vocational-technical education for those who desire to qualify for the specialized demands of a highly diversified and technological society. The one- and two-year programs serve the student by preparing him/her for employment. They serve the community by providing business and industry with competent, trained workers who have learned basic skills in specialized fields. Upon successful completion of these programs, the student is awarded an associate degree or certificate of completion.
- Lower division transfer for students who plan to transfer to a four-year institution. These courses may be taken as separate work or incorporated in a technical-vocational course of study. The courses parallel those of the lower division of Oregon's colleges and universities.
- Adult education opportunities for continuing education and individual enrichment for those who wish to improve technical or vocational skills, retrain for a new position or simply for avocational purposes. These courses are open to all residents of the district in approximately 25 communities. The adult education program includes basic education for those who have had their formal education interrupted.
- General education emphasis throughout all programs in the college developing students' power of analysis and synthesis, offering opportunities for the nurture and development of the mind—the mind free to create and innovate—to move from mental adolescence to intellectual maturity. The college offers all students and requires of all graduates a pattern of courses designed to produce an awareness of self and provide basic competence in spoken and written English, mathematics, American history, government and economic systems, regard for physical and mental health and in-depth knowledge of one subject area. This approach offers quality within diversity—a major purpose of the comprehensive community college.

ACCREDITATION

Chemeketa received full accreditation by the Northwest Association of Secondary and Higher Schools in December of 1972.

In addition, all of Chemeketa's technical programs are accredited by the State Board of Education. Those programs requiring accreditation by professional associations have achieved the needed accreditation. Chemeketa technical-vocational and transfer instructors as well as transfer courses are approved by the Oregon State Board of Education.

STUDENTS

Chemeketa Community College strives to take a personal and individual approach to student learning. There is no typical Chemeketa student. Students include just-graduated high school seniors, experienced workers wanting to advance, homemakers preparing for re-entry into the labor force, young workers seeking new skills of new direction in their careers and older persons studying to enrich their lives.

The college serves a population of over 266,000 distributed over 2,600 square miles. It enrolled approximately 29,000 persons in 1977-78. The variety of students provides a valuable social interaction not available at other institutions.

STAFF

There are more than 800 full- and part-time

highly-qualified and carefully-selected staff members serving Chemeketa students.

THE LEARNING CENTER

The learning center, located in building 3, houses the library, audiovisual services and the planetarium/multimedia theater as well as the Center for Student Development and counseling, career planning, deaf/blind, bilingual, English as a second language and adult basic education programs.

The library contains approximately 45,000 books and over 1360 periodicals. The audiovisual department houses the non-print collection and a wide variety of media resources including a television facility for production of instructional videotapes. The planetarium/multimedia theater serves as a special classroom; programs for the public are also presented here.

The Center for Student Development, located on the first floor, serves as a diagnostic center where students can receive personal attention for specific concerns. The center is designed to serve the educational needs of Chemeketa's students without additional fees.

Students with hearing or sight deficiencies may acquire help from readers, interpreters, note takers and tutors through the deaf/blind programs office. There is no charge for this service.

Students may receive help in language from either the bilingual program office or the Engligh as a second language program.

A child care center provides short-term care for children of Chemeketa students.

PROGRAMS

Chemeketa offers one- and two-year technical-vocational programs plus concentrated short courses, transfer courses and adult education evening programs.

Technical and Vocational Education

Thirty-eight occupational programs are offered; within some of these the student may choose from several curriculum options. The one-year programs lead to a certificate of completion; two-year programs lead to an associate degree.

Transfer Courses

The lower division offerings are transferable to Oregon four-year colleges and universities. The lower division transfer courses lead to an associate degree.

High School Completion

Chemeketa Community College offers two high school diploma programs. The regular high school completion program allows the student, in cooperation with a high school counselor, to enroll in night classes offered by Chemeketa, but the credit is applied by the student's resident high school. Students wishing to inquire about this program must contact their high school counselor.

The second program is the adult high school diploma program. This allows the student to enroll at Chemeketa as a high school completion student. Students who are interested in this program should contact their high school conselor, to discuss whether or not this is a possible option, and then secure a high school release form from the high school and have the high school send a transcript to Chemeketa. Once the student has secured a release form and a transcript has been sent to the college, the student should make an appointment with one of the college counselors to have an evaluation of the transcript so that the student may know which classes are needed in order to complete the high school diploma under the regulations established by Chemeketa.

Adult Education

Adult education classes are offered in all areas of the college district. Opportunity is provided for students to continue their education on a pre-high school, high school or post-high school level or to receive specialized training to enrich their cultural lives or improve their personal efficiency.

Programs and courses are developed whenever a special need is defined and a minimum of 12 students can be enrolled.

Senior citizens 62 or older may obtain Golden Age cards and be eligible to enroll in most adult education courses free of charge.

FINANCIAL SUPPORT

Financial support for Chemeketa, a public institution, is derived from local taxes, state and federal support and tuition.

AFFIRMATIVE ACTION POLICY

It is the policy of Chemeketa Community College that discrimination on the grounds of race, color, sex, marital status, national origin, age or handicap will not exist in any area, activity or operation of the college.

ADMISSIONS AND ACADEMIC INFORMATION

ADMISSIONS POLICY

Chemeketa Community College subscribes to the "open door" admission policy. In general, its programs are open to any person 16 year of age or older who can benefit from the instruction offered.

One inescapable limitation to the "open door" policy is the limit that may be imposed by lack of staff or space.

The general admissions policy does not assure admittance to a particular program. Several programs (see below) have minimum admissions criteria which must be met.

ADMISSIONS PROCEDURES

Early application for admission is encouraged. Persons planning to enroll need to complete an application form and submit it to the admissions office.

If the program indicated on the application form requires additional information or has special requirements which must be met prior to registration, a packet of materials will be sent to the applicant. The packet includes admissions criteria for the chosen academic major. Each applicant is responsible for making whatever arrangements are necessary to assure that required materials (i.e., application forms, transcripts, test scores, recommendations) are on file with the admissions office.

Students should meet with a counselor, academic advisor or curriculum personnel prior to registration to determine prerequisites and curricula and discuss adacemic as well as vocational plans.

The following programs are restricted or limited programs and require additional information or have special requirements:

Automotive Technology
Chemical Technology
Dental Assisting
Fire Protection
Human Resource Technology
Machine Shop
Medical Assisting
Nursing
RN, LPN, Refresher Courses
Visual Communication
Welding
Welding & Fabrication

Applicants not accepted into one of the special programs may still be admitted as a regular student and may apply for another major by notifying the admissions office.

After all admission requirements are fulfilled, applicants are notified by mail concerning orientation and registration. All new students will register on a designated day and time.

PART-TIME STUDENTS

Part-time students may attend the college during the day or evening for credit or non-credit courses. Those students taking credit-bearing classes to apply to a degree should follow regular admissions procedures. Those taking non-credit and evening classes should follow resistration procedures as outlined for adult community education, see page 15.

INTERNATIONAL STUDENTS

Any prospective student who is a citizen of another country should first contact the admissions office for special application materials. Federal immigration and college regulations make it necessary for an international student to meet specific requirements prior to entry. Each of these special students must display a proficiency in English and provide a financial support statement. A member of the counseling staff is available to help these students become a part of the college.

RESIDENCE REQUIREMENTS

An in-district student is one who meets at least one of the four following conditions:

1. Married and a resident of the college district at least three months prior to first registration.
2. Age 18 or over and a resident of the college district at least three months prior to first registration.
3. A veteran who has established a permanent address inside the college district within three months of separation or discharge from the service.
4. A minor whose parents or legal guardians are bona fide residents of the college district.

Those who do not meet in-district criteria and whose home or permanent address is in Oregon but outside the Chemeketa Community College district are out-of-district students.

Any student whose permanent address is outside Oregon is classed as an out-of-state student.

TRANSFER CREDITS FROM OTHER COLLEGES

The student is responsible for initiating transfer of credits to Chemeketa through the admissions office.

The transfer credits accepted from other collegiate institutions become a part of the student's permanent record at Chemeketa. Grades earned are not indicated. Only course grades earned at Chemeketa are used in computing grade point averages.

READMISSION

Students who have discontinued attendance may apply for readmission by completing a new application. Students who have attended another college or university during the interim should submit an official transcript from that school to the admissions office.

COUNSELING SERVICES

Counselors are available in building 23 and building 3 from 8 a.m. to 4:30 p.m. Monday through Thursday.

Services offered include educational and vocational counseling, admissions information, veteran's information, test administration and interpretation and personal counseling.

Students and non-students alike are encouraged to visit the career information center which is operated by the counseling department in building 3. The main feature of the center is a computer terminal which provides current information about hundreds of careers including job descriptions, pay ranges, job requirements and the hiring outlook for specific areas throughout the state. Additional career decision making options include a career planning class for college credit and career exploration workshops.

ACADEMIC ADVISING

During the day registration process, each incoming student is assigned an academic advisor from the Chemeketa professional staff. That person is available to help the student plan his/her program of study and to carry it out.

Those students who attend classes in the evening only should visit the counseling center periodically for academic advising.

STUDENT-INSTRUCTOR CONFERENCES

Instructors maintain scheduled office hours to confer with students concerning class assignments and methods of study for particular courses. Schedules of hours are posted in each faculty office area or on the office door. Faculty office directories are posted on main bulletin boards.

VETERANS SERVICES

Interested persons who are eligible for veterans' benefits should contact the college Veterans' Services Offices for information on V.A. approved programs of instruction, before making application for benefits. Staff are available to help veterans and their dependents in applying for veterans' educational benefits, and will follow up on their applications when necessary.

Upon receipt of the veterans' application with required supporting documents, the Chemeketa Community College veterans' clerk, located in the registrar's office, will certify enrollment and forward the complete application package to the Veterans Administration regional office in Portland. Usually this will complete the application process for educational allowance. It should be noted that this application is separate from application for admission to the college.

STUDENT FINANCIAL AIDS

Information concerning educational scholarships, grants, loans and part-time employment at the college is available at the financial aid office. The college's financial aid program provides assistance and advice to students who would be unable to pursue their education at Chemeketa without such help.

The financial aid staff will forward upon request a financial aid application and a pamphlet which describes the financial aid opportunities at the college.

REGISTRATION AND ACADEMIC RECORDS

CLASS REGISTRATION

Registration in particular classes and programs follows admission to the college. An interview with a counselor is recommended. Ideally, the pre-registration interview follows testing and precedes class registration.

FULL-TIME STUDENTS

Students in full-time academic status are those who carry 12 or more credit hours per term.

TUITION AND FEES

Tuition and instructional fees must be paid in full at the time of registration unless other arrangements have been made. Special arrangements for payment of tuition may be made at the business office.

Persons enrolling for 10 or more credit hours are considered full-time students for tuition purposes.

Tuition rates:

Full-time in-district students living within a radius of 14 miles ..... $130 per term

Full-time in-district students living within a radius of 14 to 24 miles ..... $120 per term

Full-time in-district students living beyond 24 miles ..... $110 per term

Part-time in-district students ..... $13 per credit hour

Full-time out-of-district students ..... $195 per term

Part-time out-of-district students ..... $19.50 per credit hour

Full-time out-of-state students ..... $485 per term

Part-time out-of-state students ..... $48.50 per credit hour

The college board reserves the right to change tuition rates without prior notice. Courses requiring specialized materials may have additional charges as part of tuition for

the course.

Evening courses may require separate registration and tuition.

Students will not be allowed to register until all financial obligations from prior terms are satisfied.

Late Registration Fee

A fee of $5 will be charged for the first day of late registration, with $1 per school day for each additional late day; the total late registration fee will not exceed $10, however.

Registration is closed after the day indicated in the academic calendar. This does not apply to part-time evening classes.

Other Fees

Locker fee—optional $2.50

Laboratory fees for certain courses (vary by course)

Books and Supplies

Books and supplies may be purchased at the college store. The cost of these varies depending upon the program. Normally, they amount to $150 to $300 per year.

CLASS LOADS

Regular vocational-technical students are limited to the credit hours of a normal load for that term in their particular curriculum. Lower division transfer students are limited to 22 credit hours per term. Any additional credit hours in either area will require special permission through the registrar's office.

Students authorized to enroll for more than 22 credit hours will be assessed additional fees at the designated rate per credit hour.

CURRICULUM DEVIATIONS

A student may be allowed to deviate from the prescribed curriculum and still meet graduation requirements under certain circumstances.

Petitions for substitution of a course differing from the listed required course may be initiated at the registrar's office. It is advisable that the substitution be discussed with the student's department chairman or academic advisor before being submitted.

Substitution is allowed upon approval of the department chairman if a student can show that such a substitution will benefit him without detracting from the quality of his preparation.

CLASS CHANGES

Changes may be made in a student's class schedule during the program adjustment period (see the academic calendar). These changes should be approved by the academic advisor. Student schedule change forms are available at the registrar's office, staff offices and the counseling center.

INCOMPLETES

When a student has been in regular attendance in a class, but in the judgment of the instructor has failed to complete a minor portion of the required class work, an incomplete may be given. In order to remove an incomplete, the required class work must be made up within the three terms following the term in which the student received the incomplete. The grade will be recorded in the registrar's office. If the course work is not made up within the three terms, the course must then be repeated in its entirety for the incomplete to be removed. It is the student's responsibility to clear his record of incompletes in subjects required for graduation.

REPEATING A COURSE

A student may repeat a course in which he earned a "D", "F", "W", or "I" grade. A higher grade on the repeat attempt will be substituted in computing the student's GPA. Before repeating the course, the student should confer with his academic advisor.

SATISFACTORY PROGRESS

Students are expected to maintain a 2.00 grade point average each term to remain in good standing.

WITHDRAWAL FROM COLLEGE

Students seeking to withdraw from college must complete the withdrawal procedures. Failure to do so may result in a failing grade and forfeiture of a pro-rated refund. See the academic calendar for the withdrawal period.

Tuition will be refunded in full if the college cancels the course. No refund will be granted when a student is suspended from the college.

Students who have no obligation to the business office, library, or other departments of the college at the time of withdrawal are entitled to a tuition refund based upon the following schedule:

During the first week of each term 90%

During the second week of each term 70%

During the third week of each term 50%

During the fourth week of each term 40%

Claims for refunds must be submitted on a withdrawal form at the time of withdrawal.

Refunds are calculated from the date of application, not from the date the students ceased to attend classes. Amounts determined as refundable are applied as a credit against any financial obligation the student may have at the college. The refundable amount in excess of all obligations is paid by check to the student. Withdrawal forms are available at the registrar's office, staff offices or counseling center.

CREDIT BY EXAMINATION (Course Challenge Testing)

A student may receive college credit for some courses by examination. The purpose of the credit by exam program is to provide an alternative means for students to demonstrate college level competency, no matter where or how this knowledge was acquired. Challenge examinations are prepared by the department of the college directly responsible for instruction of the course. The examination will be comprehensive in nature, covering all the basic information and skills required of a student completing the course in a regular manner. The examination will be written, and in some cases, a performance examination will be required. Students wishing to challenge classes or wanting additional information should contact the counseling center.

GRADE SYSTEM

Final grades are issued at the end of each quarter. Letter grades are assigned points according to the following system:

A	Excellent	4
B	Good	3
C	Average	2
D	Below Average	1
F	Failed	0
W	Withdrawal	0
I	Incomplete	0
X	Audit	0

The grade point average is computed by dividing the total quarter hours (excluding W, I and X) into the total points earned.

AUDIT

Auditors are students who enroll in credit classes who do not wish to receive a grade or credit for the course. Students wishing to audit a class may do so by contacting the registrar's office prior to the end of the third week of the term.

TRANSCRIPTS

Upon graduation a student will be entitled to five free transcripts. Official transcripts of grades may be requested through the registrar's office for a fee of $1 each.

STUDENT RECORDS

Permanent student records, grade reports and requests for transcripts are processed and maintained by the registrar's office.

TRANSFER TO OTHER INSTITUTIONS

Counselors and academic advisors are available to assist each student who contemplates transfer to a four-year college or university. Because of the specialized nature of technical programs, a number of the career courses are not designed for transfer to four-year institutions. Specific transfer information can be obtained from the student's academic advisor at Chemeketa.

Lower division college transfer students should consult the catalog of the college or university to which applications for admission will be made and become familiar with the specific lower division requirements in his/her major field. Before matriculating to the four-year institution, students are encouraged to seek advice in course selection directly from advisors at the four-year institution.

DEGREES AND CERTIFICATES

Chemeketa Community College grants Associate in Science and Associate in Arts degrees. The Associate in Arts degree is a nationally recognized degree conferred upon those who complete the general requirements of the lower division transfer program. The Associate in Science degree is a nationally-recognized degree conferred by many colleges upon students who complete an occupationally-oriented curriculum. The Certificate of Completion is awarded those students who complete the requirements of one-year programs.

Associate in Science Degree

General requirements for the Associate in Science degree are:

1. A minimum of 90 credits (see particular curriculum).
2. A cumulative grade point average of 2.00 or above in all work to be applied to the degree.
3. Completion of the required courses as listed in the specific curriculum. Eighteen credit hours of approved general education subjects must be included.
4. Completion of a minimum of 30 credit hours of regular offerings at the college.

Associate in Arts Degree

The minimum requirements for the Associate in Arts degrees in transfer programs recommended by the higher education committee for community colleges are employed

by Chemeketa. These requirements are:

1. A minimum of 93 credit hours.
2. A cumulative grade point average of 2.00 or above in all work to be applied to the degree.
3. Six credit hours of English composition.
4. One term in personal health.
5. Five terms of physical education (partial or total waiver is available under certain circumstances).
6. One sequence in humanities (English composition sequence does not meet this requirement).
7. One sequence in math or science.
8. One sequence in social science.
9. One additional sequence in humanities, math, science or social science.
10. Completion of a minimum of 30 credit hours at Chemeketa.
11. Up to 12 credit hours earned in one or more of the career programs may be applied toward the degree. (Students should be aware that these credit hours may not transfer to a four-year school.)

Certificate of Completion

General requirements for the Certificate of Completion are:

1. Satisfactory completion of all required coures in the program.
2. A cumulative grade point average of 2.00 or above for all course work to be applied to the certificate.

APPLICATION FOR GRADUATION

Candidates apply for degrees and certificates through the registrar's office. Students who plan to graduate at the end of the spring term must make application by the fourth week of the winter term.

Students completing requirements at the end of summer, fall or winter terms must file an application by the end of the fourth week of the term preceding the term in which graduation requirements will be completed. For students completing their work in the summer, fall or winter terms, degrees and certificates will be official three weeks from the date that requirements have been met. These students may receive certificates for completion of one-year program requirements or degrees for completion of two-year requirements at the June graduation or have their certificates or diplomas mailed to them after commencement.

WORK RELATED EXPERIENCE

Cooperative Work Experience/Cooperative Education

Cooperative Work Experience is a personalized program which helps students combine what they learn in the classroom with jobs related to their occupational objectives.

CWE coordinators are available to help the student find a job. The employer, who must be approved by the college, will be encouraged to work with the student on a training plan which ties into classroom studies. These job experiences may be either paid or non-paid.

CWE can help the student establish a work reference for use in future employment, and it gives a first-hand look at the student's chosen job field. The number of hours spent on the job determines the amount of credit received.

Job Placement

Chemeketa provides a job placement service for both current students and alumni.

Job opportunities are posted in the work related experience office, and the student may begin the job search here. The office coordinates on-campus interviews by employers and offers the free service of helping students prepare job resumes and understand the application process.

Students seeking part-time jobs while in school and students who will graduate soon should check with the work related experience office for assistance.

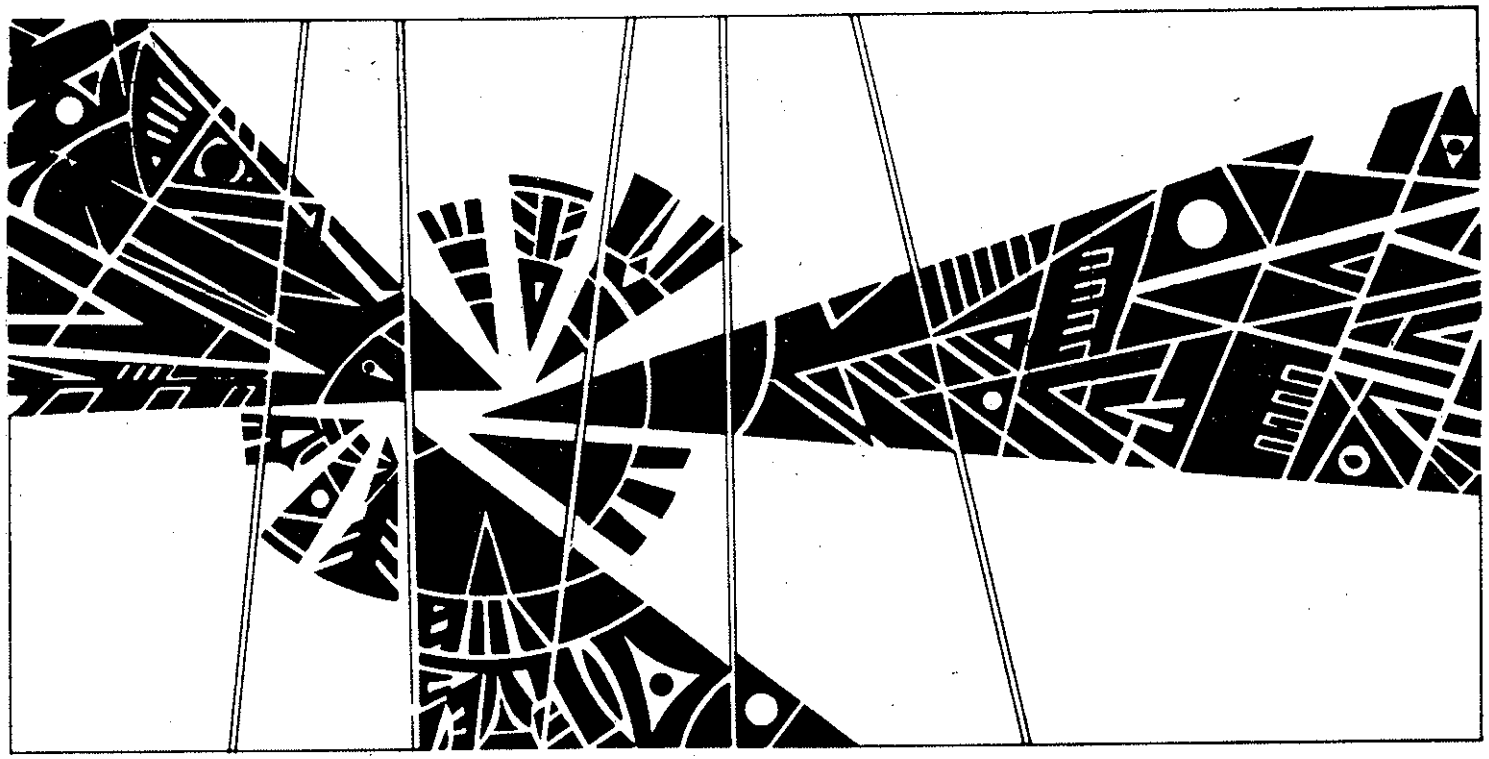
College Work-Study

This federally-funded program is designed for full-time students who need financial help to continue their education. It is designed to help students find part-time employment. The student first applies through the financial aid office where financial need is determined according to federal guidelines. A student on work-study is permitted to work an average of 20 hours a week while classes are in session and up to 40 hours a week during vacation periods if authorized. A variety of job opportunities exists on and off the campus.

APPRENTICESHIP

Apprenticeship training is a method of vocational education administered by the Oregon Bureau of Labor. Combining full-time, on-the-job work experience with trade-related theoretical instruction at school.

The trade-related instruction at Chemeketa is designed for persons working at a particular trade who need to improve their knowledge of trade theory. Classes generally consist of apprentices registered with Oregon Bureau of Labor, journeyman tradesmen who wish to upgrade their skills and knowledge, pre-apprenticeship students and others as approved by the local committees.



STUDENT LIFE

CHEMEKETA COMMUNITY COLLEGE

STUDENT LIFE

At Chemeketa Community College the educational, recreational and social needs of the student are met in a well integrated program of student activities.

The college administration and staff believes that participation in co-curricular activities contributes to the total development of the individual. A well-balanced program of activities has been developed in response to student interest and needs.

A large measure of responsibility for campus activities is in the hands of the students, under the guidance of the student activities office and with the assistance of the faculty. The students establish and administer most co-curricular activities. They determine campus social programs and participate in the maintenance of discipline essential to an academic community. Activities may vary from quarter to quarter depending upon student interest.

Every student is encouraged to participate in these programs. Students may secure further information from officers of each organization or from the director of student activities in building 1.

STUDENT GOVERNMENT

The Associated Students of Chemeketa Community College (ASCCC) welcomes all Chemeketa students to membership in their own official organization. Aware that student activities are an integral part of a total education, the ASCCC encourages all of its members to participate as fully as possible.

The executive council of the ASCCC has its office in building 1. The ASCCC officers have various areas of specialization but all regard fellow students and their ideas to be significant.

The president works closely with the student senate and is the student representative to the college board of education.

The vice-president is chairman of the student senate and oversees the activities of committees and campus clubs and organizations.

The activities coordinator helps plan and implement ASCCC-sponsored activities and works closely with the vice-president on activities of campus clubs and organizations.

The publicity coordinator works with the activities coordinator in promoting and publicizing ASCCC-sponsored activities.

The secretary maintains all student records for the executive council and the student senate.

The business manager is responsible for maintaining, collecting and disbursing records of all financial transactions concerning the ASCCC.

The student senate, composed of twenty-four elected repersentatives from the various curriculums, meets weekly. The meetings are open and all students are encouraged to attend.

STUDENT ACTIVITIES

ASCCC sponsors films, dances, concerts, excursions, lectures and a variety of cultural activities that are entertaining, educational and recreational. This service is planned to appeal to all age and interest groups, campus- and community-wide. A campus calendar, provided by the ASCCC, is printed each term and includes all scheduled activities.

STUDENT CLUBS AND ORGANIZATIONS

The following clubs have been chartered by the ASCCC and are active on the Chemeketa campus:

Adult Learning Center Club - Service, fellowship and co-curricular interests are the main goals of this group. Graduation exercises for the ABE program are provided by the club.

American Society of Certified Engineering Technicians (ASCET) - An organization open to persons seeking careers in engineering technology. Students belonging to ASCET at Chemeketa may continue to affiliate with the national organization after graduation.

American Welding Society, Student Chapter - A group with the purpose of increasing the student awareness of the welding industry and to enhance student learning. This is accomplished through exposure to the results of welding research and the development of welding processes.

Automotive Club - This club's objective is to bring together people with a genuine interest in the automotive field, and to put that interest to use in the form of projects approved by the majority.

Bowling Club - Promotes and fosters the game of American tenpins. Its membership is open to all students, staff members and their spouses.

Chemeketa Charismatic Fellowship - Meets twice weekly for prayer and fellowship.

Chemeketa Indian Club - The purpose of this club is to bring together interested students to deal with problems peculiar to American Indian students and to organize social activities which reflect and enhance Indian culture.

Chess Club - Promotes and fosters the game of chess. It also participates in chess tournaments. Membership is open to all students, staff members and their spouses.

Christian Fellowship Association - Chemeketa's non-denominational Christian Fellowship meets each week and features guest speakers and music.

Computer Club - To promote social activities for students in computer programs.

Drama Club - A group of Chemeketa

students and staff who participate in dramatic activities. Most of these activities are short plays.

Early Childhood Education Club - A service and social organization. It publicizes the early childhood program through public service and provides social activities for its members.

Fire Protection Club - A service and social organization. It publicizes the fire protection program through public service and provides social activities for its members.

Foosball Club - Open to students and staff who are interested in learning and playing the game of foosball. It promotes tournaments and other worthwhile activities.

Forestry Club - Organized to promote, publicize and create public awareness of the forest technology program and the industry. It serves to represent and promote the needs of our foresty technology students.

Fotographics Club - Open to all students of Chemeketa who demonstrate an interest in the visual communications industry.

Gourmet Club - Organized to promote gourmet cooking, provide public service, individual and group improvement and bring together food service students and alumni.

Human Resources Technology Club - Advocates the recognition, acceptance and utilization of para-professionals for the human service field, both public and private.

Juntos Club - All students of Spanish-American descent and anyone interested in the Chicano culture are encouraged to join this club.

Karate Club - Organized to promote the sport of karate and provide social activities for its members.

Latter Day Saints Organization - Organized for the fellowship of members of the Church of Jesus Christ of Latter Day Saints but is open to all.

Medical Assistant's Club - Organized to promote the medical assistant program, to provide public service, employment opportunities and promote individual and group improvements.

Micronesian Club - Organized to provide social activity for students interested in the Micronesian culture.

Minorities Club - Open to all students who are interested in the needs and interests of minority peoples.

Phi Beta Lambda - A national service organization for students in post-secondary schools, colleges or universities who are preparing for careers in business or business education..

Pool Club - For students and staff interested in learning and playing pocket billiards and promoting worthwhile competition.

Ski Club - To promote interest and involvement in snow skiing. Open to all students, the club frequently organizes weekend ski trips.

Skin Diving Club - To promote interest and involvement in skin diving and scuba diving.

Student Nurses of Oregon (SNO) - The Salem chapter of the national Student Nurses of Oregon was chartered in 1969. Membership is open to students enrolled in the associate degree nursing program. The organization assists in preparation of student nurses for assuming professional responsibilities.

Table Tennis Club - Dedicated to promoting and increasing participation in the game of table tennis. The club attempts to promote tournaments within the community and with other community colleges.

Veteran's Club - A service and social organization open to any man or woman who has served in the armed forces of the United States.

Women's Club (Not For Women Only) - Open to all students and staff who are interested in discussing women's concerns.

Writer's Club - Publishes a journal, *Before the Sun*, each spring. Open to interested students and staff. Frequent readings are scheduled by the club to allow members to share their work.

NEW IDEAS WELCOME

Students interested in organizing a new club or organization should visit the student activities office in building 1 for information concerning the necessary procedures for obtaining a charter.

Ideas for activities and excursions are also welcome. Planning is done with student's interests foremost.

STUDENT NEWSPAPER

Chemeketa's student newspaper, *Courier 4*, is published weekly during the fall, winter and spring quarters. Written and prepared by journalism students, the newspaper has established a consistently high rating in national competition (Associated Collegiate Press). *Courier 4* was recently granted associate membership in the Oregon Newspaper Publisher's Association.

A curriculum of lower division journalism courses designed for pre-majors and non-majors has supported the growth of the publication.

Entirely produced on campus, the *Courier 4* is printed by students of the visual communication program.

Students interested in working on the student newspaper as reporters, editors or photographers, may apply for staff positions through the newspaper adivsor. The *Courier 4* office is located in building one.

RALLY SQUAD

The rally squad is the main force in building the school spirit which contributes to winning

teams. Cheerleaders are elected early in the fall term. Applicants may sign up in the ASCCC Office.

SWING CHOIR AND STAGE BAND

"Sound Circuit," the college's swing choir and "Sound Spectrum," the stage band, perform at a variety of functions on campus and in the community. Participants may receive college credit by registering for Music 197, Chorus class, or Music 195, Stage Band.

ATHLETICS

Throughout the year, Chemeketa students may participate in a variety of intramural activities, including bowling, volleyball, softball, basketball, skiing and golf.

Participation in intercollegiate sports is based on the requirements of the National Junior College Athletic Association. Chemeketa is a member of the National Association and the Oregon Community College Athletic Association. Every member of the OCCAA has agreed to abide by the rules of the NJCAA as a minimum standard. Chemeketa students participating in sports must be taking 12 credit hours and maintain a GPA of at least 1.75.

*Interscholastic sports require special in*surance coverage and a physical examination. These are provided at no cost to the student by the college. Participating students may obtain information at the physical education department office.

STUDENT INFORMATION

STUDENT RIGHTS AND RESPONSIBILITIES

On April 7, 1977, a Student Rights and Responsibilities document was approved by the college Board of Education. Initiated by the Associated Students, this document defines the rights and responsibilities of students and the due process for violations.

The Student Rights and Responsibilities document is printed in full in the campus guide book, *The Informer*, and may be obtained in the student activities office and the counseling office.

STUDENT LIVING ACCOMMODATIONS

The college does not provide living accommodations and assumes no responsibility for student living arrangements. However, there is a wide range of living accomodations available in the Salem area. Some listings are available in the counseling center.

STUDENT HEALTH SERVICES

Chemeketa maintains a first aid office in Building 22, Room 113, behind the security information office. Because the college has no physician, students are expected to have general medical needs, including medications (prescriptive and non-prescriptive) met by their personal physician, dentist or clinics.

STUDENT HEALTH AND ACCIDENT INSURANCE

A low-cost health and accident insurance program is available through the college for students and their dependents.

Additional information about health and accident programs may be obtained at the counseling center or the business office.

AUTOMOBILES ON CAMPUS

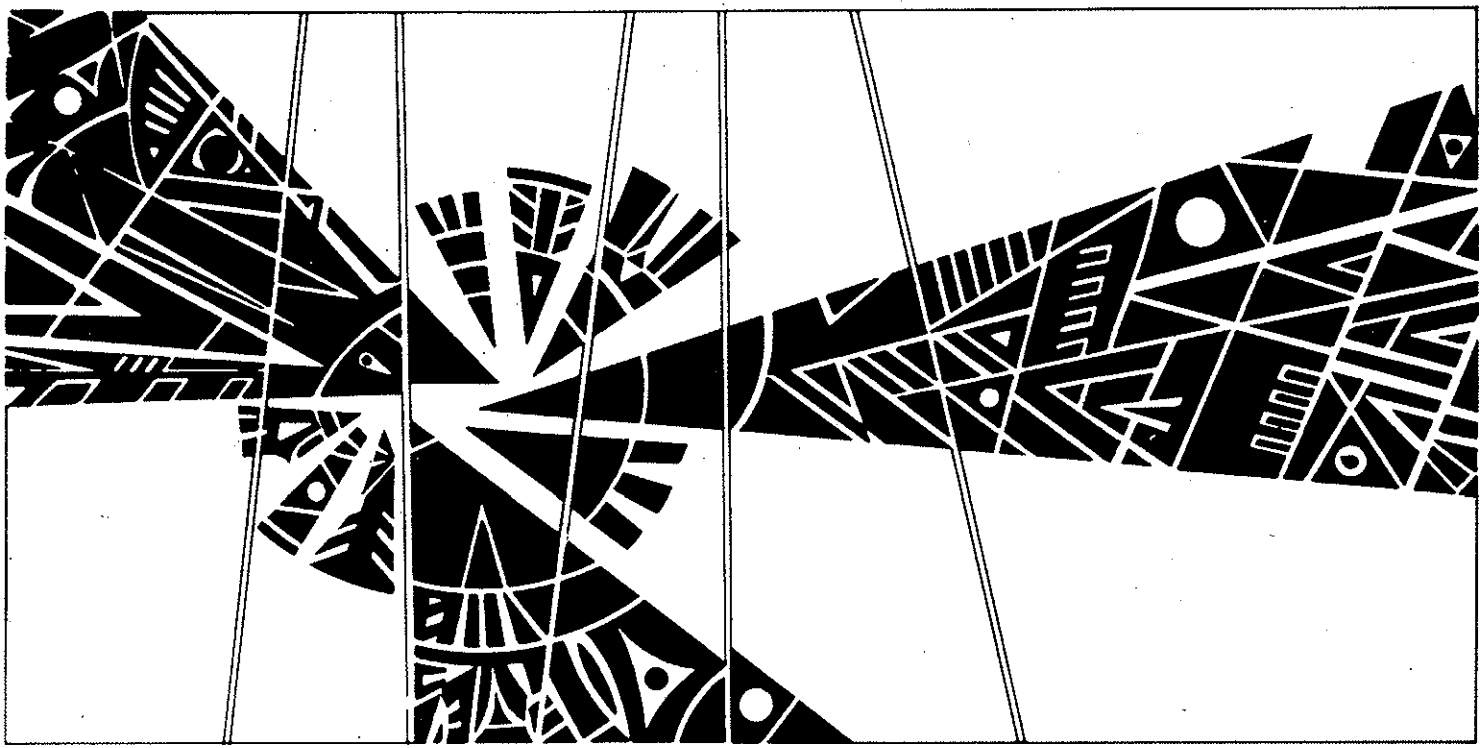
All faculty, students and visitors who have motor vehicles in their possession or control for use on the Chemeketa Campus at any time during the day must obtain the appropriate permit for the area in which they are parking. Parking permits are obtained free at the time of academic registration or at the security office in building 22. Parking of a vehicle on campus without a proper parking permit may result in a fine. Faculty and students are responsible for knowing the regulations pertaining to operating a vehicle on campus and will be held responsible for any violations of these regulations pertaining to operating a vehicle on campus and will be held responsible for any violation of these regulations in which a vehicle in their possession is involved, regardless of who operates it. Specific information on parking and traffic regulations is available at the time of registration at the security office.

PETS ON CAMPUS

Animals, insects, fowl, etc., are not to be brought on campus, with the exception of seeing-eye dogs.

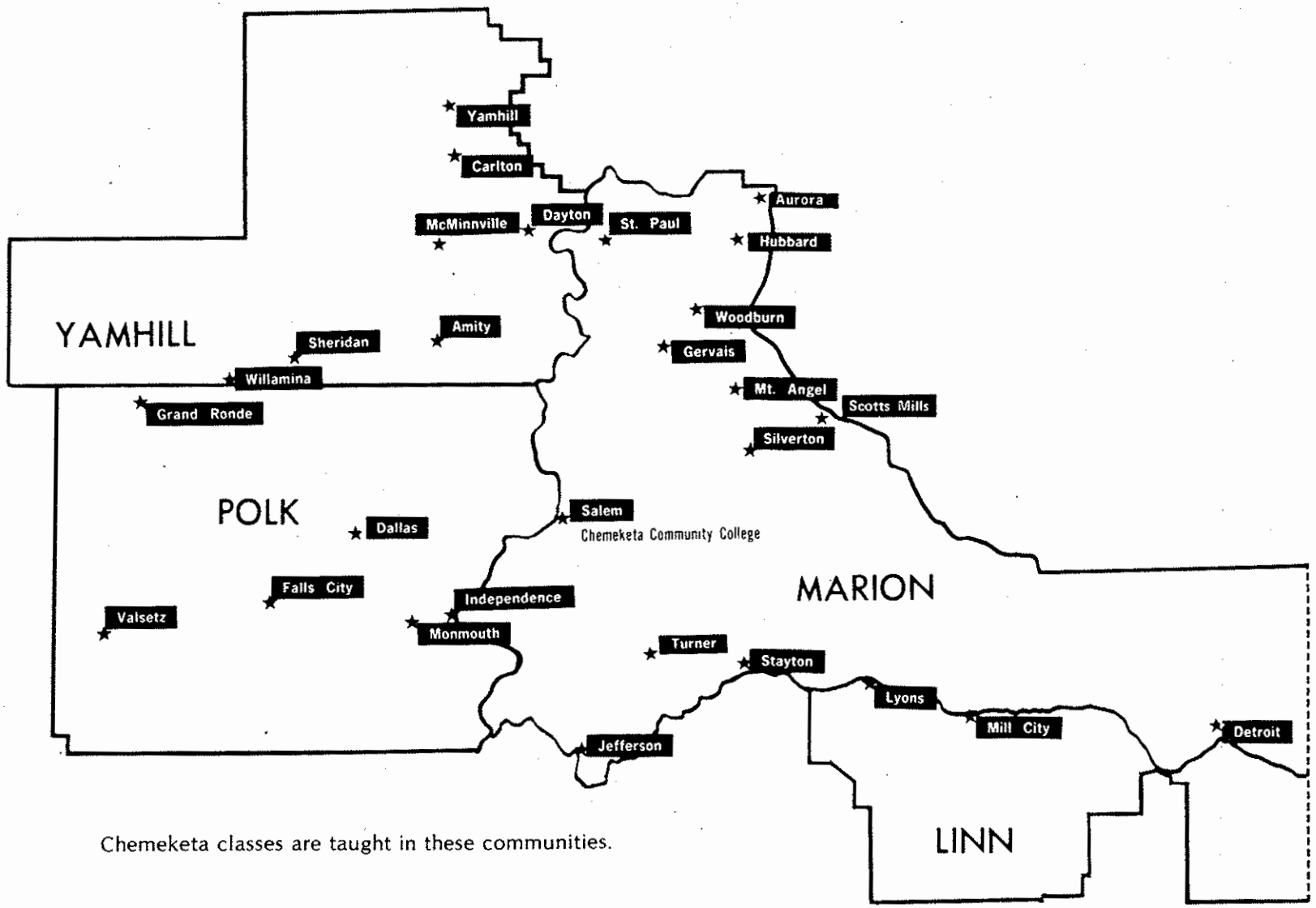
REGISTERING TO VOTE

All students on the Chemeketa campus are encouraged to become registered voters. This may be done by contacting an official registrar in the student activities office or the learning center or by using the forms provided by the elections office. These forms are distributed at various points on campus and may be mailed directly to the elections office. It is hoped that students will take a responsible part in the operation of their local, state and national governments.

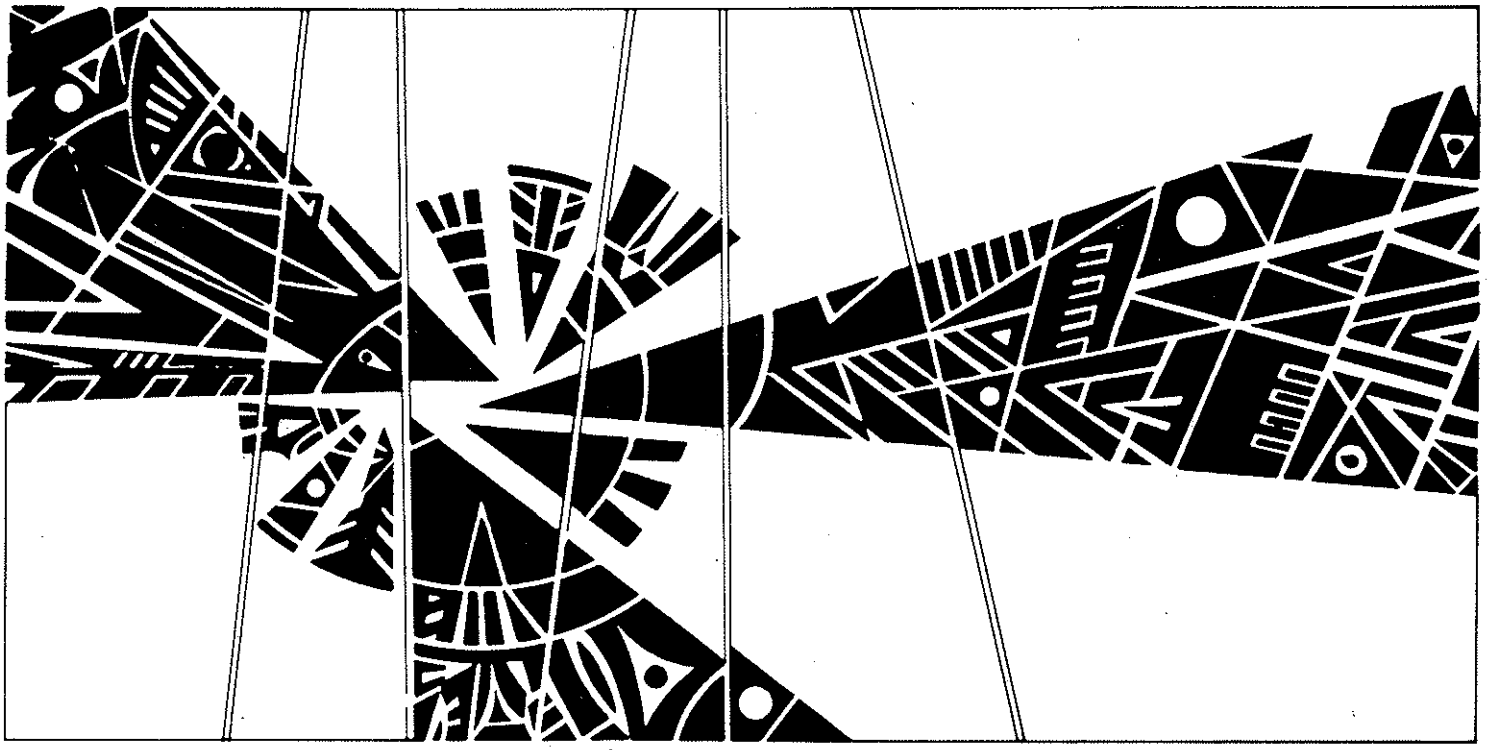


COMMUNITY SERVICES

CHEMEKETA COMMUNITY COLLEGE

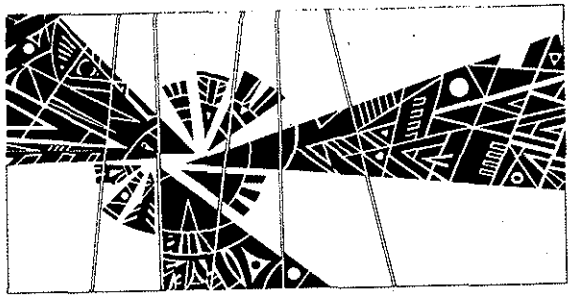


Chemeketa classes are taught in these communities.



INSTRUCTIONAL PROGRAMS

CHEMEKETA COMMUNITY COLLEGE



ACCOUNTING BUSINESS TECHNOLOGY

The accounting curriculum offers a core of accounting, business and general education courses necessary for an entry-level position as a full-cycle bookkeeper, accounting clerk or junior accountant for government or private industry. A graduate of this challenging program will have specialized knowledge of accounting plus a general knowledge of business.

Math requirements: proficiency in math is required for graduation. *Business mathematics* 6.918, is the minimum achievement level. Placement in the initial math course is based on a math placement test. Any transfer math, *Math 95 or higher*, will be accepted in place of the business math.

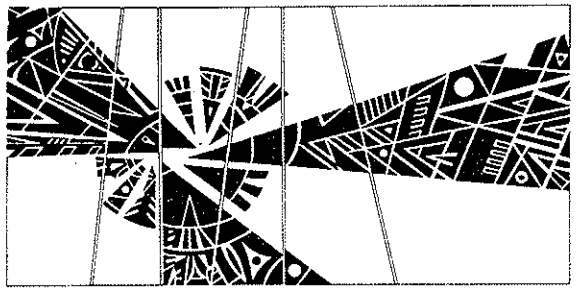
English requirement: proficiency in English is required for graduation. Minimum achievement level in business communications BA214 or 2.672. Placement in the initial course is based on an English placement test. Transferable English Composition, Wr121, 122, 123, will be accepted in place of Wr40, 2.673 and BA214.

Typing requirement: proficiency in typing is required for graduation. Minimum level is to successfully meet the requirements for Typing I SS121.

Cooperative work experience: students eligible for cooperative work experience if work relating to accounting is obtained. CWE is strongly recommended for second-year students. A maximum of 12 credit hours of CWE may be taken of which 6 credits can be applied toward graduation.

Upon successful completion of 105 credit hours following the sequence of courses outlined below, the student will receive an Associate in Science degree in business technology—accounting option.

Course No.	Course Title	Credit Hour
Term 1		
	English Variable (based on Placement Test)	
	or	
	General Education Elective	
	Math Variable (based on Placement Test)	3
BA211	Financial Accounting I	4
BA101	Business Environment	4
2.658	Introduction to Calculators	2
BA131	Introduction to Data Processing	3
Term 2		
	English Variable	
	or	
	General Education Elective	3
2.401	Real Estate — A Consumer Approach	3
	Math Variable	3
BA212	Financial Accounting II	4
Psy201	General Psychology	
	or	
Psy100	Introduction to Psychology	3
SS121	Typing I	3
Term 3		
BA214	Business Communications	3
BA213	Managerial Accounting	4
Soc204		
or		
Soc100	General Sociology	3
Psy202	General Psychology	
	or	
Psy101	Psychology of Human Relations	3
2.559	Governmental Accounting	
	or	
	Business Elective	3
BA217	Business Machines	3
Term 4		
2.551	Intermediate Finance Accounting I	4
BA226	Business Law I	3
BA222	Finance	3
BA216	Income Tax Accounting	3
	Business Elective	3
Term 5		
2.552	Intermediate Financial Accounting II	4
Ec100	Outline of Economics	
	or	
Ec201	Principles of Economics	3
BA206	Business Management Principles	3
BA215	Cost Accounting	3
2.687		
or		
2.688	Cooperative Work Experience	
	or	
	Business Elective	3
Term 6		
2.553	Intermediate Financial Accounting III	4
2.555	Auditing	3
Wr227	Technical Report Writing	3
Sp220	Business and Professional Speaking	
	or	
Sp111	Fundamentals of Speech	3
2.687		
or		
2.688	Cooperative Work Experience	
	or	
	Business Elective	3



ADULT BASIC EDUCATION

The adult basic education department offers programs for persons who need instruction in basic skills and/or wish to obtain a high school diploma or its equivalent.

Free developmental skills classes are taught in many communities in the college district and in the three county jails. Students who lack the equivalent of a high school diploma and/or need to improve their ability to communicate in the English language enroll weekly in open-entry, open-exit, highly individualized classes. Students who choose to take general education development (GED) tests receive a high school equivalency certificate.

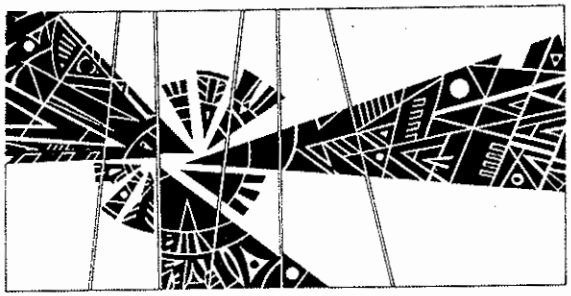
The ABE department offers free development skills classes in many communities in the college district and in the three county jails. Students who lack the equivalent of a high school diploma and/or need to improve their ability to communicate in the English language enroll weekly in open-entry, open-exit, highly individualized classes.

English As A Second Language courses are offered throughout the college district. Two college credit courses are offered on campus, with 1.117 stressing structure, oral and listening skills and 1.124 stressing structure, reading and vocabulary.

In many of the adult high school completion classes offered through the ABE department, concurrent college-level credit is also awarded; however, students are given more individualized help and have more lab hours available than in the corresponding college-level classes.

Students who enter Chemeketa's adult high school completion program may transfer credits and competencies from former high schools. Twenty-one credits and 44 competencies are required to complete the program. The program, according to state guidelines, prepares adults to function effectively in six life roles: individual, learner, producer, citizen, consumer and family member.

Programs are designed for adults. Students between 16 and 18 will not be admitted without a release from the high school district in which they reside.

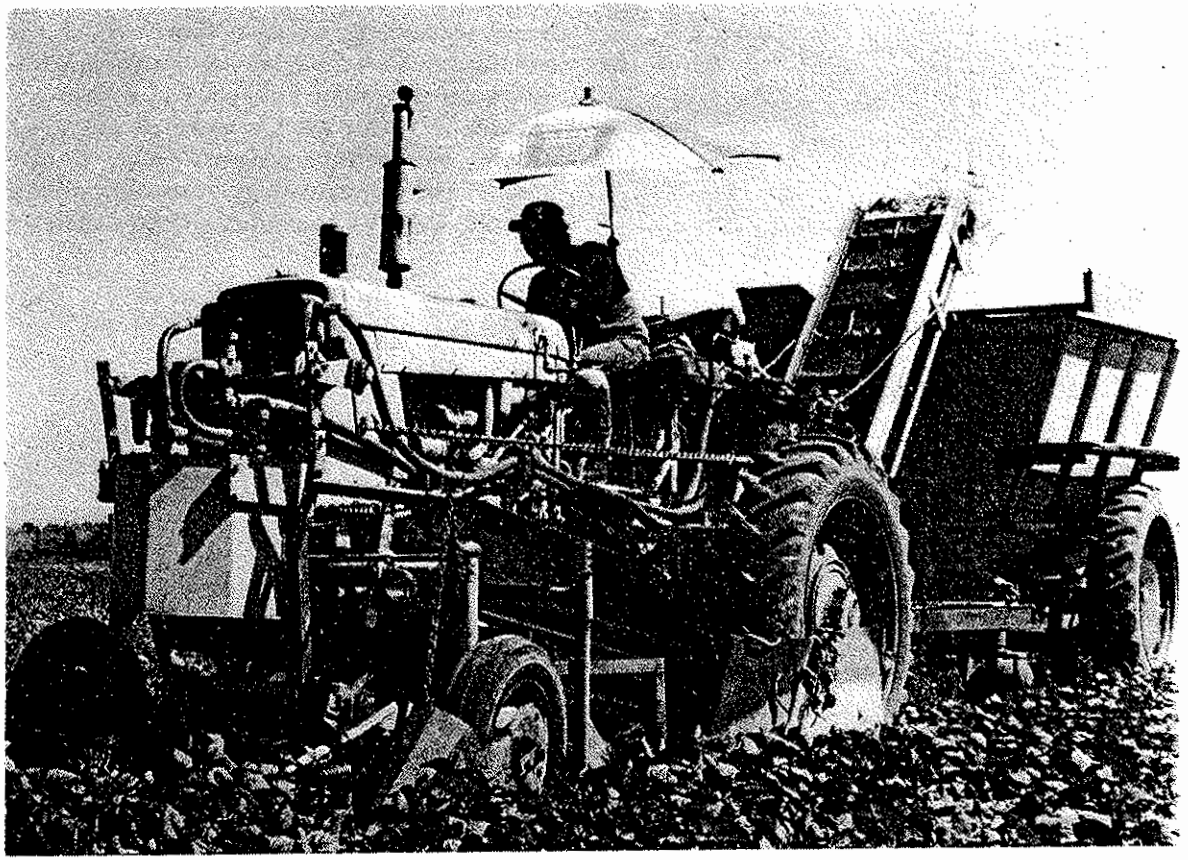


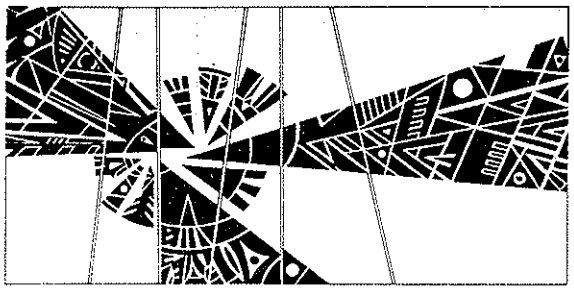
AGRIBUSINESS - CROP PRODUCTION

An occupational preparatory program in agribusiness-crop production will begin fall term 1978. This program is designed to prepare people for a wide variety of occupations in agriculture related fields such as fieldman for crop and seed processors, grain elevator operator, irrigation and drainage planner, application and sales of farm chemicals, farm machinery sales and agricultural agent for bank, insurance company, lending agency or farmer group.

The program consists of 48 credit hours of core curriculum to be taken during the first year. During the second year, the student will select an emphasis in either agribusiness or crop production and complete an additional 49 credit hours to earn an associate in science degree.

Details of the curriculum are available at Chemeketa Community College from the offices of trade and industry, admissions or counseling.



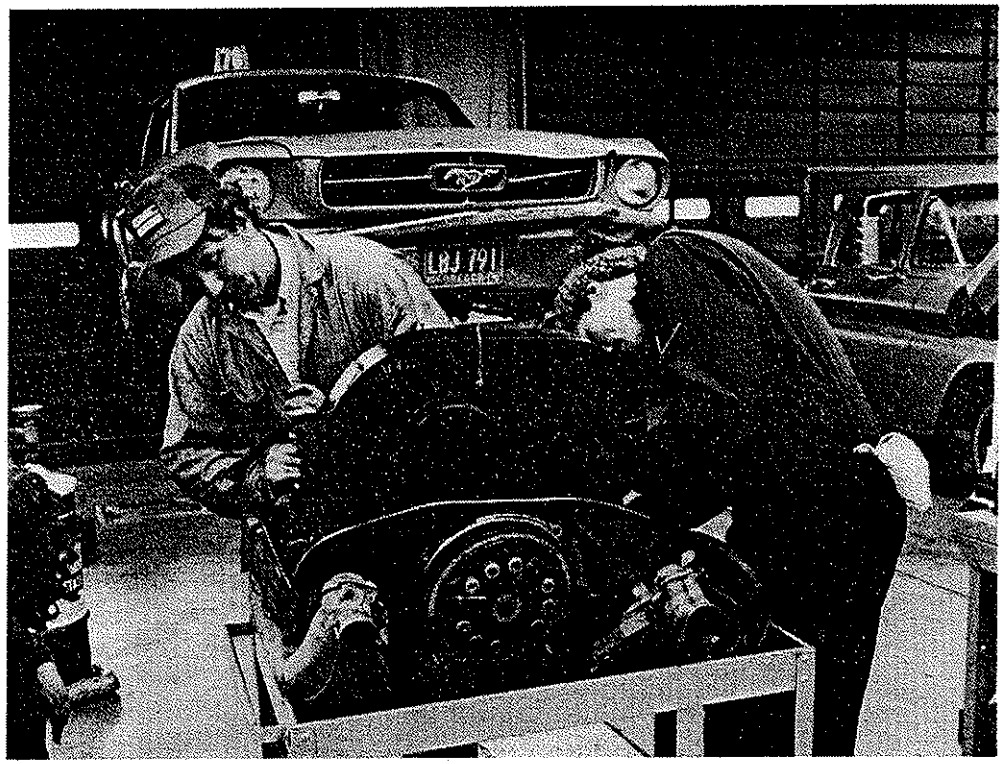


AUTOMOTIVE TECHNOLOGY

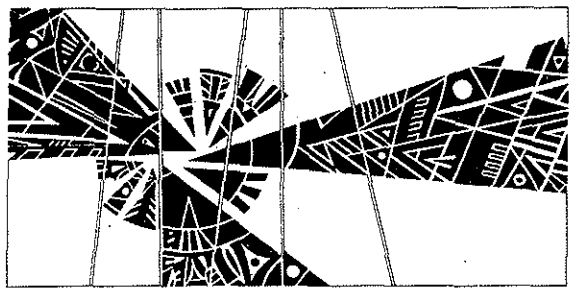
This curriculum provides technical knowledge and skills for automotive maintenance and repair occupations. It includes comprehensive experience based on understanding and skills developed in study of component systems and specialties.

Written and oral communications, along with other general education courses are included to prepare for effective participation in occupational, social and public activities. Related scientific, mathematical and general mechanical principles are stressed throughout the curriculum.

Upon satisfactory completion of the required 93 credit hours, the student is awarded an Associate in Science degree.



Course No.	Course Title	Credit Hour
Term 1		
3.300	Internal Combustion Engines	6
3.304	Automotive Electrical Systems I	4
3.303	Automotive Shop Safety	1
4.153	Welding	2
1.101	Communication Skills	3
Term 2		
3.306	Applied Fluid Mechanics	3
3.305	Power Trains	5
3.309	Technical Diagram Interpretation	2
1.204	Communication Skills	3
4.200	Mathematics	3
Term 3		
3.307	Automotive Chassis	3
3.301	Fuel Systems and Carburetion I	3
3.327	Automotive Repair I	4
3.308	Automotive Machine Shop	3
Term 4		
3.316	Fuel Systems and Carburetion II	4
3.325	Automotive Transmission	3
3.328	Automotive Repair II	4
	General Education Elective	3
Term 5		
3.329	Automotive Repair III	4
3.317	Automotive Electrical Systems II	4
3.319	Automotive Auxiliary Systems	4
3.320	Automotive Service Operations	2
	General Education Elective	3
Term 6		
3.330	Tune Up and Diagnosis	6
3.326	New Automotive Developments	3
Psy100	Introduction to Psychology	3
3.302	Automotive Materials	2
	General Education Elective	3



BANKING AND FINANCE

The associate degree banking and finance program is designed for students seeking careers with financial institutions and for persons already working for financial institutions who seek additional knowledge and/or a degree. Career opportunities will be found in banks, savings and loan firms, credit unions, consumer finance companies and similar financial companies.

This program may be occupational preparatory or occupational supplementary. Those persons presently or previously employed as bank clerks and tellers may enroll in the banking and finance program to complete banking objective courses and required core curriculum courses to fulfill degree requirements which would lead to job advancement or promotion to officer trainee or officer positions. Those persons who have never worked in banking or finance may complete all curriculum requirements for the Associate in Science degree in preparation for an entry position.

Banks offer many services; therefore, a wide choice of careers is available to workers, such as in auditing, personnel administration, public relations and operations research and control.

This program was planned in cooperation with the Willamette Chapter of the American Institute of Banking. The curriculum provides a basic core of courses including general education and general business, business electives to allow the student the opportunity to choose courses of particular interest or relevance, and five courses from a specialty banking area.

Upon completion of a minimum of 94 credit hours, the Associate in Science degree will be granted.

Math requirements: Applied Business Mathematics, 6.918, is the minimum achievement level required for graduation. The sequence of courses leading to this proficiency includes Mathematics 4.200, Business Mathematics 4.201, and Applied Business Mathematics 6.918. Initial placement is based on a math proficiency test. Transferable Math 10 and Math 096, or a higher level, will also fulfill the math requirements.

English requirements: Business Communications, BA214 is the minimum achievement level required for graduation. The sequence of courses leading to this proficiency includes Basic Writing Wr40, Business English 2.673, and Business Communications BA214. Initial placement is based on an English proficiency test. Transferable English Composition Wr121, Wr122 and Wr123 will also fulfill the English requirement.

Course No.	Course Title	Credit Hour
Term 1		
	English Variable (based on placement test)	
	or	
	General Education Elective	2
	Math Variable (based on placement test)	3
BA211	Financial Accounting I	
	or	
6.923	Accounting Procedures	4
BA101	Business Environment	4
Soc101	American Institutions	3
Term 2		
	English Variable (based on placement test)	
	or	
	General Education Elective	3
6.918	Applied Business Math	3
	Social Science Elective	3
BA212	Financial Accounting II	
	or	
6.924	Accounting Procedures II	4
	Objective elective from Banking, Credit Union or Savings and Loan)	3
Term 3		
BA214	Business Communications	3
BA213	Managerial Accounting	
	or	
6.925	Accounting Procedures III	4
BA223	Principles of Marketing	3
	Objective elective (from Banking, Credit Union or Savings and Loan)	3
	Business Elective	3

Second Year Courses

Required Core Courses:

BA226	Business Law I	3
Ec201	Principles of Economics	3
Wr227	Technical Writing	
	or	
1.106	Technical Report Writing	3

2.685	Personnel Principles and Supervision	3
BA250	Small Business Management	3
BA238	Salesmanship	3
BA222	Finance	3
BA131	Intro. to Data Processing	3
	Objective electives (from Banking, Credit Union or Savings and Loan)	9
	Cooperative Work Experience or Business Elective	3
	Social Science Elective	6
	Business Elective	3

Objective Electives

Banking Objective:

BA269	Principles of Bank Operations	3
BA270	Money and Banking	3
BA278	Law and Banking	3
BA280	Bank Managment	3
BA281	Installment Credit	3

Credit Union Objective:

BA286	*Credit Union Accounting*	3
BA287	Credit Union Directorship	3
BA288	Credit Union Management	3
BA289	Credit Union Law	3
BA290	Financial Counseling	3

Savings and Loan Objective:

2.408	Real Estate Appraisal I or	
2.423	Escrow Procedures I	3
BA291	Savings and Loan Accounting	3
BA260	Real Estate Principles I	3
BA263	Real Estate Law	3
BA292	Savings Operations	3

Suggested Business Electives:

2.401	Real Estate—A Consumer Approach	3
BA227	*Business Law II*	3
BA229	Consumer Finance	3
BA277	Business Ethics	3
BA217	Business Machines	3
SS121	Typing	3
2.429	Public Relations in Business	3
9.263	Agricultural Finance	3
2.408	Real Estate Appraisal I	3
2.423	Escrow Procedures I	3
BA232	Intro. to Business Statistics	3

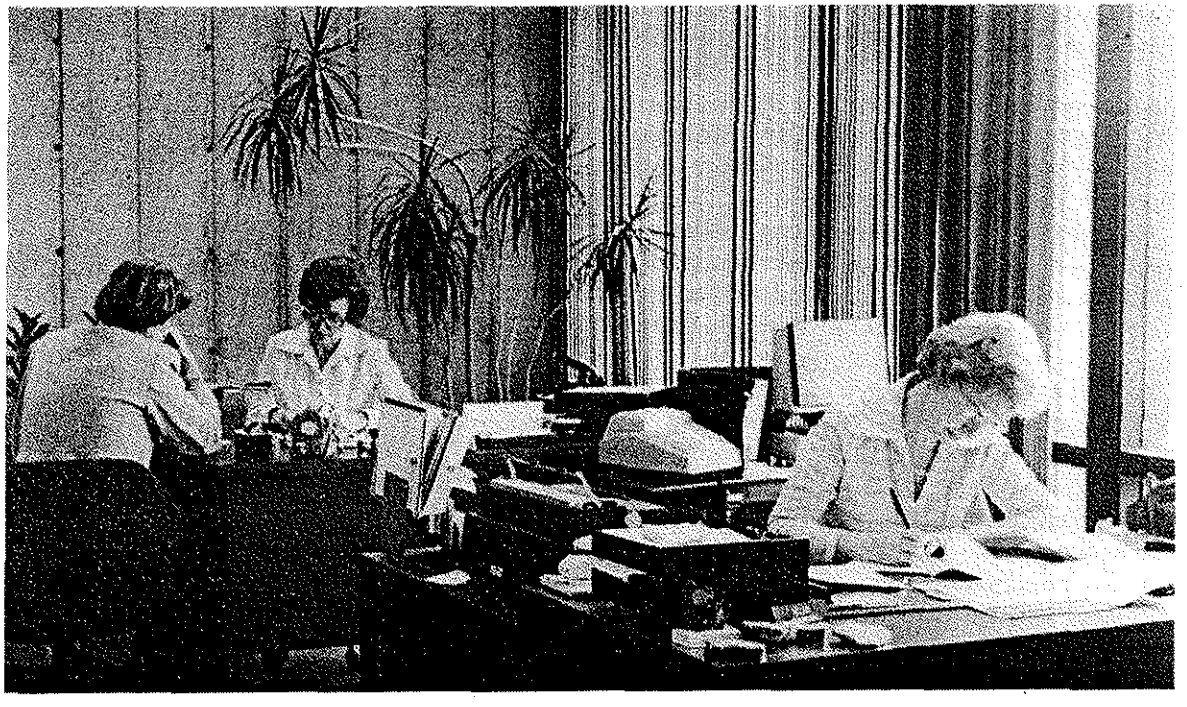
Suggested Social Science Electives:

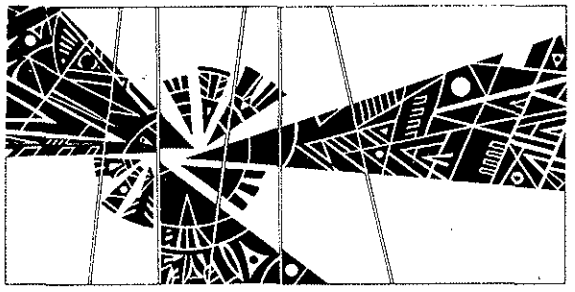
Psy201	General Psychology	3
Psy202	General Psychology	3
Soc204	General Sociology - Intro.	3
Soc205	General Sociology—Institutions	3

NOTES:

1. Second year students should take 16 hours per term to complete the program in six terms.

2. AIB courses may be validated as credit toward a degree when it is determined that course content is comparable.





BUILDING INSPECTOR

The course of study for the building inspector program is designed to train students in the skills of a building inspector. It will provide training on the job as well as provide technical knowledge. The goal is certification as a building inspector in the State of Oregon.

Building inspection is designed as a one year certificate program and a two year associate degree program. Participants in the one year program will have prior experience in this field and with some additional education training will become certifiable at varying levels depending on the type and amount of their work experience. Participants in the two year program need not have prior experience.

The curriculum will cover many technical areas, plus courses of general education. Courses in mathematics, structural design, and drafting will be complemented by various code courses and plans inspection techniques.

A graduate of the two year curriculum could be eligible for certification as a building inspector at the C-level and with some experience in the field could become a construction manager, a clerk-of-the-works, or perform similar functions.

It is anticipated that the majority of graduates will seek employment with public agencies, possibly statewide. It is expected that building inspectors will be in demand in cities where no demand has previously existed.

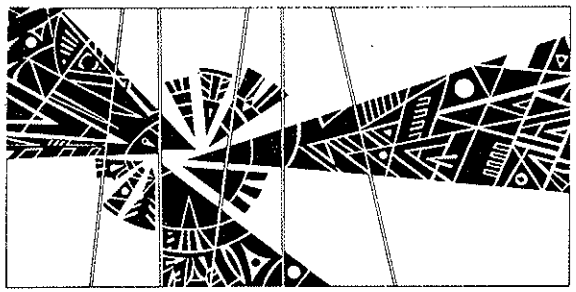
Upon completion of the 98 required credit hours, the students is awarded an Associate in Science degree.

Building Inspector Program
One Year Certificate Program

Course No.	Course Title	Credit Hour
Term 1		
1.101	Communication Skills I	3
Psy100	Introduction to Psychology	3
4.120	Print Reading	2
4.200	Mathematics	3
6.116	Building Code I	3
Term 2		
1.104	Communication Skills II	3
Psy101	Psychology of Human Relations	3
6.420	Techniques of Inspection I	3
6.281	Building Materials	3
6.415	Masonry Construction	3
6.119	Building Code II	3
Term 3		
1.106	Technical Report Writing	3
6.430	Oregon Law & Department Administration	3
6.122	Soil Mechanics Fundamentals	3
6.425	Eletrical Safety	3
6.120	Building Codes - UMC	3

Building Inspector Program
Two-Year Associate of Science Degree

Term 1		
1.101	Communication Skills I	3
6.261	Tech Mathematics	4
4.101	Drafting	2
6.136	Engineering Tech. Orientation	2
Psy101	Psychology of Human Relations	3
6.116	Building Codes I	3
Term 2		
4.120	Print Reading	2
6.262	Tech Mathematics	4
6.119	Building Code II	3
6.109	Applied Mechanics	3
6.371	Applied Physics	4
Term 3		
1.106	Technical Report Writing	3
6.430	Oregon Law and Dept. Administration	3
6.410	Plans Examiner Techniques I (F. & L. S.)	3
6.105	Strength of Materials	3
6.120	Building Codes - UMC	3
4.123	Project Development	3
Term 4		
6.128	Strength of Materials	3
6.266	Tech Mathematics	4
6.405	*Plumbing Code*	3
6.425	Eletrical Safety	3
1.104	Communication Skills II	3
Term 5		
6.125	Timber and Steel Construction	4
6.110	Construction Estimating	3
6.420	Techniques of Inspection I	3
6.415	Masonry Construction	3
6.281	Building Materials	3
Term 6		
6.123	Concrete Construction Design	3
6.124	Soil Mechanics	3
6.118	Contracts and Specification	3
6.411	Plans Examiner Techniques II	3
6.421	Techniques of Inspection II	3



BUSINESS MANAGEMENT

*The management curriculum offers a core of business courses. A graduate of the program may work in a small business or large retail firm as a management-trainee or in another entry-level position in which further specialized training in busines is not required.

Once the graduate has gained the requisite in-house training and experience, the program will enhance his or her potential for advancement within the organization.

Upon successful completion of 97 credit hours following the sequence of courses outline below, the student will receive an Associate in Science degree in business technology-management option.

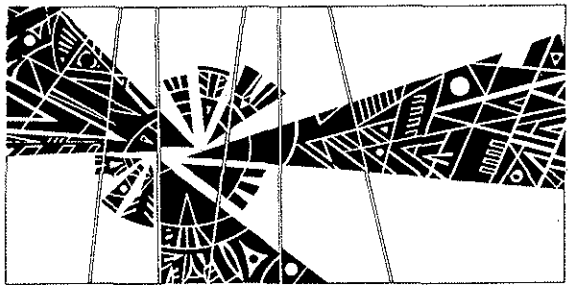
Math requirements: Applied Business Mathematics 6.918 is the minimum achievement level required for graduation. The sequence of courses leading to this proficiency includes Mathematics 4.200, Business Mathematics 4.201, and Applied Business Mathematics 6.918. Initial placement is based on a math proficiency test. Transferable Math 10 and Math 095, or a higher level, will also fulfill the math requirement.

English requirements: Business Communication BA214 is the minimum achievement level required for graduation. The sequence of courses leading to this proficiency includes Basic Writing Wr40, Business English 2.673, and Business Communication BA214. Wr40 does not count toward graduation requirements. Transferable English Composition Wr121, Wr122 and Wr123 will also fulfill the English requirement.

Cooperative Work Experience: students are eligible for cooperative work experience if work relating to business management is obtained. CWE is strongly recommended for second-year students. A maximum of 12 credit hours of CWE may be applied toward graduation.

Course No.	Course Title	Credit Hour
Term 1		
	English Variable or General Education Elective (based on placement test)	3
	Math Variable (based on placement test)	3
BA211	Financial Accounting I	
	or	
6.923	*Accounting Procedures I	4
BA101	Business Environment	4
BA131	Introduction to Data Processing	3
Term 2		
BA214	Business Communications	3
SS121	Typing I	3
6.918	Applied Business Math	3
BA212	Financial Accounting II	
	or	
6.924	*Accounting Procedures II	4
	Psychology or Sociology Elective	3
Term 3		
BA213	Managerial Accounting	
	or	
6.925	*Accounting Procedures III	4
	Psychology or Sociology Elective	3
BA223	Marketing Principles	3
BA206	Business Management Principles	3
	Approved Business Elective	3
Term 4		
	Psychology or Sociology Elective	3
BA226	Business Law I	3
BA215	Cost Accounting	3
	Approved Business Electives	6
Term 5		
	Elective	3
BA222	Finance	3
Ec100	Outline of Economics	
	or	
Ec201	Principles of Economics	3
	Approved Business Electives	6
2.687	Cooperative Work Experience	
	or	
2.688	Business Elective	3
Term 6		
	Elective	3
2.685	Personnel Principles and Supervision	3
Sp220	Business and Professional Speaking	
	or	
Sp111	Fundamentals of Speech	3
	Approved Business Elective	3
2.687	Cooperative Work Experience	
	or	
	Approved Business Elective	3

*Students who take the Accounting Procedures sequence must enroll in BA213 before they take BA215.



CHEMICAL TECHNOLOGY

The chemical technician is a member of the scientific team in chemical laboratories in the chemical and allied industries, research institutions and governmental agencies.

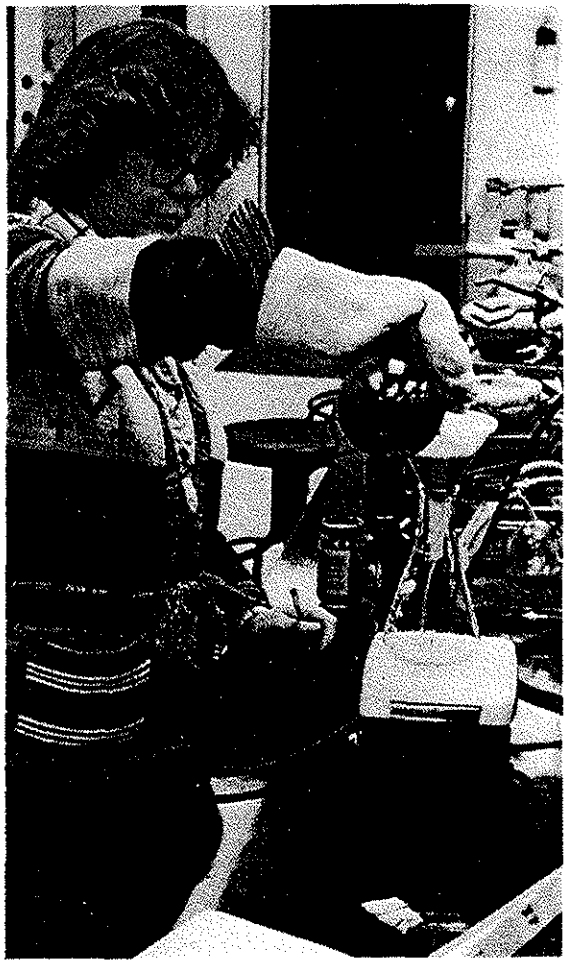
This curriculum is designed with a basic core of essential courses and thirty units of optional science and/or technical courses. The basic core courses deal with laboratory principles and techniques in every major discipline of chemistry, plus effective courses in mathematics and communications.

The opportunity for optional courses allows the student to develop particular educational goals to meet the needs of particular types of laboratories or an expertise in a laboratory.

One year of high school algebra or its equivalent is required for admission to this curriculum. Required math sequences are Technical Mathematics 6.261, 6.262, 6.266 or Math 95, 101 and one of the following: Mth102, 103 or 106. Student qualitfying for a math higher than Mth95 are encouraged to complete three terms of math at the appropriate level.

Upon satisfactory completion of the curriculum which requires a minimum of 102 approved credit hours, the student is awarded the Associate in Science Degree.

Term 1 Course No.	Course Title	Credit Hour
6.320	Chemistry for Technicians	6
1.101	Communication Skills	
	or	
Wr121	English Composition	3
	Math variable	3/4



He261	Cardio-Pulmonary Resuscitation	1
	Electives in area of concentration (see below)	3/4
Term 2		
6.321	Chemistry for Technicians	6
1.104	Communication Skills	
	or	
Sp111	Fundamentals of Speech	3
	Math variable	3/4
6.151	Chemical Problems	1
	Elective	3/4
Term 3		
6.322	Chemistry for Technicians	6
1.106	Technical Report Writing	
	or	
Wr122	English Composition	3
	Math variable	3/4
6.150	Observing Chemical Operations	1
	Elective	3/4
Term 4		
6.323	Chemistry for Technicians	6
6.339	Glass Blowing	1
BA131	Introduction to Data Processing	3
	Electives	9/10
Term 5		
6.324	Chemistry for Technicians	6
6.326	Quantitative Analysis for Technicians	2
	Electives	9/10

Term 6

6.325	Chemistry for Technicians	6
6.345	Radiation Measurements	2
	Electives (see below)	9/10

Electives consist of nine (9) credit hours of general education courses and thirty (30) credit hours of science or technical courses. As a part of the thirty hours either Applied Physics 6.370 or the Physics 201, 202, 203 sequence is required.

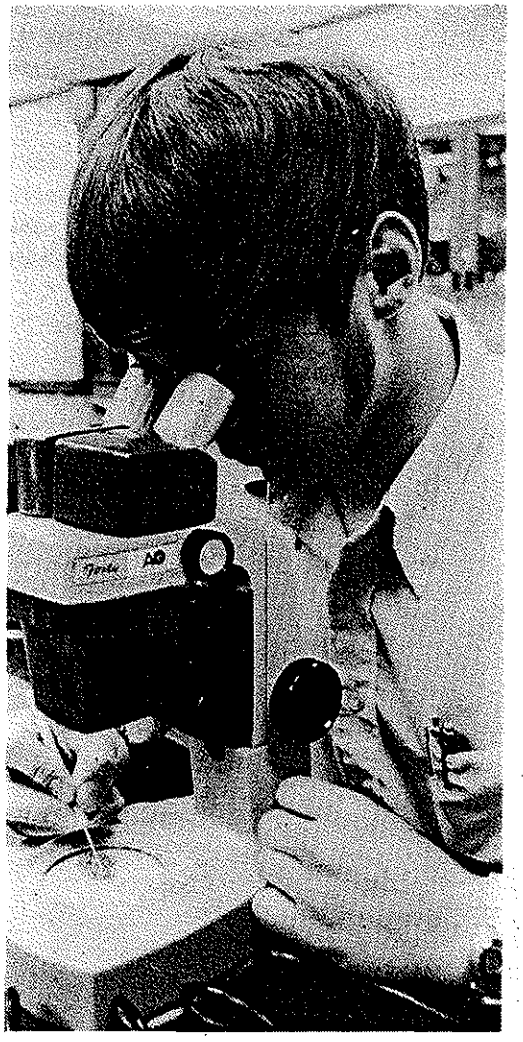
The other electives provide a unified area of educational background and are subject to class scheduling and approval by the advisor. Approved science or technical courses providing direction toward a specific chemical laboratory type or position are:

Environmental Laboratory

Bi101	Biology	4
Bi102	Biology	4
Bi103	Biology	4
Bi123	Microbiology	4
6.130	Environmental Quality Control	3

Industrial Materials & Control Lab

6.371	Applied Physics	4
6.109	Applied Mechanics	3
6.105	Strength of Materials	3
6.128	Strength of Materials	3
6.117	Applied Fluid Power	3
4.170	Industrial Materials of Processes	3



Forest Products Laboratory

4.281	Pulp and Paper Technology	4
6.285	Plywood, Composite and Laminated Wood Products	3
6.279	Wood Adhesives and Coatings	4
4.280	Forest Products	4

Metals Refining Laboratory

6.602	Metallurgy	3
G201,204	Geology	4
G202,205	Geology	4
G203,206	Geology	4

Instrumental Laboratory

6.200	Electrical Theory DC	4
6.202	Electrical Theory AC	4
6.210	Transistor Fundamentals	4
6.211	Transistor Circuits	5
6.237	Semiconductors	3

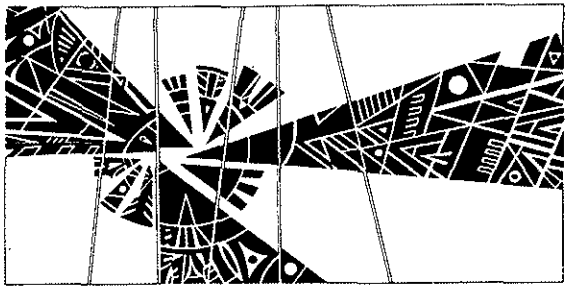
Chemical Data Analysis Processing

Mth103	Probability and Statistics	4
6.941	Data Processing Math	3
6.956	Systems 370 Concepts and Facilities	3

Other pertinent technical courses can also be selected with approval of the student's advisor to build a proficient background

Another important part of the program is cooperative work experience. Up to 12 credits as technical electives can be achieved by placement in a learning laboratory situation. A number of area industrial and governmental laboratories are involved in this program.

Appropraite summer employment may also be used for CWE by arrangement with the work related experience office before the end of the spring term.



CIVIL-STRUCTURAL ENGINEERING TECHNOLOGY

The civil-structural engineering curriculum provides practical training in the application of current theory and practices common to the field of civil engineering, preparing the student for employment and advancement in various areas of the civil and structural fields.

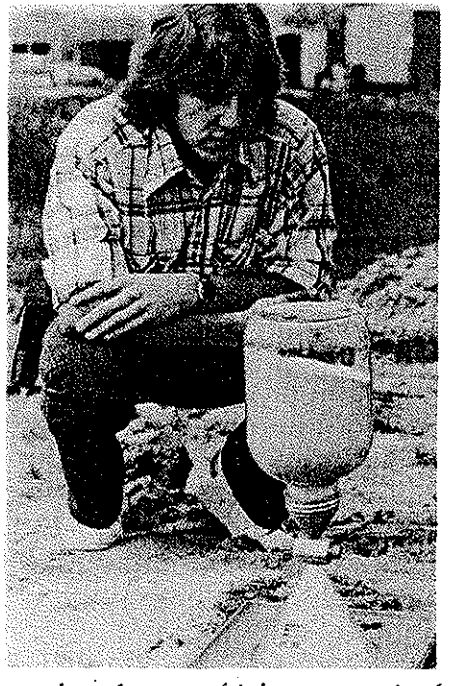
The program is designed to prepare competent engineering technicians for positions in related engineering technology, with excellent opportunities for careers in highway, bridge, dam and factory development and construction, design drafting, estimating, inspection, material analysis and photogrammetry.

Comprehensive practical training in areas of surveying, strength of materials and construction activities provides application of the theoretical and mathematical courses taken concurrently.

Preparation for advancement in and adaption to the changing technological and social world is included, enabling the student to use the program as a base in general civil engineering and related work. Together with further study and sufficient experience, the graduate would have opportunity to advance to a civil engineering rating while employed by certain federal, state or city agencies.

On construction plans, civil-structural technicians may help in estimating costs or preparing specifications for materials or participate in surveying, drafting or design work. Once the actual construction work has begun, they may assist the contractors or engineers in scheduling construction activities and inspecting the work for conformance with blueprints and specifications.

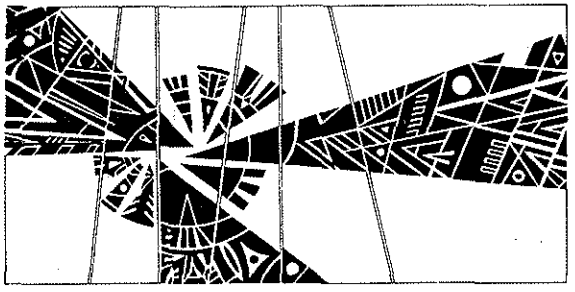
Examples of areas of job opportunity for recent graduates are inspector, civil engineering technician, contracting technician, junior surveyor, estimator, draftsman and quantity estimators.



Examples of areas of job opportunity for experienced engineering technicians are construction supervisor, highway engineering technician, photogrammetrist, specifications writer, survey party chief and structural designer.

The students is awarded an Associate in Science degree upon successful completion of 98 required credit hours.

Course No.	Course Title	Credit Hour
Term 1		
6.101	Plane Surveying	4
4.101	Drafting	2
6.261	Technical Mathematics	4
6.136	Engineering Technician Orientation	2
1.101	Communication Skills	3
Psy100	Introduction to Psychology	3
Term 2		
6.371	Applied Physics	4
4.120	Print Reading	2
6.103	Plane Surveying	4
6.262	Technical Mathematics	4
6.109	Applied Mechanics	3
Term 3		
6.500	Surveying Computations	3
6.105	Strength of Materials	3
6.266	Technical Mathematics	4
1.106	Technical Report Writing	3
6.139	Environmental Quality Control	3
Term 4		
6.335	Land Division and Mapping	3
6.128	Strength of Materials	3
4.123	Project Development	3
6.281	Building Materials	3
6.118	Contracts and Specifications	3
Term 5		
6.110	Construction Estimating	3
4.236	Civil Engineering Drafting	3
6.113	Hydraulics	4
6.125	Timber and Steel Construction	4
1.104	Communication Skills II	3
Term 6		
6.123	Concrete Construction and Design	3
6.140	Sanitary Engineering	3
6.124	Soil Mechanics	3
6.507	Route Surveying	3
4.287	Methods of Supervision	3



CLERICAL TECHNOLOGY

The clerical technology curriculum has been designed to provide practical training for the person interested in working in one of several occupations, including general office clerk, receptionist, typist, stenographer, file clerk, transcribing machine operator, bookkeeper and data processing clerk.

The curriculum is recommended for those who like to work with people and who wish to prepare for work in a minimum amount of time.

An adivsor will work with the student to develop a complete program to fit the student's needs for the desired occupation.

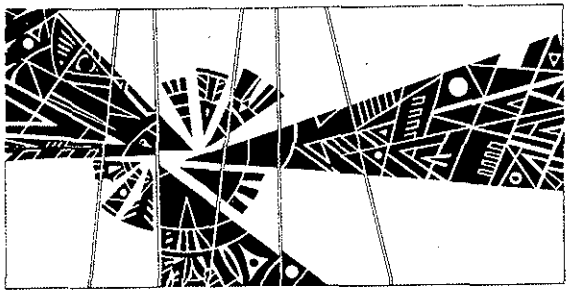
A certificate of completion is awarded upon successful completion of the program. A minimum of 48 credit hours is required.

Math requirements: Business Math 4.201 required for graduation.

Electives: Minimum of 18 credit hours required for graduation. Approved electives may be selected from all business or general education courses, or cooperative work experience and approved by assigned advisor.

Cooperative work experience is recommended for a minimum of three credit hours and a maximum of nine credit hours toward the certificate of completion.

Term 1		
Course No.	**Course Title**	**Credit Hour**
	Math Variable (based on *placement test*)	3
2.703	Business PAR	3
SS121	Typing I	3
SS101	Office Careers Survey	1
	Approved Electives	6
Term2		
2.673	Business English Fundamentals	3
2.709	Typing Skill Building	3
2.658	Introduction to Calculators	2
	Social Science Elective	3
	Approved Electives	6
Term 3		
BA214	Business Communications	3
2.641	Office Procedures	3
SS122	Typing II	3
	Approved Electives	6



COMMERCIAL FOOD PRODUCTION

The one-year commercial food production program is designed primarily for training food service personnel in quality food production and service.

The program is flexible to allow for preparatory training for those who are getting ready to enter the food trades industry and supplementary training for those already employed in the occupation who wish to increase their knowledge and skills.

A certificate of completion is awarded to those individuals who have satisfactorily completed the required courses.

Graduates may find work in restaurants, hotels, hopsitals, country clubs, military indstallations, institutions, fast foods and other large food complexes.

A minimum of 52 credit hours is required for graduation.

Term 1

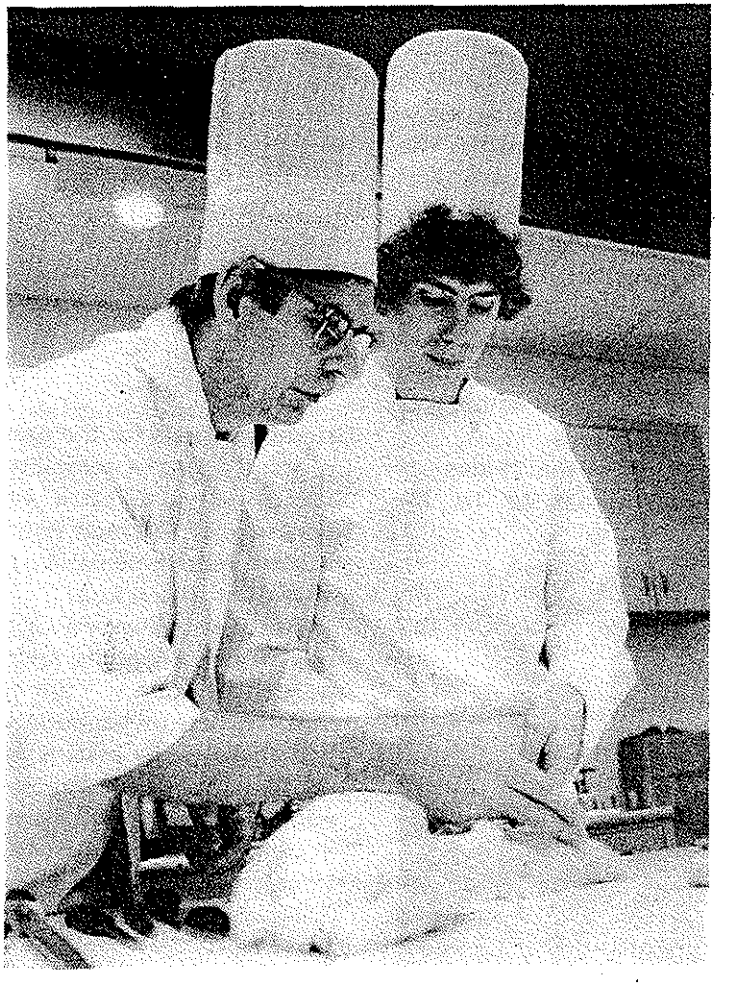
Course No.	Course Title	Credit Hours
3.200	Basic Food and Nutrition	2
3.201	Quantity Foods Production I	8
3.204	Dining Room Operation I	2
3.210	Sanitation and Safety	2
1.104	Communication Skills	
	or	
3.216	Math for Food Service	3

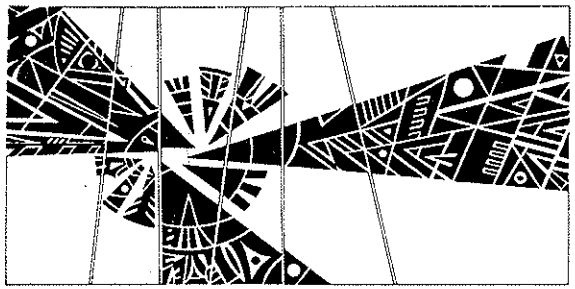
Term 2

3.211	Menu Planning and Culinary Terms	2
3.202	Quantity Foods Production II	8
3.205	Dining Room Operation II	2
3.212	Purchasing and Store Control	3
1.104	Communication Skills	
	of	
3.216	Math for Food Service	3

Term 3

3.213	Elementary Food Cost Analysis	2
3.203	Quantity Foods Production III	8
3.206	Dining Room Operation III	2
3.214	Food Production Organization and Planning	2
2.687	Cooperative Work Experience	3





COMPUTER OPERATIONS

The computer operations curriculum provides for concentrated study and hands-on experience in all positions of computer center operations including control clerk, console operator, scheduler, peripheral equipment operator, librarian and operations supervisor.

The student-oriented computer center, equipped with unit record equipment and IBM/370 Model 125 computing system, provides training for students in a professional data processing environment with current technology.

Emphasis is placed on professional performance including advanced operating standards and techniques, problem solving, recovery procedures and coordination with other people to achieve efficiency and reliability of results in a professional computer center.

During the second and third terms, students may be eligible for cooperative work experience, which allows them to gain computer operations experience at a local exmployer's installation and receive college credit.

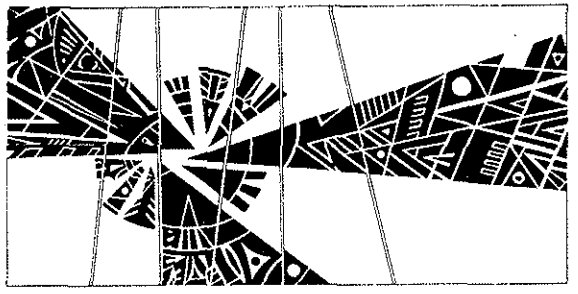
A certificate of completion is awarded to individuals who satisfactorily complete the requipred courses. The certificate meets the minimum education/experience requirements to qualify for employment classification with the State of Oregon as a computer operator I.

Students must demonstrate an English proficiency level equal to satisfactory completion of Communications Skills 1.101. This may be demonstrated by achieving a comparable score on the English placement test. As an alternative, successful completion of Communication Skills 1.101, or English Composition WR121, fulfills the requirement.

The minimum number of credit hours required for a certificate of completion is 52.

Course No.	Course Title	Credit Hour
Term 1		
	English Variable (based on placement test)	
	or	
	General Education Elective	3
BA211	Financial Accounting I	
	or	
6.923	Accounting Procedures	4
BA131	Introduction to Data Processing	3
6.979	Keypunch I	3
6.950	Computer Center Operations I	5
Term 2		
1.106	Technical Report Writing	
	or	
Wr122	English Composition	3
6.956	System 370 Concepts and Facilities	3
6.951	Computer Center Operations II	3
6.983	RJE Operations	3
6.991	Computer Center Lab II	3
	or	
6.993	Computer Center Lab II	6
2.688		
or		
FE201	*Cooperative Work Experience	
Term 3		
6.952	Computer Center Operation III	3
6.975	DOS/VS Utility and Librarian Programs	3
6.946	Data Center Management I	4
6.992	Computer Center Lab III	
	or	
6.994	Computer Center Lab III	6
2.688		
or		
FE201	*Cooperative Work Experience	

*Students are eligible for CWE only if they have a grade average of 2.5 or better in all data processing courses completed and have the recommendation of the CWE instructor-coordinator for computer operations.



COMPUTER PROGRAMMING

This two-year program is designed to produce a professional computer programmer. For this reason, the courses are not simply comprised of theory and technical details.

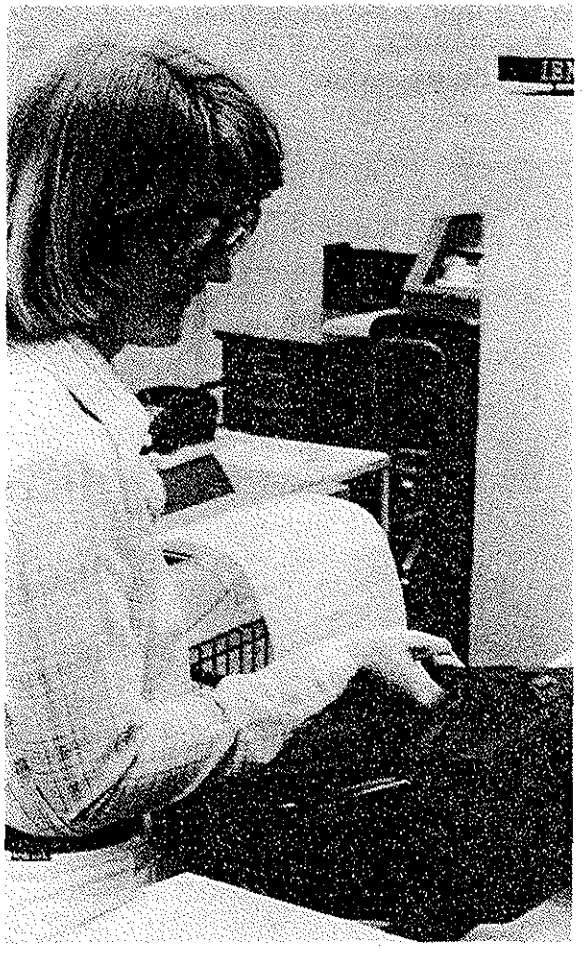
Emphasis is placed on performance of actual programming tasks designed to prepare the student for professional employment. Accounting and management principles are also stressed, as well as systematic problem solving and working effectively with people.

During the second year of study, students may be eligible for cooperative work experience, which allows them to gain computer programming experience at a local employer's installation and receive college credit.

An Associate in Science degree is awarded to individuals who satisfactorily complete the required courses. This degree meets the minimum education/experience requirement to qualify for employment classification with the State of Oregon as a Computer Programmer I.

There are three communications requirements:

1. Students must demonstrate a proficiency level equal to satisfactory completion of Communication Skills 1.101. This may be demonstrated by achieving a comparable score on the English placement test or by successful completion of Communications Skills 1.101, or English Composition Wr121.
2. Students must successfully complete Business and Professional Speaking Sr220, or Fundamentals of Speech, Sp111 or Sp112.
3. Students must successfully complete Technical Report Writing 1.106, or English Composition Wr112.



A math proficiency level equal to satisfactory completion of Beginning Algebra Mth010, must be demonstrated prior to enrolling in Data Processing Math 6.941. This may be demonstrated by achieving a comparable score on the math placement test.

A minimum number of credit hours required for the Associate in Science degree is 98.

Term 1 Course No.	Course Title	Credit Hours
	English Variable (based on placement test)	3
	Math Variable (based on placement test)	3
BA211	Financial Accounting I	
	or	
6.923	Accounting Procedures I	4
BA131	Introduction to Data Processing	3
6.948	Fundamentals of Computer Programming	3
Term 2		
	English Variable	
	or	
	General Education Elective	3
BA212	Financial Accounting II	
	or	
6.924	Accounting Procedures II	4
6.941	*Data Processing Math*	4
6.956	System 370 Concepts and Facilities	3
	Select One:	
6.961	COBOL I	
	or	
BA231	Business Data Processing-COBOL	4

Term 3

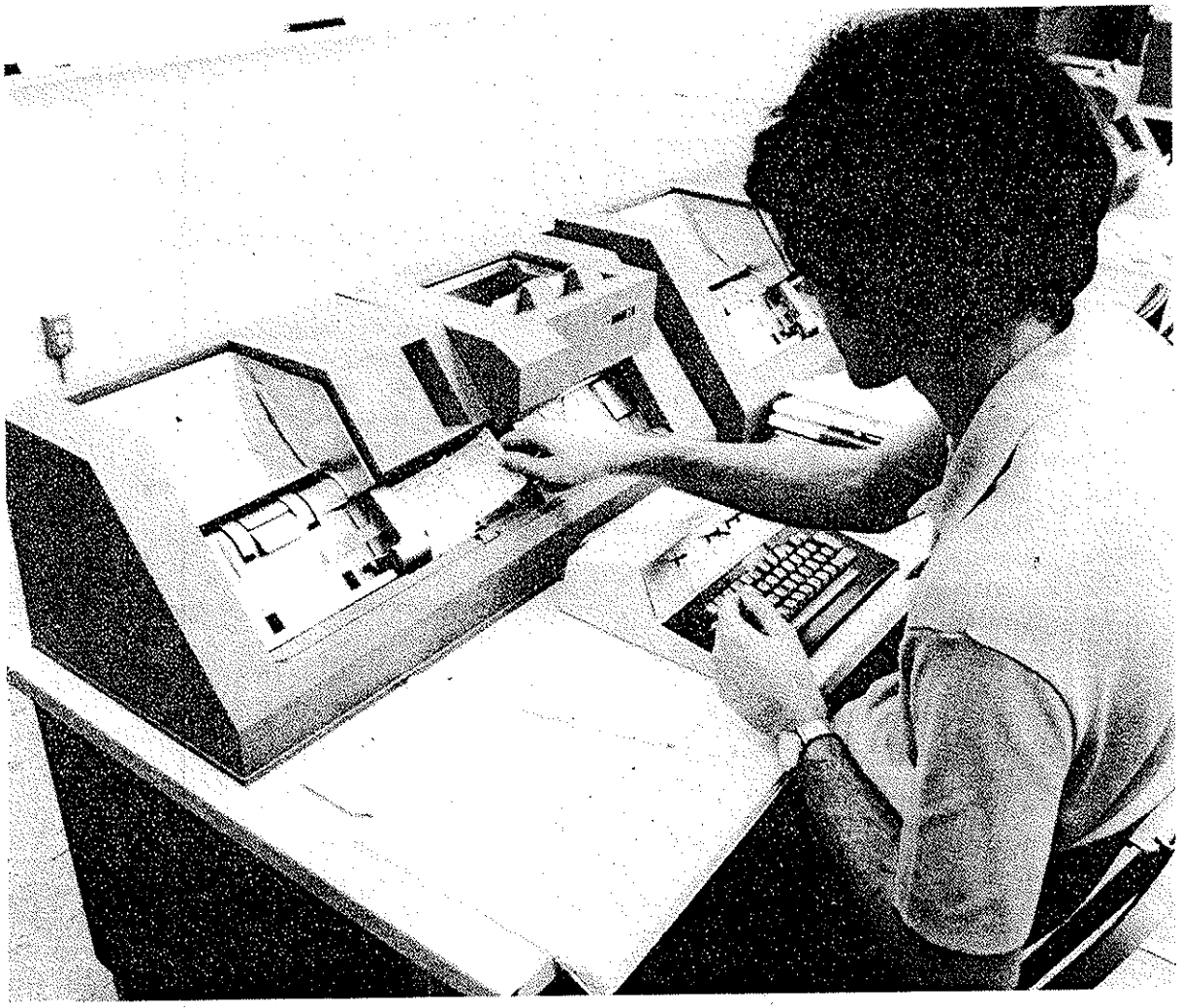
English Variable
or
General Education Elective 3

BA213 Managerial Accounting
or
6.925 Accounting Procedures III 4
6.949 DOS/VS Utilities and
Job Control 4

6.963 COBOL II 5

Term 4

2.576
or
BA215 Cost Accounting 3
6.944 Introduction to Systems
and Procedures 3
6.969 Assembler I 5



Select One:
Business Elective
or
2.687, 2.688
or
FE201 *Cooperative Work Experience . . . 3

Term 5

Ec100 Outline of Economics
or
Ec201 Principles of Economics 3
6.976 Data Communications 2
6.964 COBOL III 5
6.971 OS Concepts and Facilities 3

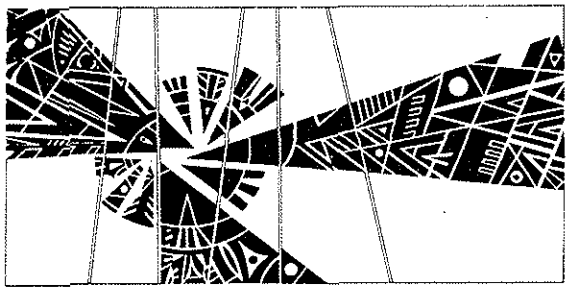
Select One:
Business Elective
or
2.687 or
FE201 *Cooperative Work Experience . . . 3

Term 6

6.945 Systems Analysis 3
6.988 RPG II for Programmers 3
Programming Elective 3
Social Science Elective 3

Select One:
Business Elective
or
2.687, 2.688
or
Fe201 *Cooperative Work Experience . . . 3

*Students are eligible for CWE only if they have a grade average of 2.5 or better in all data processing courses completed and have the recommendation of the CWE instructor-coordinator for computer programming.



CRIMINAL JUSTICE

This area of study offers an occupational preparatory curriculum designed for individuals who desire a career in criminal justice.

Students may select one of five options: criminal justice administration, corrections, law enforcement, law enforcement technician (criminalistics), and security systems management.

The criminal justice program also provides the opportunity for those already employed in criminal justice agencies to improve their compentency and to develop a broader understanding of their role in society.

The program has been developed in cooperation with the State Department of Education and the Board on Police Standards and Training. Financial assistance, in the form of grants and/or loans, is available for requirements, students are awarded an Associate in Science degree.

Students may enter the program any term and complete the program within two years of full-time study. Courses are scheduled to accommodate the working student who may attend classes on a part-time basis.

Law Enforcement Technician Option

I. General Education Requirements (34 hours)

	English/Communication Skills	
	Speech	3
	Writing	6
	Math/Science	4
	P.E./Health	3
	Social Science/Humanities	18
		34

II. Professional Core Course Requirements (26 hours)

CJ100	Survey of the Criminal Justice System	3
CJ101	Introduction to Criminology	3
CJ110	Inroduction to Law Enforcement	3
CJ140	Introduction to Criminalistics	5
CJ201	Juvenile Delinquency	3
JC210	Introduction to Criminal Investigation	3
CJ220	Introduction to Substantive Law	3
CJ223	Rules of Evidence	3
		26

III. Option Requirements (28 hours)

Bi103	General Biology	4
Ch204	General Chemistry	5
Ch205	General Chemistry	5
Ch206	General Chemistry	5
Ch226	Organic Chemistry	5
Ch227	Organic Chemistry	5
		29

IV. Professional Core Course Electives (select 9 hours)

CJ112	Traffic and Patrol	3
CJ143	Personal Identification	3
CJ200	Introduction to Community Relations	3
CJ203	Issues in Criminal Justice	3
CJ204	Seminar in Criminal Justice	3
CJ211	Criminal Investigation II	3
CJ215	Criminal Justice Administration	3
CJ216	Criminal Justice Management	3
CJ218	Police Personnel Seminar	3
CJ221	Criminal Law II	3
CJ228	Moot Court	3
CJ240	Introduction to Legal Medicine	3
CJ241	Introduction to Toxicology	3
CJ242	Introduction to Firearms Identification	3
CJ244	Questioned Documents	3
	Total credit hours required	97

Law Enforcement Option

I. General Education Requirements (34 hours)

	English/Communication Skills	
	Speech	3
	Writing	6
	Math/Science	4
	P.E./Health	3
	Social Science/Humanities	18
		34

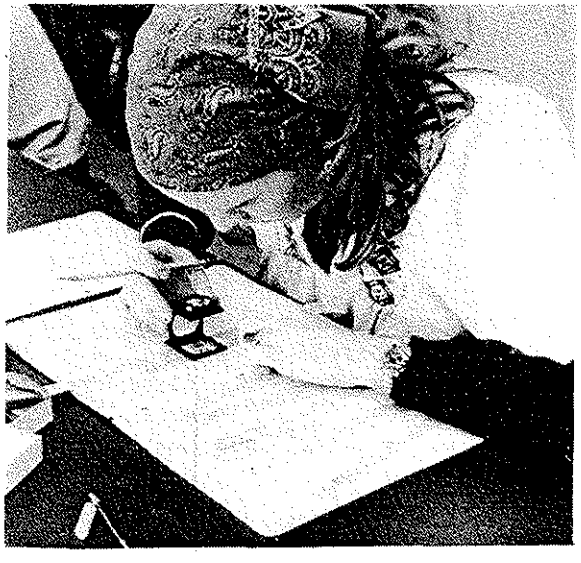
II. Professional Core Course Requirements (26 Hours)

CJ100	Survey of Criminal Justice System	3
CJ101	Introduction to Criminology	3
CJ110	Introduction to Law Enforcement	3
CJ140	Introduction to Criminalisttics	5
CJ201	Juvenile Delinquency	3
CJ210	Introduction to Criminal Investigation	3

CJ220	Introduction to Criminal Investigation	3
CJ223	Rules of Evidence	3
		26

III. Option Requirements (21 hours)

CJ200	Introduction to Community Relations	3
CJ204	Seminar in Criminal Justice	3
CJ215	Criminal Justice Administration	3
CJ221	Criminal Law II	3
CJ217	Introduction to Constitutional Law	3
CJ228	Moot Court	3
CJ230	*Introduction to Juvenile* Corrections	3
		21



IV. Professional Course Electives (21 hours)

CJ112	Traffic and Patrol	3
CJ121	Oregon Criminal Code	3
CJ131	Introduction to Penology	3
CJ132	Introduction to Parole and Probation	3
CJ143	Personal Identification	3
CJ203	Issues in Criminal Justice	3
CJ215	Criminal Justice Administration	3
CJ216	Criminal Justice Management	3
CJ230	Introduction to Juvenile Corrections	3
CJ231	Introduction to Corrections Process	3
CJ232	Introduction to Corrections Casework	3
CJ240	Introduction to Legal Medicine	3
CJ241	Introduction to Toxicology	3
CJ242	Introduction to Firearms Identification	3
CJ244	Questioned Documents	3
	Total credit hours required:	96

Criminal Justice Administration Option

I. General Education Requirements (34 hours)

English/Communication Skills	
Speech	3
Writing	6
Math/Science	4
P.E./Health	3
Social Science/Humanities	18
	34

II. Professional Course Electives (21 hours)

CJ100	Survey of the Criminal Justice System	3
CJ101	Introduction to Criminology	3
CJ110	Introduction to Law Enforcement	3
CJ140	Introduction to Criminalistics	5
CJ201	*Juvenile Delinquency*	3
CJ210	Introduction to Criminal Investigation	3
CJ220	Introduction to Substantive Law	3
CJ223	Rules of Evidence	3
		26

III. Option Requirements (15 hours)

CJ200	Introduction to Community Relations	3
CJ215	Criminal Justice Administration	3
CJ221	Criminal Law II	3
CJ227	Introduction to Constitutional Law	3
CJ231	Introduction to Corrections Process or	
CJ230	Introduction to Juvenile Corrections	3
		15

IV. *Professional Course Electives* (select 21 hours)

CJ112	Traffic and Patrol	3
CJ121	Oregon Criminal Code	3
CJ131	Introduction to Penology	3
CJ132	Introduction to Parole and Probation	3
CJ143	Personal Identification	3
CJ203	Issues in Criminal Justice	3
CJ204	Seminar in Criminal Justice	3
CJ216	Criminal Justice Management	3
CJ218	Police Personnel Seminar	3
CJ228	Moot Court	3
CJ230	Introduction to Juvenile Corrections	3
CJ213	Introduction to Corrections Process	3
CJ232	*Introduction to Corrections* Casework	3
CJ240	Introduction to Legal Medicine	3
CJ241	Introduction to Toxicology	3
CJ242	Introduction to Firearms Identification	3
CJ244	Questioned Documents	3
	Total credit hours required:	96

Corrections Option

I. General Education Requirements (36 hours)

	English/Communication Skills	
	Speech	3
	Writing	6
	Math/Science	4
	P.E./Health	3
	Social Science/Humanities	18
		34

II. Core Course Requirements (21 hours)

CJ100	Survey of Criminal Justice System	3
CJ101	Introduction to Criminology	3
CJ110	Introduction to Law Enforcement	3
CJ201	Juvenile Delinquency	3
CJ210	Introduction to Criminal Investigation	3
CJ220	Introduction to Substantive Law	3
CJ223	Rules of Evidence	3
		21

III. Optional Requirements (21 hours)

CJ131	Introduction to Penology	3
CJ132	Introduction to Probation and Parole	3
CJ215	Criminal Justice Administration	3
CJ227	Introduction to Constitutional Law	3
CJ230	Introduction to Juvenile Corrections	3
CJ231	Introduction to Corrections Process	3
CJ232	Introduction to Corrections Casework	3
		21

IV. Professional Course Electives (select 21 hours)

CJ121	Oregon Criminal Code	3
CJ140	Introduction to Criminalistics	5
CJ200	Introduction to Community Relations	3
CJ203	Issues in Criminal Justice	3
CJ204	Seminar in Criminal Justice	3
CJ216	Criminal Justice Management	3
CJ221	Criminal Law II	3
CJ228	Moot Court	3
CJ240	Introduction to Legal Medicine	3
CJ241	Introduction to Toxicology	3
	Total credit hours required:	97

Security Systems Management Option

I. General Education Requirements (34 hours)

	English/Communication Skills	
	Speech	3
	Writing	6
	Math/Science	4
	P.E./Health	3
	Social Science/Humanities	18
		34

II. Professional Core Course Requirements (26 hours)

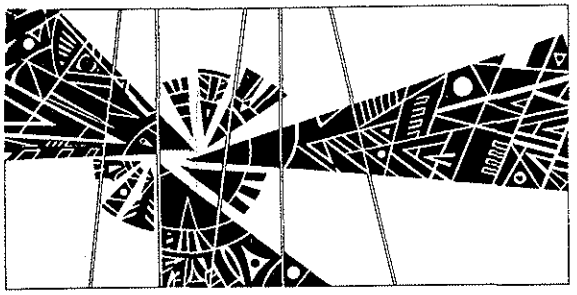
CJ100	Survey of the Criminal Justice System	3
CJ101	Introduction to Criminology	3
CJ110	Introduction to Law Enforcement	3
CJ140	Introduction to Criminalistics	5
CJ201	Juvenile Delinquency	3
CJ210	Introduction to Criminal Investigations	3
CJ220	Introduction to Substantive Law	3
CJ223	Rules of Evidence	3
		26

III. Option Requirements (21 hours)

CJ150	Introduction to Security Systems	3
CJ151	Industrial Security	3
CJ152	Retail Security	3
CJ250	Security Systems	3
CJ252	Educational Security	3
CJ254	Transportation Security	3
CJ255	Commercial Security	3
		21

IV. Professional course Electives (select 15 hours)

CJ112	Traffic and Patrol	3
CJ121	Oregon Criminal Code	3
CJ131	Introduction to Penology	3
CJ132	Introduction to Parole and Probation	3
CJ143	Personal Identification	3
CJ203	Issues in Criminal Justice	3
CJ215	Criminal Justice Administration	3
CJ216	Criminal Justice Management	3
CJ230	Introduction to Juvenile Corrections	3
CJ231	Introduction to Corrections Process	3
CJ232	Introduction to Corrections Casework	3
CJ240	Introduction to Legal Medicine	3
CJ241	Introduction to Toxicology	3
CJ242	Introduction to Firearms Identification	3
CJ244	Questioned Documents	3
CJ256	Personnel Screening and Investigation	3
	Total credit hours required:	96



DENTAL ASSISTING

This one-year program provides the technical preparation necessary to qualify for employment in dental offices, laboratories and clinics. The program is accredited by the American Dental Association, Council on Dental Education.

The student receives instruction in assisting the dentist in a variety of capacities in the private office or in a dental health clinic. Selected activities include clinic and field trip experience.

Typical duties include preparation of patients for treatment, mixing restoration materials and dental cement, checking and sterilizing equipment, taking inventory and ordering suplies. Laboratory duties include pouring study models of teeth, casting inlays and exposing and developing x-ray films. As office manager, the dental assistant acts as receptionist, schedules appointments, keeps accounts and records, sends out statements and is responsible for the general appearance of the office.

Prior to graduation, students are required to take an examination for state completion of the requirements in the dental assisting program the student is awarded a certificate of completion. Graduates are eligible to take the national certification examination of the American Dental Assistants Association.

Credit hours required for graduation: 56.

Term 1

Course No.	Course Title	Credit Hour
5.701	Basic Science for Dental Assistants	2
5.405	Dental Anatomy and Physiology	4
5.411	Introductory Concepts in Dental Assisting	4
5.404	Dental Materials & Instrumentation	4
5.415	Dental Sciences I	3

Term 2

5.403	Chairside and Basic Lab Procedures	3
5.416	Dental Science II	4
5.401	Expanded Duties I	1
5.410	Dental Office Management	3
5.408	Principles & Basic Application of Dental Radiology	4

Term 3

5.407	Advanced Lab	4
5.402	Expanded Duties II	1
5.417	Dental Office Practicum I - Last 5 weeks only	3
5.413	Applied Radiography II - First 5 weeks only	1
1.104	Communication Skills	3
5.700	Health Occupations Overview	1
He261	Cardiopulmonary Resuscitation	1

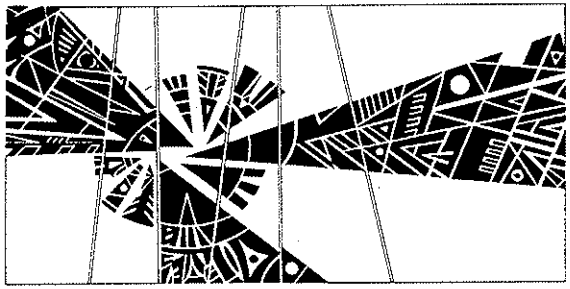
Term 4

5.409	Dental Office Practicum II	5
5.418	Dental Assistant Review	2
Psy111	Processes in Living	3

*Graduation requirements

*1. Minimum of 35 WPM typing required for graduation.

*2. Math competency equivalent to Basic Math 4.200 required for graduation.



DRAFTING TECHNOLOGY

The curriculum is centered around occupational elements that normally cannot be obtained through experience alone—elements such as principles of design, materials and processes, mathematics and physical science concepts as applied to the technical drafting area.

Courses selected and planned to train technicians for drawing preliminary sketches; making layouts from technical information; rendering drawings in pencil, ink and other media; and making overlays and pasteup and detailed drawings of complete and final working drawings.

Common fields of employment for graduates are technical illustration, sheetmetal layout drafing, machine drafting, structural drafting, aeronautical drafting, electronics and electrical drafting, and engineering graphics. A student successfully completing the required 94 credit hours is awarded an Associate in Science degree.

Cooperative work experience in lieu of selected technical courses may be used to complete program requirements. Cooperative work experience requires departmental approval.

Term1

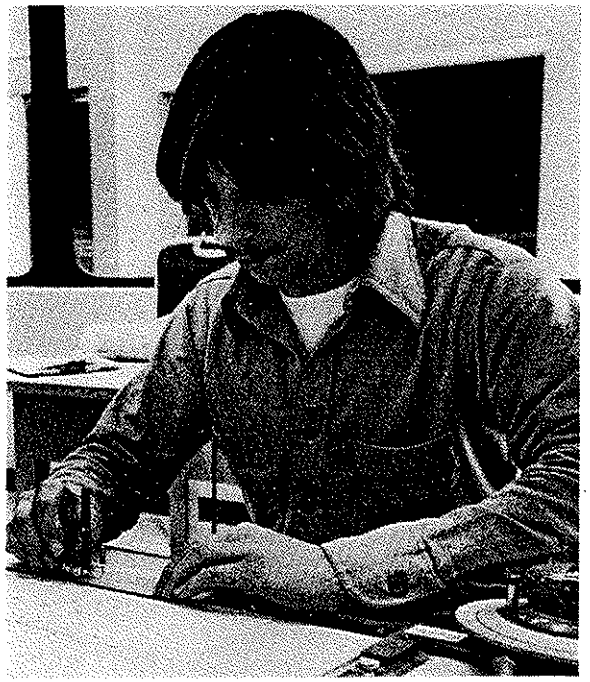
Course No.	Course Title	Credit Hour
1.101	Communication Skills I	3
Psy 100	Introduction to Psychology	3
4.202	Mathematics	3
4.118	Sketching	1
4.221	Machine Drafting	4

Term 2

1.104	Communication Skills II	3
4.222	Machine Drafting	4
6.261	Technical Mathematics	4
6.606	Manufacturing Processes	3
SSS121	Typing I	
	or	
	General Education Elective	3

Term 3

1.106	Technical Report Writing	3
4.111	Structural Drafting	3
4.131	Mapping and Platting	3
6.101	Plane Surveying	4
6.262	Technical Mathematics	4



Term 4

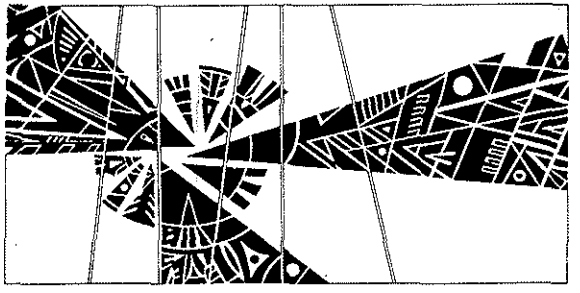
4.126	Drafting Room Computations	1
6.370	Applied Physics	4
6.103	Plane Surveying	4
4.236	Civil Engineering Drafing	3
4.100	Electronics Drafting	
	or	
4.234	Architectural Design	3

Term 5

4.115	Descriptive Geometry	3
Mth151		
or		
4.203	Introduction to Programming/ Basic	3
6.371	Applied Physics	4
4.226	Architectural Drafting	3
4.235	Photogrammetry I	
	or	
4.228	Technical Illustration	
	or	
	Selected course from Mechanical Design Curriculum with consent of instructor and advisor	3

Term 6

4.102	Introduction to Specification	3
4.224	Pipe and Flow Systems Drafting	3
	General Education Elective	3
	Select Two:	
4.227	Architectural Drafting	3
4.229	Technical Illustration	3
4.237	Photogrammetry II	
	or	
	Selected course from mechanical design curriculum with consent of instructor and advisor	3



EARLY CHILDHOOD EDUCATION

The early childhood education program is designed to train people as child care aides, assistants and teachers. Many of the courses are excellent electives for parents or other who work with children.

The two-year program leads to an Associate in Science degree. National trends indicate increasing employment opportunities, as greater understanding of the importance of early development increases.

Graduates may work in nursery schools, kindergartens, Head Start programs, day care centers and as paraprofesional members of teams in public schools.

A certificate of completion in early childhood education may be granted upon successful completion of a specialized four term curriculum.

Associate in Science degree requirement: 95 credit hours. Certificate of completion requirement: 60 credit hours.

Term 1

Course No.	Course Title	Credit Hour
7.119	Development in Childhood I	3
7.129	Introduction to Early Childhood Education	3
1.101	Communication Skills	
	or	
Wr121	English Composition	3
Psy100	Introduction to Psychology	
	or	
Psy201	General Psychology	3
7.131	Observing and Recording in the Preschool	3

Term 2

7.120	Development in Childhood II	3
7.137	Personal Dynamics	3
7.132	Observing and Guiding Behavior	3
1.104	Communication Skills	
	or	
Wr122	English Composition	3
Psy101	Psychology of Human Relations	
	or	
Psy202	General Psychology	
	or	
Psy111	Processes in Living	3

Term 3

7.115	Child Nutrition	
	or	
FN225	*Nutrition*	3
7.136	Creative Activities	3
7.134	Supervised Field Experience I	3
	Physical Education Elective	1
	*General Education Elective	5
He264	Childhood Emergencies (valid First Aid card required as prerequisite)	1

Term 4

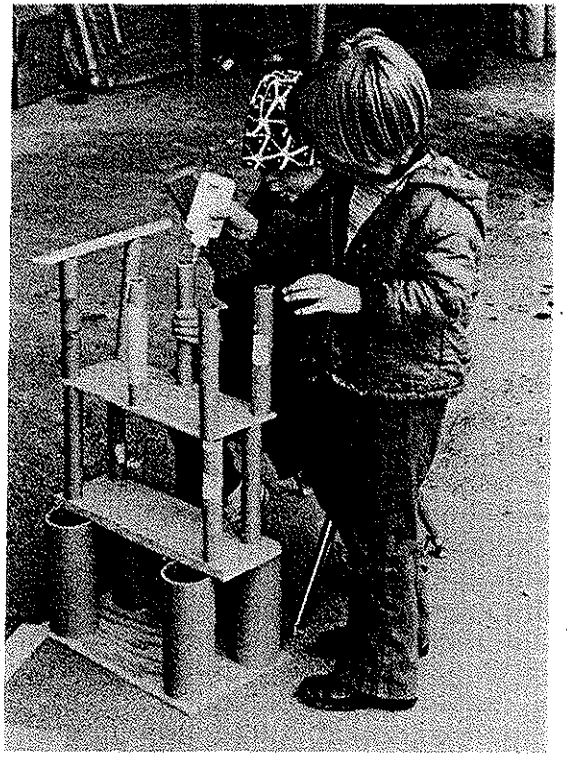
7.117	Children's Literature	3
7.123	Environments for Young Children	3
7.127	Family Living	
	or	
Fl222	Partner Relationships	3
7.135	Supervised Field Experience II	4
	*General Education Elective	3

Term 5

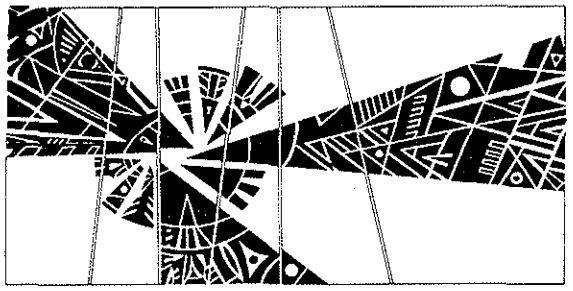
7.125	The Exceptional Child	3
7.130	Music for Young Children	3
7.124	*Learning Experiences for* Young Children	3
7.121	Directed Participation I	7

Term 6

7.126	Home, School, Community	3
7.113	Administration of Child Care Centers	3
7.122	Directed Participation II	8
	*General Education Elective	3



*Suggested electives: Personal Health, Art, Spanish, Speech, Ethnic History, Sociology, Cooperative Work Experience, Consumer Finance, Science.



EDUCATIONAL AIDE

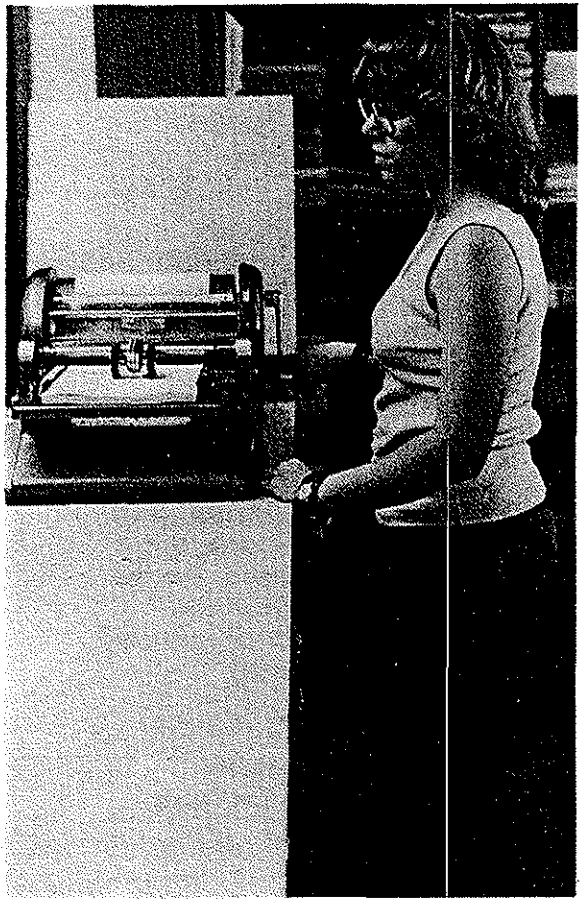
For students interested in careers in education, Chemeketa Community College provides a variety of options including a one-year certificate program for general classroom aides and two-year programs at specific levels such as kindergarten, elementary, secondary and specific areas including handicapped, bilingual and vocational education. For students who wish to explore education as a career, one term orientation courses are offered.

The general purpose of the education aide program is to prepare graduates to perform those roles and functions commonly expected of educational aides in order to fill the needs of local school districts for trained paraprofessionals. The program is competency based, which means that the specific knowledge, skills and attitudes to be acquired and demonstrated by the graduates are objectively defined and publicly specified.

The curriculum consists of a required core for all programs, additional requirements for each of the specialties and a number of elective courses related to education. All of the courses are designed to allow students to advance on a career ladder, which could lead to a Baccalaureate Degree and professional teaching certificate.

The one-year (certificate) program will provide competencies in four general areas: instructional (planning, instructing, assessing); non-instructional support (audio-visual, first aid, clerical); human relations (attitudes, behavior); communication/computation (reading, writing, speaking, math).

The two-year programs provide the more advanced and specialized skills required to work with students at a particular grade level (kindergarten, elementary, secondary) or who have unique learner characteristics (bilingual, handicapped), or in vocational-technical education.



Educational Aide Program

First Year

A. Core Courses

Term 1

Course No.	Course Title	Credit Hour
Ed207	Seminar: Education Aide Orientation	3
Ed111	Contemporary Education	3
Ed209	Practicum: Introductory Observation and Experience	3
	Electives	5-8

Term 2

Ed133	Instructional Media and Materials	3
Ed210	Practicum	6
Ed110	Psychology of Learning	3
	Electives	3-6

Term 3

Ed210	Practicum	6
He252	First Aid	3
	Electives	6-9

B. Electives in the program may be chosen from the following courses.

Ed112	School and Community	3
Ed123	Tutoring and Instructional Practices for Paraprofessionals I	3
Ed124	Tutoring and Instructional Practices for Paraprofessionals II	3

Ed128	School Office Skills and Procedures	3
Ed129	Introduction to Librarianship	3
Ed131	Teaching Techniques	3
Ed132	Evaluation Techniques	3
SS121	Typing	3

C. Students in the education aide program are required to demonstrate competencies in writing, speaking and mathematics equivalent to the following courses:

1.101	Communication Skills I	
	or	
Wr121	English Composition	3
1.104	Communication Skills II	
	or	
Sp111	Fundamentals of Speech	3
4.200	Mathematics	3

Second Year Options for Education Aide Program

Students in the second year of the program will be expected to complete the general courses for all options (9 credits) and at least 15 credits in any option they select, including at least 6 credits in Practicum Experience, as well as 18 hours of general education courses.

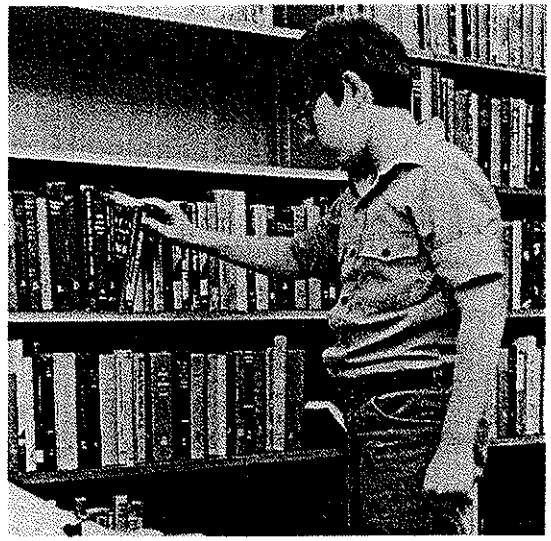
General Courses for all options:

Course No.	Course Title	Credit Hour
Ed251	Introduction to Special Learner Problems	3
7.125	Exceptional Child	3
5.442	Community Resources	3

A. Classroom Aide

Kindergarten/Lower Elementary

Mth191	Math for Elementary Teachers	3
Mth192	Math for Elementary Teachers	3
Mth193	Math for Elementary Teachers	3
Ed221	PE/Playground Activities	3
7.136	Creative Activities	3
7.119	Development in Childhood I	3
7.120	Development in Childhood II	3
7.123	Environments for Young Children	3



7.124	Learning Experiences for Young Children	3
7.130	Music for Young Children	3
7.117	Children's Literature	3
7.140	Kindergarten Education	3
Ed210	Practicum	6-18

Junior/Senior High

Psy299	Growth and Development	3
	Social Science Sequence	9
	Humanities Sequence	9
Ed210	Practicum	6-18

B. Handicapped/Disadvantaged Learner Aide

Deaf/Blind

1.116	Manual Communication with the Deaf I	3
1.125	Manual Communication with the Deaf II	3
1.126	Manual Communication with the Deaf III	3
1.127	Conversational Sign I	3
1.128	Beginning Interpreting for the Deaf	3
1.129	Studies in Deafness	3
Ed210	Practicum	6-18

Bilingual/Bicultural

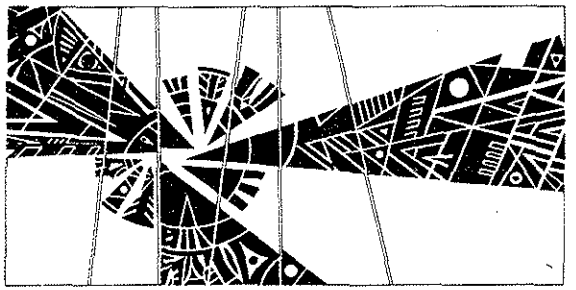
Hst257	Ethnic History	3
Hst258	Ethnic History	3
Hst259	Ethnic History	3
Eng256	Minority Literature	3
Eng257	Minority Literature	3
Eng258	Minority Literature	3
	Language	9-12
Ed255	Human Understanding	3
Ed210	Practicum	6-18

Mental Retardation

	Introduction to Mental Retardation (Three-term sequence)	9
Ed210	Practicum	6-18

C. Vocational-technical Education Aide

Ed281	Intro to Vocational/Technical Education	3
Ed292	Occupational Analysis and Curriculum Development	3
Ed210	Practicum	6-18



ELECTROMECHANICAL TECHNOLOGY

This curriculum is designed to provide the depth of understanding and technical knowledge required for occupations in the broad electromechanical field. Practical laboratory training provides application of theoretical technical, mathematical and science courses taken concurrently.

Electromechanical technicians may assist in design and development of electromechanical devices or systems; operate as field engineers; design and install industrial control systems; and operate, maintain or repair EM equipment utilizing their technical knowledge and engineering data.

Examples of placement opportunities are in field engineering, research, design, systems, quality control, technical writing, industrial control, automation, sales, engineering, maintenance, technical representation, atomic energy control, instrumentation, medical devices and automatic production.

Cooperative Work Experience in lieu of selected technical courses may be used to complete program requirements. Cooperative work experience requires departmental approval.

Upon completion of required 113 credit hours, students are awarded an associate in science degree.

Term 1

Course No.	Course Title	Credit Hour
6.200	Electrical Theory DC	4
6.194	Engineering Orientation	1
6.261	Technical Mathematics	4
4.124	Basic Drafting for Electronics	2
6.370	Applied Physics	4
1.101	Communication Skills	3

Term 2

6.202	Electrical Theory AC	4
6.138	Engineering Problems	1
6.262	Technical Mathematics	4
6.210	Transistor Fundamentals	4
6.371	Applied Physics	4
1.104	Communication Skills	3

Term 3

6.211	Transistor Circuits	5
6.243	Electromechanical Devices	2
6.244	Electromechanical Shop Practice	2
6.247	Rotating Machines	4
6.195	Properties of Materials	3
	General Education Elective	3

Term 4

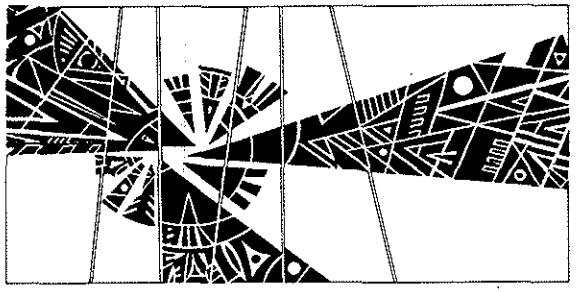
6.267	Digital Applications	3
6.238	Solid State Devices	3
6.196	Fluid Systems	3
6.245	Electromechanical Fabrication	2
6.612	Electromechanical Devices II	4
	General Education Elective	3

Term 5

6.255	Electrical Control Systems	3
6.241	Data Communications	3
6.240	Electronic Data Processing	3
6.218	Industrial Electronics	4
6.269	Computer Programming	3
	General Education Elective	3

Term 6

6.221	Mechanical and Electrical Measuring Principles	3
6.246	Electromechanical Maintenance Procedures	3
6.256	Servo and Regulator Systems	3
6.268	Digital Control Systems	4
6.257	Electrical/Electronic Troubleshooting	3
	General Education Elective	3



ELECTRONIC ENGINEERING

This curriculum offers a broad technical background in electronics, balancing theory understanding with technique capabilities. It is a comprehensive program planned to prepare graduates for a diversity of high-level, specialized technician positions in the electronic industry.

They include research and development, radio and television, microwave station operations and maintenance, calibration, commercial and domestic maintenance and other areas using vacuum tubes and semiconductor circuits. A strong background in electronic theory, math and physics is included to enable the student to handle complex technical work.

The student gains proficiency in the practical application of theory, analyzing, circuits, developing elementary electronic units, working with modern test and measuring equipment, trouble shooting and evaluating operating characteristics of electronic equipment.

Graduate electronic technicians employed in research and development activities usually assist physical scientists or engineers in designing, testing and modifying experimental electronic devices.

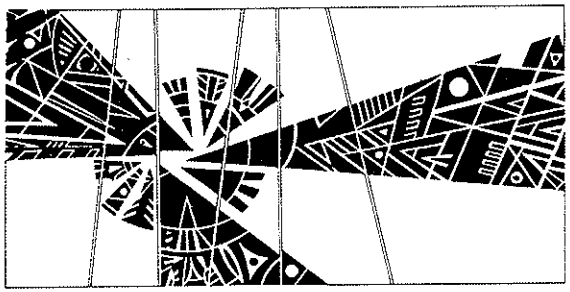
They may be called upon to devise practical solutions to problems of design, select suitable material, determine the best methods of building a piece of equipment and test and evaluate the operating characteristics of the electronic device. They also may be called upon to make necessary modifications in the experimental equipment.

Graduates may gain employment in such occupations as radio communications, technicians (aircraft, etc.), radio operators and dispatchers, electronics technicians, laboratory technicians (electronics), electronic instrument technicians (manufacturing), guided missle technicians, electronic computer technicains, microwave radio technicians, electronic instrument service technicians, industrial electronic technician supervisors, electronic equipment designers and electronic engineering technicians.

Cooperative Work Experience in lieu of selected technical courses may be used to complete program requirements. Cooperative work experience requires departmental approval.

Upon satisfactory completion of the required 113 credit hours, the student is awarded an associate in science degree.

Term 1 Course No.	Course Title	Credit Hour
6.200	Electrical Theory DC	4
6.261	Technical Mathematics	4
4.124	Basic Drafting for Electronics	2
6.275	Introductory Chemistry	4
1.101	Communication Skills	3
6.194	Engineering Orientation	1
Term 2		
6.202	Electrical Theory AC	4
6.138	Engineering Problems	1
6.262	Technical Mathematics	4
6.210	Transistor Fundamentals	4
6.370	Applied Physics	4
1.104	Communication Skills	3
Term 3		
6.206	Electrical Circuits	4
6.211	Transistor Circuits	5
1.106	Report Writing	3
6.266	Technical Mathematics	4
6.371	Applied Physics	4
Term4		
6.212	Electronic Circuit Concepts	4
6.234	Wave Generation and Shaping	3
6.237	Semiconductors	3
6.230	Network Analysis	2
	General Education Elective	3
6.267	Digital Applications	3
Term 5		
4.103	Electrical Drafting	2
6.218	Industrial Electronics	4
6.228	Industrial Television	5
6.240	Electronic Data Processing	3
6.231	Antennas and Transmission Lines	2
	General Education Elective	3
Term 6		
6.216	Advanced Electronic Circuits	2
6.220	Electronic Instruments	2
6.235	Closed Circuit Systems	4
6.248	Advanced Industrial Electronics	3
6.242	Microwaves	3
	General Education Elective	3



ELECTRONICS SERVICING TECHNOLOGY

This curriculum offers the broad technical training, theory and skills development to prepare the student for employment in the electronics servicing fields.

The core program requirements provide basic electronics backgrounds required for the generalist; the options or tracks in the second year offer the student the opportunities to specialize in advanced television-radio servicing, two-way communications servicing, or audio-visual maintenance. Individualized instruction is utilized in many areas of this program.

Three options prepare students for employment in electronics service shops and also qualify persons completing the program to advance or expand into occupations such as technical writing, sales engineering, designing, service training and self employment.

Upon satisfactory completion of the required 96-100 credit hours (depending on which option), the student is awarded and associate of science degree.

Term 1

Course No.	Course Title	Credit Hour
6.200	Electrical Theory DC	4
6.202	Electrical Theory AC	4
6.205	Applied Electronic Calculations	5
1.101	Communication Skills I	3

Term 2

4.263	Electronic Principles	4
6.210	Transistor Fundamentals	4
6.207	Radio Circuits	4
1.104	Communication Skills II	3

Term 3

4.266	Television Principles	5
6.211	Transistor Circuits	5
6.209	Introduction to IC's	4
Psy101	Psychology of Human Relations	3

Term 4

6.238	Solid State Devices	3
6.213	Pulse Fundamentals	3
6.214	Electronic Circuit Practices	4
	General Education Electives	3
	*Electronic Electives	3

Term 5

2.275	Electronic Management Orientation	2
6.215	Digital and Analog Circuits	4
4.274	Logical Troubleshooting	4
	*Electronic Electives	6-8

Term 6

4.272	Solid State Servicing	4
5.513	Multimedia First Aid	1
He261	Cardiopulmonary Resuscitation	1
	*Electronic Electives	10-12

*Note: Electronic electives will depend on the student's major area of study. The proper elective should be chosen from the list of the student's area of study.
Cooperative Work Experience may be taken either in addition to regular course work or in lieu of a course by permission in writing.

Electives for Advanced Radio and Television Servicing Option:

Term 4

Course No.	Course Title	Credit Hour
6.222	Television Circuits	3

Term 5

4.268	Television Servicing	2
6.223	Stereo/Hi-Fi	3
6.224	Changers and Recorders	3

Term 6

6.225	Advanced Television Servicing	5
6.235	Close Circuit Systems	4
6.244	Electromechanical Shop Practice	2

Electives to Communications Option:

Term 4

6.266	Introduction to Communication	3

Term 5

6.231	Antennas and Transmission Lines	2
6.227	Transmitters and Receivers	4

Term 6

6.242	Microwaves	3
6.244	Electromechanical Shop Practice	2
6.229	FCC License Preparation	3
6.232	Two-way Radio Servicing	4

Electives for Audio-Visual Maintenance Option:

Term 4

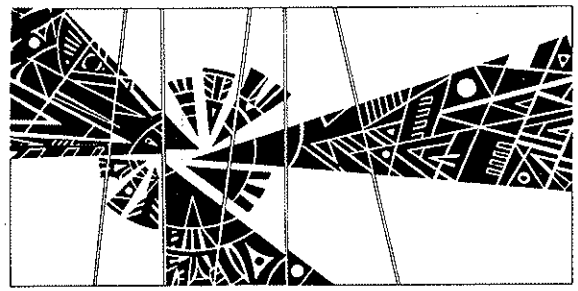
6.233	Introduction to Audio-Visual Equipment	3

Term 5

6.236	Projector Maintenance	4
6.224	Changers and Recorders	3

Term 6

6.235	Close Circuit Systems	4
6.244	Electromechanical Shop Practice	2
6.239	Audio-Visual Maintenance	4



FARM BUSINESS MANAGEMENT

This three-year program is for the farm operator and spouse who lease or manage a farm and keep or have access to a full set of farm financial records.

The farm management records analysis program consists of monthly class meetings and farm visits by the instructor. Instruction focuses on keeping basic farm records, annual computer analysis of each farm business, a cost production summary and the application of analysis information to improving the management and organization of each business.

The tuition covers the instruction and the year-end computer farm business analysis. Contact either the Salem or McMinnville community services office for information (Salem, 399-5135, McMinnville, 472-9482).

Farm Business Management Program of Study

First Year

Farm Management I—Farm Records 9.820.

Overview of farm management skills and family goals, uses of farm records-net worth statements, enterprise record keeping, inventories and depreciation, budgeting farm income and expenses, cash flow projections, business principles used in farm management, credit planning, tax management, closing the account book for analysis and developing a profit and loss statement.

Second Year

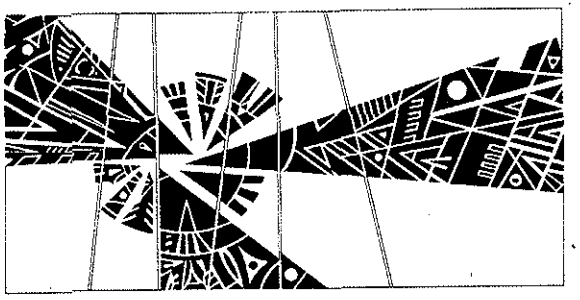
Farm Management II—Farm Business Analysis 9.821.

Income tax and social security, interpreting farm records and analysis, measures of efficiency and business size, crop and livestock costs and return, labor costs and return, capital costs and returns, wills and estate planning, use of computerized farm records system and tax management, closing the accounts for analysis, profit and loss statement, the process of making decisions.

Third Year

Farm Management III—Farm Business Organization 9.822.

Evaluating the farm business, net worth, credit planning and budgeting, optimum production levels, studying income possibilities, developing crop and livestock plans, planning investments in buildings and equipment, purchasing or leasing land, planning non-farm investments, developing alternative farm plans and closing the accounts for analysis.



FIRE PROTECTION TECHNOLOGY

The Chemeketa fire protection curriculum provides two options for persons interested in a career dedicated to protecting life and property from fire. Although these courses are designed primarily for pre-employment, they are very beneficial for occupational enrichment.

The fire suppression option prepares people for the occupation of firefighter. The course work has been accredited by the Oregon Fire Standards and Accreditation Board, to meet the requirements for Firefighter I, II and most of Level III.

The fire prevention insurance risk inspection option is intended to meet the needs of the person wishing to enter the occupation as a fire inspector for public or private employment. Courses from both option relate indirectly to industrial fire safety.

Upon satisfactory completion of 98 required credit hours for the fire suppression option and/or 92 required credit hours for the fire prevention/insurance risk inspection option, a student is awarded and Associate in Science degree.

Fire Suppression Option

Term 1 Course No.	Course Title	Credit Hour
4.200	Mathematics	3
1.101	Communication Skills I	3
5.100	Introduction to Fire Protection	3
5.122	Fire Related Experience	3
PE185	Approved P.E.	1
	General Education Elective	3
Term 2		
4.202	Mathematics	3
1.104	Communication Skills II	3
5.103	Elementary Science for Firefighters	4
5.104	Fire Service Hydraulics	4
5.123	Fire Related Experience	3
PE185	Approved P.E.	1
Term 3		
Psy101	Psychology of Human Relations	3
6.995	Fire Science I	4
5.105	Fire Pump Construction and Operations	3
5.120	Fire Service Rescue Practices	2
5.123	Fire Related Experience	3
PE185	Approved P.E.	1
Term 4		
5.135	EMT I, Part A	2
6.996	Fire Science II	4
5.101	Fundamentals of Fire Prevention	3
5.108	Hazardous Materials I	3
PE185	Approved P.E.	1
	*Technical Electives (5.151 and 5.125 recommended)	6
Term 5		
5.136	EMT I, Part B	3
5.109	Hazardous Materials II	3
5.131	Building Construction for Fire Suppression	3
PE185	Approved P.E.	1
	*Technical Electives (5.126, 5.116 and 5.106 recommended)	6
Term 6		
1.106	Technical Report Writing	3
PE185	Approved P.E.	1
	*Technical Electives (5.127, 5.112, 5.107, 5.113 and 5.137 recommended)	9

*Technical Electives: Fire Protection Systems 5.106; Fire Investigation 5.107; Fire Training Program and Techniques 5.110; Fire Insurance Principles and Grading Schedules 5.111; Fire Department Organization and Management 5.112; Firefighting Tactics and Strategy 5.113; Fire Codes and Ordinances 5.116; Water Distribution Systems 5.117; Fire Related Experience 5.125, 5.126, 5.127; EMT Basic Emergency Medical Practicum 5.137; Natural Cover Fire Protection 5.151.

Fire Prevention/Insurance Risk Inspection Option

Term 1		
4.200	Mathematics	3
1.101	Communication SKills I	3
5.100	Introduction to Fire Protection	3
5.160	Fire Prevention Fundamentals	3
5.164	Building Construction—Fire Protection	3
Term 2		
4.202	Mathematics	3
1.104	Communication Skills II	3

5.103	Elementary Science for Firefighters	4
5.106	Fire Protection Systems/ Extinguishers	3
5.116	Fire Codes and Ordinances	3

Term 3

Psy101	Psychology of Human Relations	3
5.107	*Fire Investigation*	3
5.162	Fiefighters Law	1
5.163	Water Supplies	1
6.995	Fire Science I	4
	Related Experience	3

Term 4

5.108	Hazardous Materials I	3
6.116	Building Code I	3
6.996	Fire Science II	4
	General Education Elective	3
	Related Experience	3

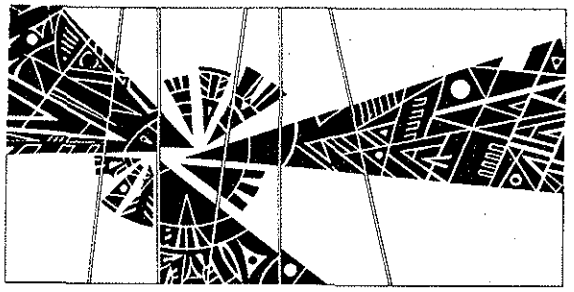
Term 5

5.109	Hazardous Materials II	3
5.161	Fire Prevention Inspection	3
5.165	Industrial Fire Protection	3
6.119	Building Code II	3
	Related Experience	

Term 6

1.106	Technical Report Writing	3
5.166	Advanced Detection & Prevention System	3
5.167	Fire Insurance Fundamentals	3
6.120	Building Codes and U.M.C.	3
	*Technical Elective	3

*Technical Electives: Fire Training Program & Techniques 5.110; Fire Insurance Principles & Grading Schedules 5.111; Fire Department Organization & Management 5.112; Fire-fighting Tactics & Strategy 5.113; Water Distribution Systems 5.117; Natural Cover Fire Protection 5.151; Fire Related Experience 5.122, 5.123, 5.124, 5.125, 5.126 and 5.127.



HUMAN RESOURCE TECHNOLOGY
(Mental Health Technology)

The human resource technology program combines academic course work with five quarters (25 credits) of field placement experiences. Many of the courses in the curriculum are transferable to Oregon's four-year colleges. Upon successful completion of the curriculum, the student has developed basic skills of observation, interviewing and counseling (individual and group) and gained a working knowledge of various health, social and welfare services offered by the community.

This program prepares the student to accept paraprofessional level positions with many human service agencies in Oregon.

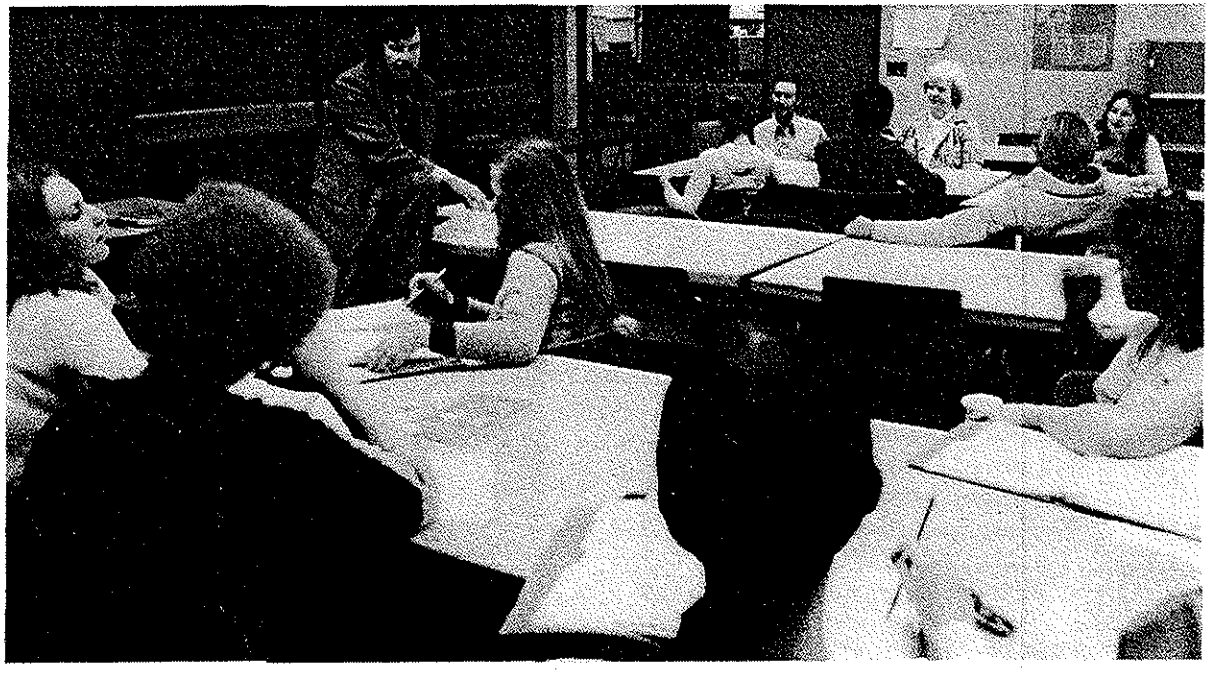
Applicants must meet admission criteria for both the college and the human resource technology program.

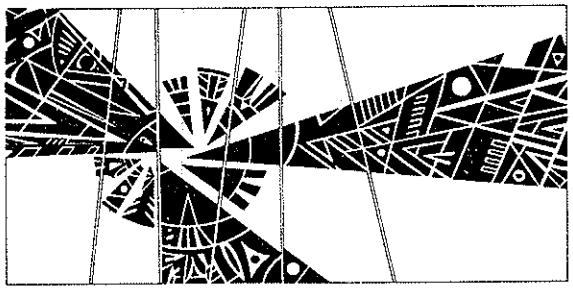
The Associate in Science degree requires 95 credit hours.

Term 1 Course No.	Course Title	Credit Hour
Psy201	General Psychology	3
Sp111	Fundamentals of Speech	3
Psy299	Growth and Development	3
5.436	Human Resource Technology I	3
5.442	Community Resources	3
	HRT Practicum Seminar I	1
Term 2		
Psy202	General Psychology	3
He261	Cardiopulmonary Resuscitation	1
Wr121	English Composition	3
5.437	Human Resource Technology II	3
5.445	Practicum Experience	5
	HRT Practicum Seminar II	1
Term 3		
Psy203	General Psychology	3
Wr122	English Composition	3
5.438	Human Resource Technology III	3
5.445	Practicum Experience	5
	HRT Practicum Seminar III	1
Term 4		
	*Contemporary Issues Elective	3
	**Health Education Electives	3
5.439	Human Resources Technology IV	3
5.445	Practicum Experience	5
Soc204	General Sociology	3
	HRT Practicum Seminar IV	1
Term 5		
	Math or Science Elective	3
5.440	Human Resource Technology V	3
5.445	Practicum Experience	5
Soc205	General Sociology	3
	HRT Practicum Seminar V	1
Term 6	**Course Title**	**Credit Hour**
5.525	Gerontology	3
5.441	Human Resource Technology VI	3
5.445	Practicum Experience	5
Soc206	General Sociology	3
	HRT Practicum Seminar VI	1

*Hst257, 258, 259; WS101, 102, 103; Psy206; Anth207, 208, 209; Psy111; Soc 222.

**He250, He199A, He109B, He199D (proposed course).



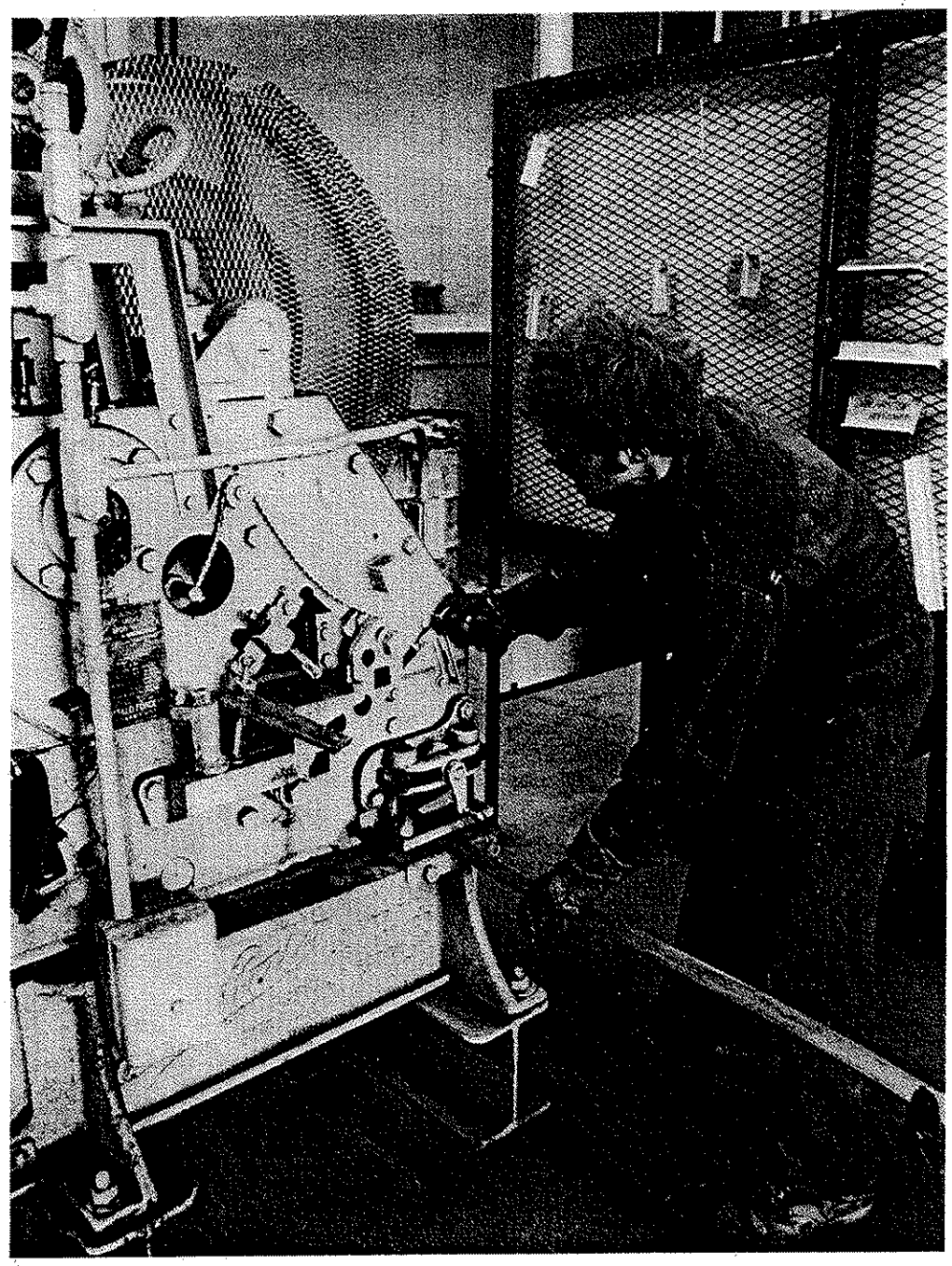


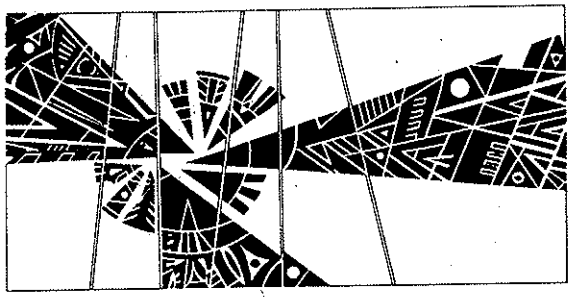
INDUSTRIAL TECHNOLOGY

Chemeketa Community College grants an Associate in Science degree in industrial technology. Credit may be earned for the on-the-job training and the related instruction. The degree is awarded upon attainment of the following requirements:

1. Be a journeyman level tradesman in a skilled occupation.
2. Complete a minimum of 30 credit hours at Chemeketa Community College.
3. Complete at least 18 credit hours of general education courses.
4. Complete at least 6 credit hours of communication skills.
5. Compile a total of at least 90 credit hours. Up to 45 credit hours may be awarded for journeyman status and 27 credit hours may be awarded for trade related training.

For more information, please contact the Work Related Experience office, 399-5026.





INSURANCE TECHNOLOGY

The insurance curriculum provides men and women with a broad knowledge of the insurance industry and a general knowledge of business. It is designed for persons who seek a lifetime career of serving the needs of the insurance-buying public.

People who have the technical traning offered in this program may be able to serve the consumer in many capacities. Employment opportunities exist as salespersons, in office operations and administration, claims work, entry level risk management positions and in certain government offices.

Students completing this program will receive an Associate in Science degree; 102 credit hours are required for graduation.

The curriculum also provides continuing education for persons active in the insurance industry and allows them an opportunity to reinforce and sharpen their knowledge and skills. Insurance Institute of America courses and other society-sponsored courses assist insurance personnel with the professional preparation required for a successful career.

Math requirements: Applied Business Mathematics 6.918 is the minimum achievement level required for graduation. The sequence of courses leading to this proficiency includes Mathematics 4.200, Business Mathematics 4.201 and Applied Business Mathematics 6.918. Initial placement is based on a math proficiency test. Transferable Math 10 and Math 095 or a higher level will also fulfill the math requirements.

English requirements: Business Communications BA214 is the minimum achievement level required for graduation. The sequence of courses leading to this proficiency includes Basic Writing Wr40, Business English 2.673, and Business Communications BA214. Initial placement is based on an English proficiency test. Wr40 does not count toward graduation requirements. Transferable English Composition Wr121, 122 and 123 will also fulfill the English requirement.

A maximum of six credit hours of Cooperative Work Experience may also be applied toward graduation.

An agreement between Oregon College of Education and Chemeketa Community College provides for the transfer and acceptance of 45 credit hours of selected vocational-technical course credits from this insurance technology program to apply toward the BA/BS degree curriculum in interdisciplinary studies. This transfer credit is possible only for students who have been formally admitted to Oregon College of Education.

Course No.	Course Title	Credit Hour
Term 1		
	English Variable	
	or	
	General Education Elective	3
	Math Variable	3
BA211	Financial Accounting I	
	or	
6.923	Accounting Procedures I	4
BA101	Business Environment	4
BA241	Risk and Insurance	3
Term 2		
	English Variable	
	or	
	General Education Elective	3
	Math Variable	3
SS121	Typing	3
2.119	Insurance—Property and Casualty	3
Ec100	Outline of Economics	
	or	
Ec201	Principles of Economics	3
Psy101	Psychology of Human Relations	3
2.344	Insurance Occupational Survey Seminar	1

Term 3

2.343	Insurance Principles—Life and Health	3
BA214	Business Communications	3
2.342	IIA—Insurance 21	4
BA226	Business Law I	3
	*Approved Elective	3

Term 4

2.120	IIA—Insurance 22	4
2.222	Underwriting—Life and Health	3
BA131	Introduction to Data Processing	
	or	
BA206	Business Management Principles	3
BA238	Salesmanship	3
Sp220	Business and Professional Speaking	
	or	
Sp111	Fundamentals of Speech	3

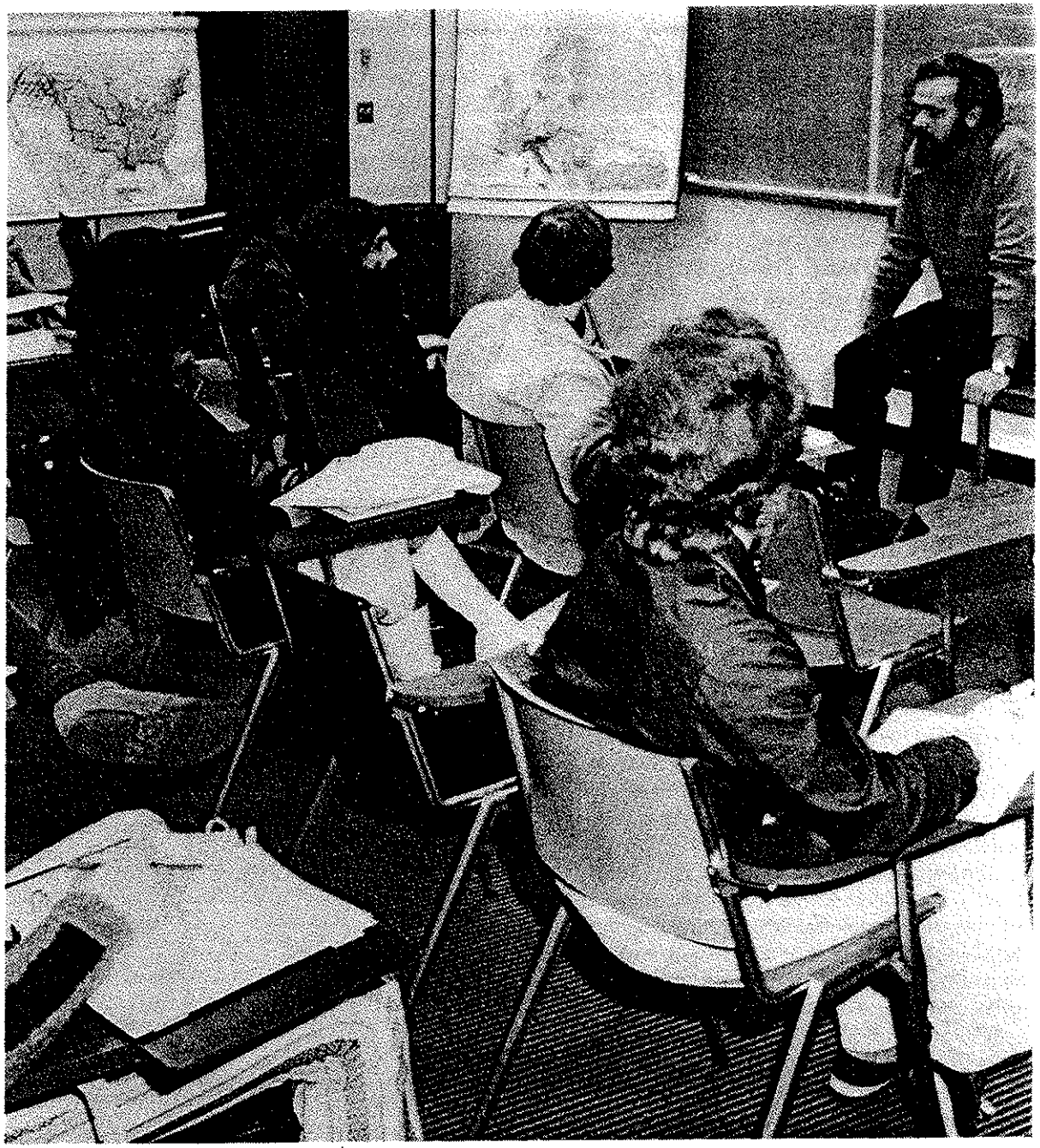
Term 5

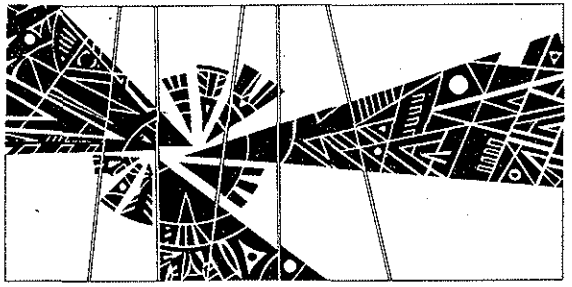
2.121	IIA—Insurance 23	4
2.225	Group and Social Insurance	3
2.223	Rating and Underwriting—Property and Casualty	3
2.230	Investments	3
	Cooperative Work Experience	
	or	
	General Education Elective	3

Term 6

2.124	Property Loss Adjusting ADJ31	4
2.231	Risk Management Analysis	3
2.226	Regulations and Laws	2
PS203	State and Local Government	
	or	
Soc204	General Sociology	3
FE201	Cooperative Work Experience	
	or	
2.687	Approved Elective	3
	Approved Elective	3

*Electives must be approved by your advisor.





LOWER DIVISION TRANSFER

Chemeketa offers a comprehensive slate of lower division transfer courses which serve two basic purposes.

First, they are incorporated into many of the vocational-technical curricula. In addition to providing knowledge necessary to the occupation for which the student is preparing, they increase the flexibility of this preparation by building a repertoire of credits which will transfer to a four-year school should the student's career plans turn this direction.

Second, the lower division courses are offered to students who are not interested in majoring in a technical field but who are interested in building a broad base of knowledge by completing as many lower division requirements as possible—which, if desired, may be transferred to a university or liberal arts college.

Students wishing to transfer to a four-year school may accumulate up to 108 transferable credits at Chemeketa. Any credits beyond this total must be earned at a four-year institution. Transferable credits obtained at a college other than Chemeketa must be included in this total.

In many fields, Chemeketa Community College offers all or most of the lower division courses required by baccalaureate level colleges and universities. Every attempt is made to keep offerings current with those of Oregon's four-year institutions.

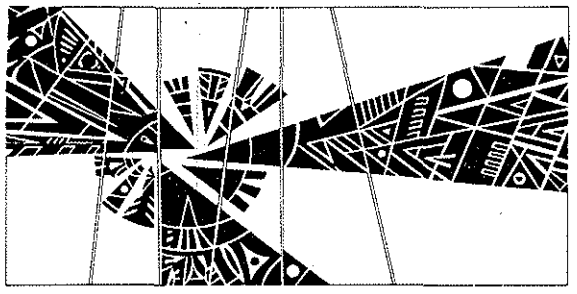
However, the college is not required to offer every course listed. Some courses will be offered only if adequate staff and facilities are available or on an alternate year basis due to student interest.

Students taking 93 hours of lower division courses may qualify for the associate in arts degree. Up to 12 vocational hours may be applied toward the degree, but students should be aware that vocational credits may not transfer to a four-year institution.

The requirements for the AA degree are as follows: six credit hours in English composition, one term in personal health, five terms of physical education (partial or total waiver is available under certain circumstances), one sequence in humanities (English composition sequence does not meet this requirement), one sequence in math or science, one sequence in social science and one additional sequence in humanities, math, science or social science.

A manual title *Transfer Curricula,* published by the Oregon State System of Higher Education, lists all transfer program requirements. The manual is available through Chemeketa counselors and advisors, in the Chemeketa library and in the office of many high school counselors.

College transfer students should contact the college or university to which application for admission will be made to discover the specific lower division requirements in a particular major field. Chemeketa counselors and advisors will assist in building the required program.



MACHINE SHOP

This program teaches students the knowledge and skills necessary to work in a machine shop or related occupation. It includes hands-on practice with machine tools as well as learning about materials, drafting and printreading, and sketching and layout practices.

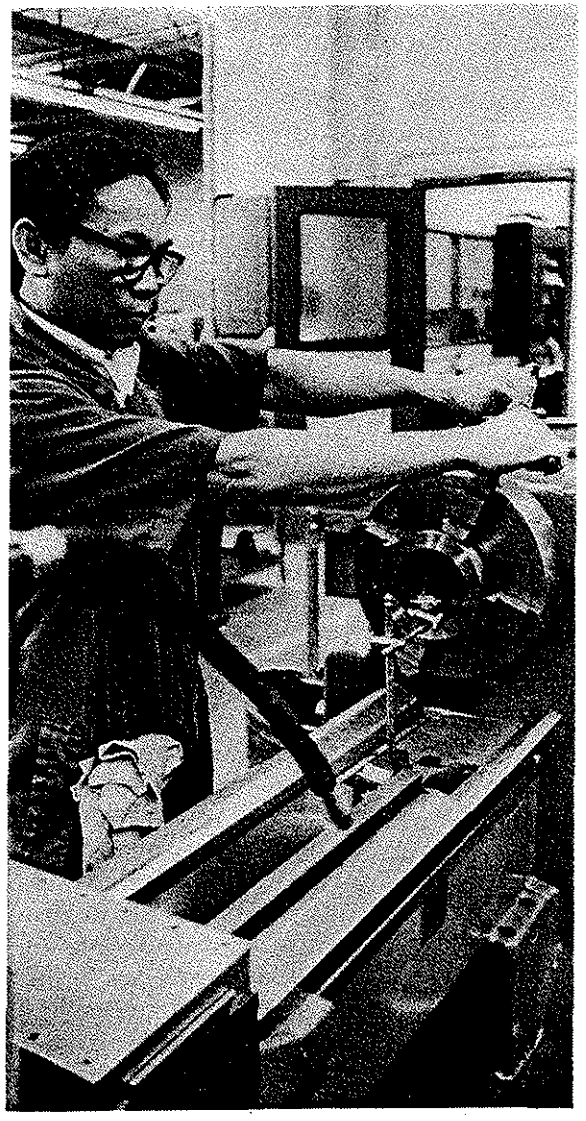
A machinist sets up and operates all machine and shop tools, including drill presses, engine and turret lathes, milling machines, and grinders. He must work from blueprints or sketches to produce mechanical items in varied materials. This requires mastery of bend and layout operations, making and using jigs, fixtures, and patters, and the use of automated control equipment.

Positions for which the graduate machinist may qualify include job shops, production, specialty, maintenance, tool setup, and layout work.

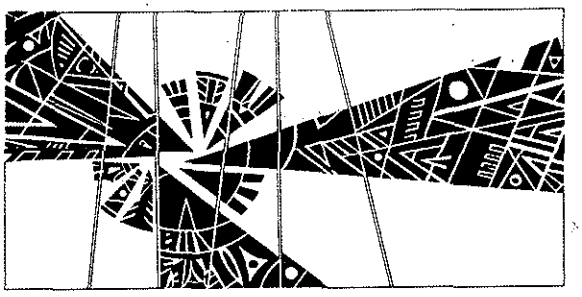
The program includes instruction in written and verbal communication skills that employers want their machinists to have.

Upon satisfactory completion of the 103 required credit hours, the student is awarded an Associate in Science degree.

Term 1 Course No.	Course Title	Credit Hour
4.200	Mathematics	3
1.101	Communication Skills I	3
Psy100	Introduction to Psychology	3
4.807	Machine Tool Processes I	4
4.253	Shop Safety	1
4.810	Shop Drawing & Layout I	3
Term 2		
4.202	Mathematics	3
4.300	Practical Physics	4
4.808	Machine Tool Processes II	4
4.150	Welding	2
4.811	Shop Drawing & Layout II	2
Term 3		
4.204	Mathematics	3
1.104	Communication Skills II	3
4.809	Machine Tool Processes III	5
4.302	Practical Physics	4
4.170	Industrial Materials and Processes	3
Term 4		
4.171	Mechanical Systems	4
4.820	Machine Shop Problems	3
4.841	Machine Shop Practices	6
4.173	Hydraulic and Pneumatic Systems	3
	General Education Elective	3
Term 5		
4.176	Hydraulic and Pneumatic Systems II	3
4.174	Metal Fabrication and Finishing	4
4.833	Advanced Lathe Practices	4
4.837	Advanced Milling Machine Practices	3
	General Education Elective	3



Term 6		
4.824	Machine Shop Automation	2
4.845	Job Machining Practices	8
4.847	Tool and Fixture Design and Application	4
4.500	Employer-Employee Relations	3



MECHANICAL DESIGN

The mechanical design technology program offers a comprehensive drafting curriculum along with a practical approach to engineering concepts.

Courses are offered to train technicians in the areas of machine, electronics, pipe and flow systems, control systems and sheet metal drafting. Instruction in design stresses the use of manufacturers' technical catalogs, technical handbooks and practical application of concepts from theoretical and mathematical subjects which are taken concurrently.

The student also receives instruction in engineering concepts such as specification writing, material selection, systems design and sizing of elements based on strength formulas.

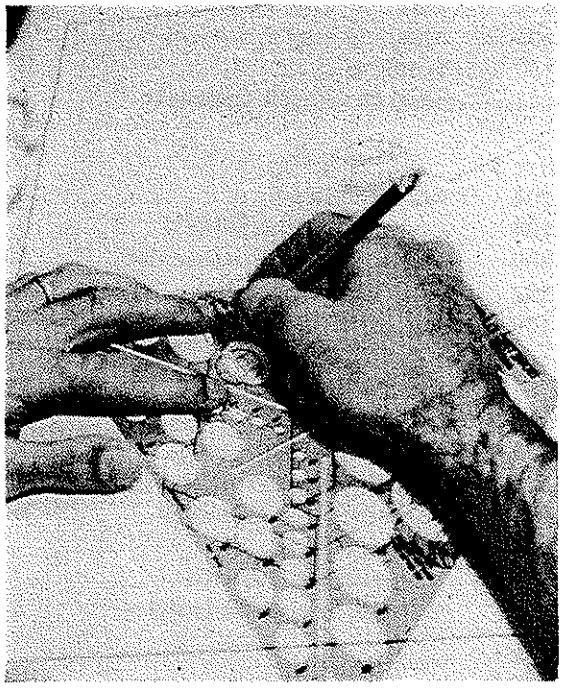
Graduates in the mechanical design technology program may obtain positions as junior designers or drafting technicians in the fields involved in the designed of mechanical systems, flow systems, control systems, and tooling and guaging. Additional opportunities may be open in testing, quality control and engineering sales.

Cooperative work experience in lieu of selected technical courses may be used to complete program requirements. Cooperative work experience requires departmental approval.

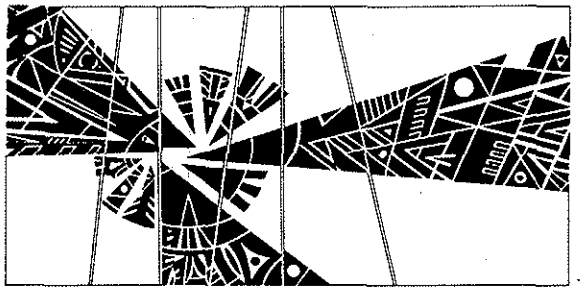
Upon satisfactory completion of the required 97 credit hours, the student is awarded an Associate in Science degree.

Term 1

Course No.	Course Title	Credit Hour
4.221	Machine Drafting	4
4.118	Sketching	1
6.261	Technical Mathematics	4
4.802	Machine Shop I	3



1.101	Communication Skills	3
	General Education Elective	3
Term 2		
4.222	Machine Drafting	4
4.126	Drafting Room Computation	1
6.262	Technical Mathematics	4
4.170	Industrial Materials and Processing	3
1.104	Communication Skills	3
	General Education Elective	3
Term 3		
4.224	Pipe and Flow Systems Drafting	3
4.115	Descriptive Geometry	3
6.266	Technical Mathematics	4
1.106	Technical Report Writing	3
4.177	Foundry and Metal Forming Applications	3
Term 4		
4.100	Electronic Drafting	3
4.230	Pattern Development	3
Mth151 or 4.203	Introduction to Programming/ BASIC	2
6.109	Applied Mechanics	3
6.275	Introductory Chemistry	4
Term 5		
4.232	Machine Design Lab	3
4.231	Tool Design Lab I	3
4.175	Industrial Control Systems	3
6.602	Metallurgy	3
6.105	Strength of Materials	3
Term 6		
4.603	Machine Design	6
4.220	Tool Design II	3
4.178	Industrial Control Systems Design Lab	3
	General Education Elective	3



MEDICAL OFFICE ASSISTANT

Medical office assistants assist qualified physicians in their offices or other medical settings, performing delegated administrative and/or clinical duties.

Medical office assistants have a wide range of duties in many aspects of the physician's practice. Their business/administrative duties include scheduling and receiving patients, obtaining patients' data, maintaining medical records, handling telephone calls, correspondence, purchasing and maintaining supplies and equipment and assuming responsibility of office care, insurance matters, office accounts, fees and collections.

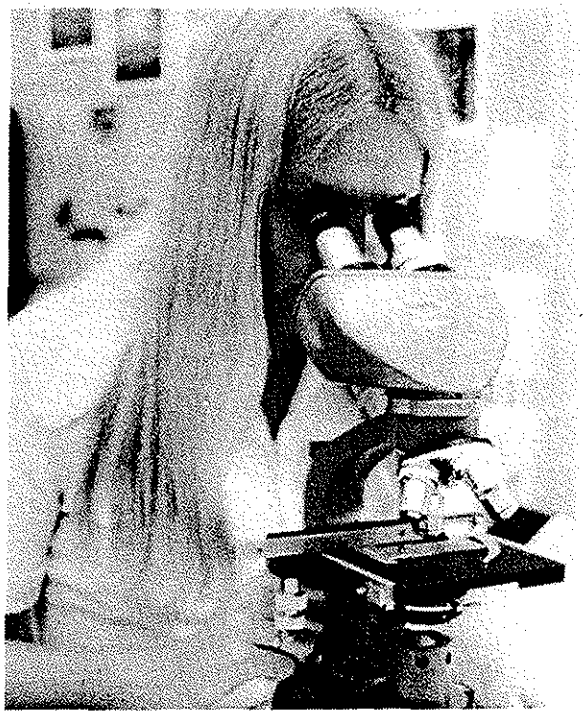
Their medical duties include assisting with examinations and treatments, taking medical histories, performing certain diagnostic tests, carrying out those laboratory procedures that can be done in a physician's office and sterilizing instruments and equipment.

The medical office assistant program develops understanding for the professional nature of the physician's practice and a respect for human dignity and rights of those who seek his service. It develops the skill needed to function safely and effectively as a health team member.

The one-year curriculum includes field trip experiences and the concluding term of the program includes an externship phase in approved clinical settings.

Applications must meet the admission criteria for the college and the medical office assistant program. The student is required to earn a minimum grade of 'C' is all courses each quarter in order to enroll in the following quarter.

A certificate of completion is awarded upon satisfactory completion of the required 54 credit hours.



The medical office assisting program at Chemeketa is accredited by the Council on Medical Education of the American Medical Association in collaboration with the American Association of Medical Assistants, which certifies graduates by examination.

Students enrolled in the medical office assisting program may opt to modify programs to complete the health records requirements for certificates as health records clerk (terms 1 and 2), and as medical transcriptionist (terms 1, 2 and 3). Successful completion of the health records option at Chemeketa will be accepted at Portland Community College for the first year in medical record technology. Portland and Central Oregon Community Colleges offer two-year associate degree programs for medical records technicians. Students must maintain a 'C' in all major courses. They also must provide transportation to clinical facilities within the college district.

Course No.	Course Title	Credit Hour
Term 1		
5.602	Medical Assisting Basic Procedures	3
5.700	Health Occupations Overview	1
5.611	Medical Law & Ethics	3
4.200	Mathematics	3
5.615	Body Structure and Function I	3
5.600	Medical Terminology I	3
2.607	*Typing	3
Term 2		
5.616	Body Structure and Function II	3
5.604	Medical Office Procedures	4
5.513	Multimedia First Aid	1
5.607	Medical Office Management	3
5.610	Medical Terminology II	3
Wr121	English Composition or	
1.101	Communication Skills	3
5.603	*Medical Transcription*	2
He261	Cardiopulmonary Resuscitation	1
Term 3		
5.605	Medical Science	3
5.606	*Medical Assisting* Advanced Procedures	3

5.609	Medical Office Practice	6
Psy100	Introduction to Psychology	
	or	
Psy201	General Psychology	3

*Typing at 35 wpm is prerequisite for 2.607. Students not meeting this requirement will need to first enroll in 2.606.

Health Records Option

***Term 1**

5.700	Health Occupations Overview	1
5.615	Body Structure and Function I	3
5.600	Medical Terminology I	3
5.620	Health Information Systems Procedures I	4
5.611	Medical Law and Ethics	3
5.513	Multimedia First Aid	1

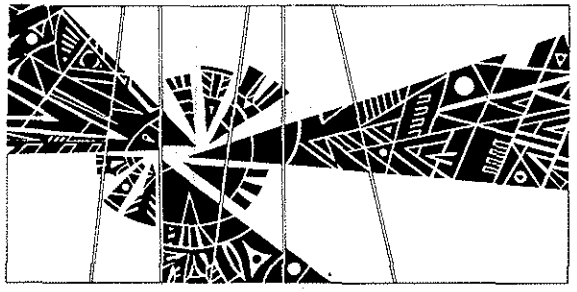
Term 2

5.616	Body Structure and Function II	3
5.610	Medical Terminology I	3
5.621	Health Information Systems Procedures II	5
5.609	Medical Office Practice	6

Term 3

5.603	Medical Transcription	2
5.622	Health Records Processing	5
5.605	Introduction to Medical Science	3
5.604	Medical Office Procedures	3
4.200	Mathematics	
	or	
1.101	Communication Skills	
	or	
Wr121	English Composition	
	or	
Psy201	General Psychology	3

*Typing with a proficiency of 35 wpm is a prerequisite to the program.



NURSING EDUCATION

Chemeketa offers a career ladder program in nursing education for those students who want to become licensed practical nurses or registered nurses.

The nursing curriculum is designed to prepare men and women for positions as licensed personnel at the following levels:

First Level

The licensed practical nurse functions as a member of a nursing or health team and gives nursing care to patients of all ages in simple nursing situations. The licensed practical nurse assists the RN in complex nursing situations.

Successful completion of the first year nursing curriculum is based on the completion of the criteria given in a handbook for student nurses. Completion entitles the student to take the Oregon licensure examination to become a licensed practical nurse and to make application for the second year of the Chemeketa program.

The student who successfully completes the first term work and exits from the educational program is eligible to receive a certificate as a nursing assistant.

The nursing assistant functions under the direction and supervision of a registered nurse or licensed practical nurse. He or she assists licensed nursing personnel with meeting normal patient needs for safety, comfort, hygiene activity, rest, sleep, nutrition, elimination and fluid balances, oxygen and emotional support.

Term 1 Course No.	Course Title	Credit Hour
Nur101	Nursing	8
Bi110	Life Science Principles	4
Wr121	English Composition	3
5.700	Health Occupations Overview	1
Term 2		
Nur102	Nursing	8
Wr122	English Composition or	
Sp111	Fundamentals of Speech	3
Bi121	Human Anatomy and Physiology	4
Psy299	Growth and Development	3
Term 3		
Nur103	Nursing	10
Bi122	Human Anatomy and Physiology	4
	*General Education Elective	3

*Select from Wr122; Eng253, 254, 255; Soc204, 205, 206; Anth207, 208, 209; Hst257, 258, 259; PS201, 202, 203; WS101, 102, 103; Psy201, 202, 203; Hst107, 108, 109.

Second Level Nursing

The associate degree nurse, or RN, applies knowledge drawn from broad, in-depth education in the social and physical sciences in assessing planning, ordering, giving, delegating, teaching and supervising care which promotes the patient's optimum health and independence.

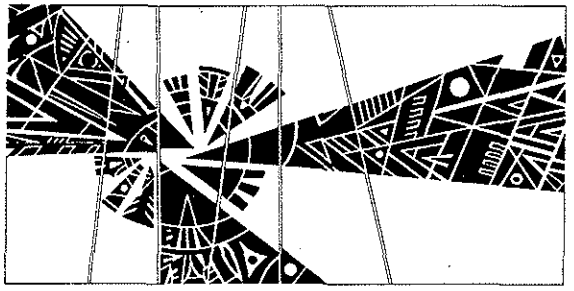
The associate degree nurse also guides other team members with less education and/or experience, evaluates the need for patient instruction, plans and participates in health teaching and applies mental health principles to nursing care and function.

The registered nurse assumes responsibility for his/her professional development.

Chemeketa advises and helps students plan their program of pre-nursing for transfer to a school of nursing which grants the baccalaureate degree and offers general education courses applicable to the B.S. program. The college also offers specialized and re-entry course to help registered nurses, licensed practical nurses and other health care personnel keep abreast of current knowledge and new developments in their field. General education courses are available for licensed nursing personnel who want to continue their education for transfer into a senior college.

Term 4 Course No.	Course Title	Credit Hour
Nur201	Nursing	4
Bi124	Medical Microbiology	4
Sp113	Fundamentals of Speech	3
	*Elective	3
Term 5		
Nur202	Nursing	10
	Sociology Elective	3
	*Elective	3
Term 6		
Nur203	Nursing	10
Nur207	The Nurse at Work	3
	*Elective	3

*Approved electives are listed following Level I. Students are strongly urged to choose a variety of electives.



OFFICE OCCUPATIONS

The office occupations program is designed to meet the needs of people who want to develop or refresh clerical skills to obtain office work.

The course concentrates on developing basic skills in a short time to prepare students for employment as receptionists, file clerks, typists and related jobs.

Independent study and individualized instruction are utilized to give students a comprehensive review of typing, shorthand, machine transcription, filing, business English and calculators.

Students may enroll each Monday when openings exist.

The average length of time to complete the full program is two terms (22 weeks) if the student attends 30 hours per week. Students who wish to refresh specific skills may enroll on a weekly basis.

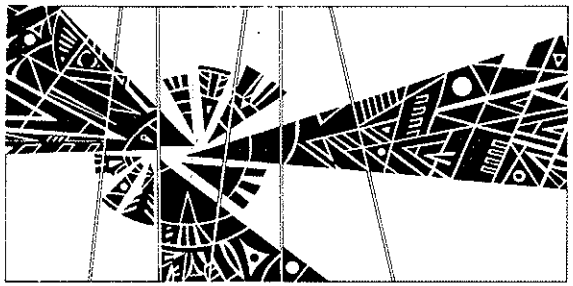
After completing requirements of the full program, students will receive a certificate of completion and a proficiency statement for subjects studied. Those who enroll on a weekly basis will receive a proficiency statement.

For additional information call the associate director for secretarial/clerical programs.

Minimum number of credits required to receive certificate of completion is 16.

Courses in this program include:

Course No.	Course	Variable Credit
SS121A	Typing I	1
SS121B		1
SS121C		1
SS122A	Typing II	1
SS122B		1
SS122C		1
2.515	Filing	3
2.658A	Calculators, Introduction to	1
2.658B		1
SS110A	Shorthand Refresher	2
SS110B		1
2.662A	Introduction to Machine Transcription	1
2.662B		
2.720	Civil Service Exam Prep I	3
2.271	Civil Service Exam Prep II	3



REAL ESTATE

The goal of the real estate program is to develop in students a functional awareness of the complexities of real estate. Factors affecting the value, control, use, appreciation, responsibilities and privileges associated with real property are considered in the required work.

The curriculum is designed to provide the student with opportunity for specialization in three basic areas: Appraisal, brokerage and escrow and loan officer training. Opportunity is provided for students to select a combination of these options.

Men and women with technical training in this curriculum serve in many capacities. They may find employment in county assessors' offices, county recorders' offices, city planning departments, the federal housing administration, veterans affairs, title insurance companies, escrow departments, state highway departments, mortgage companies, savings and loan associations, commercial banks, state tax commissions, federal land banks, farm credit administration and building and subdivision firms as well as work in real estate brokerage and appraising offices.

Proficiency in communication skills, both oral and written, is required for graduation. The minimum achievement level for written communication is Business Communications BA214. Placement in an initial course in English is based on an English placement test. Transferable English Composition Wr121, Wr122 and Wr123 will be accepted in place of Wr40, 2.673 and BA214. The student must be able to demonstrate proficiency in expressing his/her ideas orally. Minimum requirement is one course in speech.

Mathematics is also considered an integral part of the curriculum. The minimum achievement level is Applied Business Math 6.918. Any transfer math, Math 95 or higher, will be accepted in place of Business Math 6.918. Placement tests are provided to assist students in choosing math courses consistent with their ability.

During the second year of study, students may be eligible for cooperative work experience which allows them to gain valuable on-the-job training in their field of emphasis.

An Associate in Science degree is awarded to individuals who satisfactorily complete requirements.

Course No.	Course Title	Credit Hour
Term 1		
	English Variable (based on placement test)	
	or	
	General Education Elective	3
	Math Variable	3
BA101	Business Environment	4
BA260	Real Estate Principles	3
BA211	Financial Accounting I	
	or	
6.923	Accounting Procedures I	4
Term 2		
	English Variable	
	or	
	General Education Election	3
	Math Variable	3
BA261	Real Estate Principles II	3
BA264	Real Estate Finance	3
2.437	Legal Descriptions	2
2.658	Introduction to Calculators	2
BA263	Real Estate Law	3
Term 3		
BA214	Business Communications	3
BA262	Real Estate Practices	3
SS121	Typing I	3
BA226	Business Law I	3
2.408	Real Estate Appraisal I	3
Ec100	Outline of Economics	
	or	
Ec201	Principles of Economics	3

Appraisal Option

Term 4		
Sp220	Business and Professional Speaking	
	or	
Sp111	Fundamentals of Speech	3
2.409	Real Estate Appraisal II	3
2.423	Escrow Procedures I	3
Psy101	Psychology of Human Realations	3
2.415	Real Estate Investment Analysis I—Principles	3
FE201		
or		
2.687	Cooperative Work Experience	
	or	
	*Approved Elective	3
Term 5		
2.411	Real Estate Appraisal III	3
2.418	Elements of Design and Construction	3
2.416	Real Estate Investment Analysis II—Taxation	3
2.424	Escrow Procedures II	3

FE201 or		
2.687	Cooperative Work Experience	
	or	
	*Approved Elective	3

Term 6

2.425	*Zoning, Subdivision and* Community Planning	3
2.428	Real Estate Seminar	3
2.429	Public Relations in Business	3
FE201 or		
2.687	Cooperative Work Experience	
	or	
	*Approved Electives	6

Total Credit hours required: 102

Brokerage Option

Term 4

2.409	Real Estate Appraisal II	3
2.423	Escrow Procedures I	3
2.415	Real Estate Investment Analysis I—Principles	3
BA238	Salesmanship	3
FE201 or		
2.687	Cooperative Work Experience	
	or	
	*Approved Electives	6

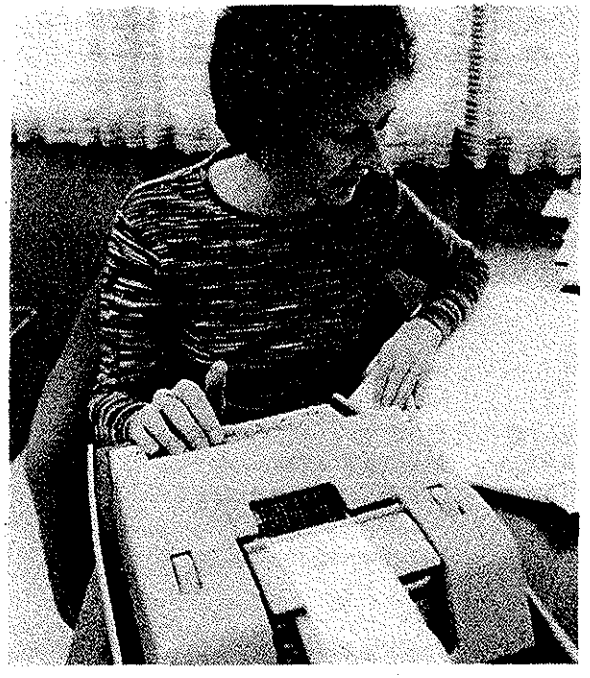
Term 5

2.424	Escrow Procedures II	3
2.418	Elements of Design and Construction	3
2.416	Real Estate Investment *Analysis II—Taxation*	3
Sp220	Business and Professional Speaking	
	or	
Sp111	Fundamentals of Speech	3
FE201 or		
2.687	Cooperative Work Experience	
	or	
	*Approved Electives	3

Term 6

2.426	Escrow Procedures III	3
2.417	Real Estate Investment Analysis III—Sales and Exchange	3
2.425	Zoning, Subdivision and Community Planning	3
2.428	Real Estate Seminar	3
2.429	Public Relations in Business	3
FE201 or		
2.687	Cooperative Work Experience	
	or	
	*Approved Elective	3

Total credit hours required: 105.



Escrow Option

Term 4

Sp220	Business and Professional Speaking	
	or	
Sp111	Speech	3
2.423	Escrow Procedures I	3
Psy101	Psychology of Human Relations	3
SS122	Typing II	3
2.415	Real Estate Investment Analysis I—Principles	3
FE201 or		
2.687	Cooperative Work Experience	
	or	
	*Approved Elective	3

Term 5

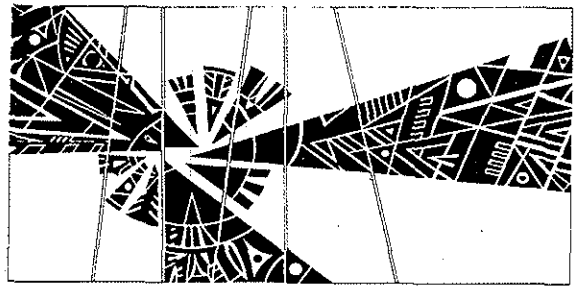
2.424	Escrow Procedures II	3
2.416	Real Estate Investment Analysis II—Taxation	3
2.641	Office Procedures	3
FE201 or		
2.687	Cooperative Work Experience	
	or	
	*Approved Electives	6

Term 6

2.426	Escrow Procedures III	3
2.417	Real Estate Investment Analysis III—Sales and Exchange	3
2.428	Real Estate Seminar	3
2.429	*Public Relations in Business*	3
FE201 or		
2.687	Cooperative Work Experience	
	or	
	*Approved Electives	6

Total credit hours required: 105.

*Electives must be approved by your advisor.



SECRETARIAL SCIENCE

Two-year Program Options:
Engineering Secretary
Insurance Secretary
Legal Secretary
Medical Secretary
Professional Secretary

The two-year options in secretarial science are designed to meet the needs of persons preparing for employment in the stenographic or secretarial field.

The programs also provide opportunities for persons already engaged in business to obtain further training that will help them advance in their employment.

The selection of courses offered enables students interested in secretarial work to become highly skilled.

The responsibilities of an office worker are varied and vital to the inner workings of the company or institution for which he or she works. Jobs are interesting and challenging. The work may be highly specialized or it may be closely related to management-level personnel concerned with policy decisions.

Engineering Secretary Option

The two-year engineering secretary curriculum is designed to prepare persons for employment in an engineering-related office, whether a large consulting firm or a small firm of engineers.

Graduates work with engineers, assist with the writing of contracts and specifications, and provide secretarial support service.

A three-term sequence in Gregg shorthand or briefhand is suggested. Also recommended are drafting, blueprint reading and building materials.

Cooperative work experience is recommended. Students are eligible for CWE if they have a grade point average of 2.5 or better and have completed approximately 60 credit hours of the program.

The Associate in Science degree is awarded upon successful completion of a minimum of 99 credit hours.

Term 1

Course No.	Course Title	Credit Hour
1.101	Communication Skills	3
6.261	Technical Math	4
SS111	Stenography I	
	or	
SS114	Briefhand I	
	or	
	General Education Elective	3
SS121	Typing I	3
SS101	Office Careers Survey	1
	Social Science Elective	3

Term 2

SS122	Typing II	3
SS112	Stenography	
	or	
2.701	Briefhand	
	or	
	General Education Elective	3
2.661	Reprographics	3
2.642	Records Management	3
6.192	Introduction to Engineering Calculators	1
6.262	Technical Math	4

Term 3

6.266	Technical Math	4
BA214	Business Communications	3
SS113	Stenography II	
	or	
2.702	Briefhand II	
	or	
	General Education Elective	3
SS123	Typing III	3
2.641	Office Procedures	3

Term 4

BA211	*Financial Accounting I*	
	or	
6.923	Accounting Procedures	4
Ec100	Plane Surveying	4
6.118	Outline of Economics	3
6.118	Contracts and Specifications	3
	General Education Elective	3

Term 5

1.106	Technical Report Writing	3

2.663	Transcribing Machine Operation	3
6.110	Construction Estimating	3
6.139	Environmental Quality Control	3
6.103	Plane Surveying	4
Term 6		
BA226	Business Law	3
6.140	Sanitary Engineering	3
1.104	Communication Skills	3
	*General Education Elective	3
2.688 or FE201	Cooperative Work Experience	4

Insurance Secretary Option

The two-year secretary curriculum is designed to prepare persons for employment in insurance-related offices, such as an independent agent's office, a large district insurance office or in the personnel benefits department of a corporation or institution.

The insurance secretary may perform a variety of duties including processing applications and forms, answering questions of policyholders or handling written communications of all types.

The Associate in Science degree is awarded upon successful completion of a minimum of 99 credit hours.

Math requirement: minimum achievement level is Applied Business Math 6.918.

English requirement: minimum achievement level in English is Business Communications BA214. An English placement test is administered by secretarial/clerical staff during registration.

Cooperative work experience: maximum of six credit hours will be accepted toward graduation requirements. Students are eligible for cooperative work experience if they have a grade point average of 2.5 or better and have completed approximately 60 credit hours of the program.

Term 1 Course No.	Course Title	Credit Hour
	English Variable (based on placement test) or General Education Elective	3
	Math Variable (based on placement test)	3
BA101	Business Environment	4
SS121	Typing I	3
BA241	Risk and Insurance	3
Term 2		
	English Variable or General Education Elective	3
	Math Variable	3
SS122	Typing II	3
Ec100	Outline of Economics or	
Ec201	Principles of Economics	3
2.119	Insurance—Property and Casualty	3
2.344	Insurance Occupational Survey Seminar	1
Term 3		
BA214	Business Communications	3
SS123	Typing III	3
1.610	Public Speaking or	
Sp111	Fundamentals of Speech	3
BA226	Business Law I	3
2.658	Introduction to Calculators	2
2.343	Insurance—Life and Health	3
Term 4		
BA211	Financial Accounting I or	
6.923	Accounting Procedures I	4
SS114	Briefhand I or	
SS111	Stenography I	3
2.663	Transcribing Machine Operation	3
2.343	IIA—Insurance 21	3
	Business Elective	3
Term 5		
BA212	Financial Accounting II or	
6.924	Accounting Procedures II	4
2.701	Briefhand II or	
SS112	Stenography II	3
2.223	Rating and Underwriting—Property and Casualty	3
2.641	Office Procedures	3
	*General Education Elective or	
FE201 or 2.687	Cooperative Work Experience	3
Term 6		
2.702	Briefhand III or	
SS113	Stenography III	3
2.226	Regulations and Law	2
	*General Education Electives	6
FE201 or 2.687	Cooperative Work Experience	3
	Social Science Elective	3

*Electives must be approved by your advisor.

Legal Secretary Option

The two-year legal secretary curriculum is designed to prepare for beginning secretarial

positions in a law office or in the legal department of companies or agencies.

The program emphasizes training in Gregg shorthand dictation, machine transcription, typing legal documents and correspondence, managing legal files, answering the telephone, and keeping office records.

The student will work with documents in real estate and property transfer, litigation, wills and estates and corporations and partnerships.

Supervised on-the-job training gives you the opportunity for work with the skills, knowledge and attitudes required in a legal environment.

An Associate of Science degree is awarded upon successful completion of the minimum required 95 credit hours.

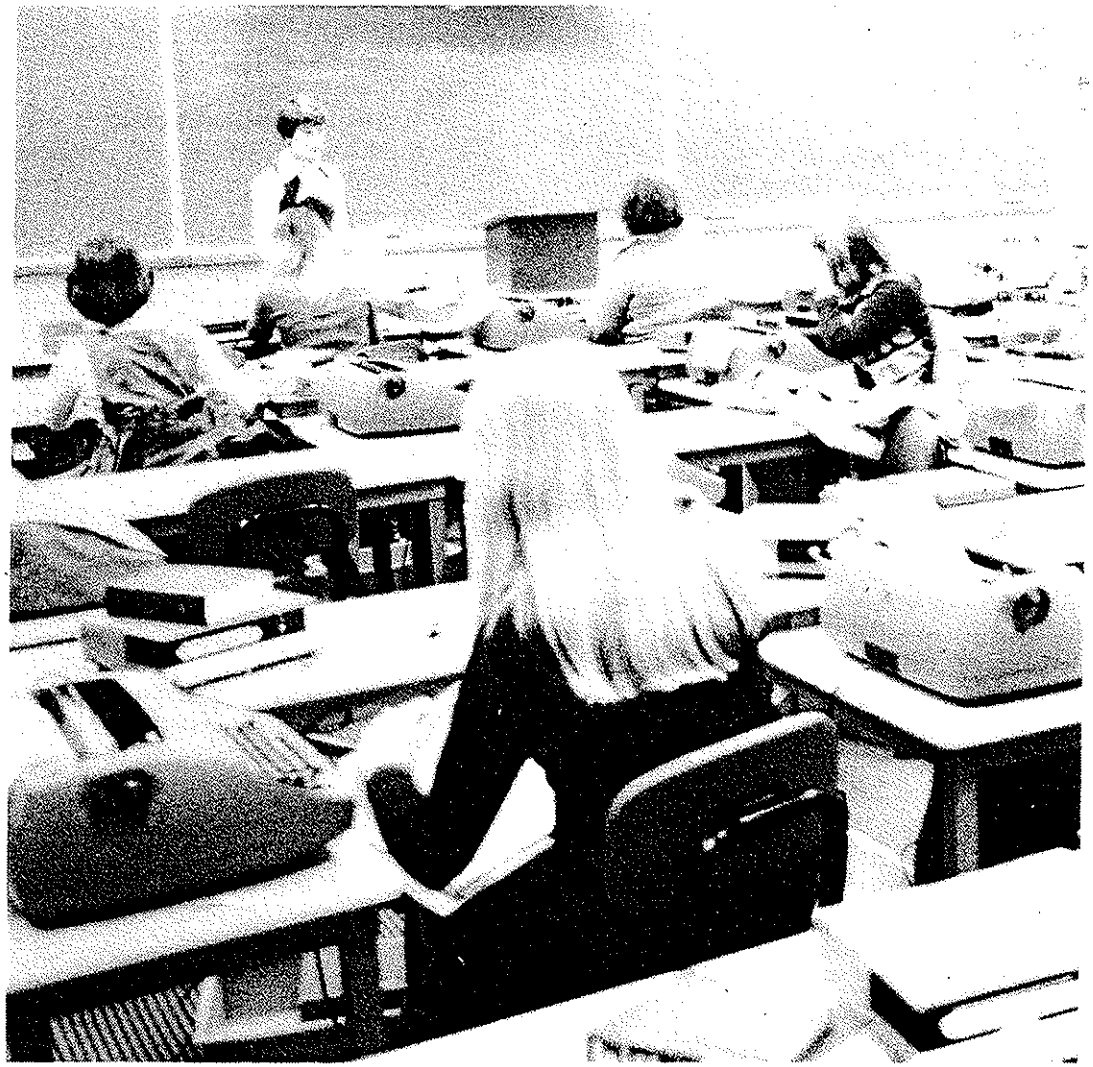
Term 1 Course No.	Course Title	Credit Hour
	*English Variable	3
SS101	Office Careers Survey	1
4.201	**Math	3
SS111	Stenography I	3
SS121	Typing I	3
BA131	Intro. to Data Processing	3

Term 2		
2.673	Business English Fundamentals	3
SS112	Stenography II	3
BA101	Business Environment	4
SS122	Typing II	3
2.641	Office Procedures	3

Term 3		
BA214	Business Communications	3
SS113	Stenography III	3
SS123	Typing, Advanced	3
2.661	Copying Processes	3
2.658	Intro. to Calculators	2
2.713	Legal Terminology and Documents	3

Term 4		
SS211	Applied Stenography	3
2.714	Legal Office Procedures	3
2.642	Records Management	3
2.663	Transcribing Machine Operation	3
BA211	Financial Accounting I	4

Term 5		
SS212	Applied Stenography	3
2.711	Legal Transcription I	3
BA251	Office Management	3
BA226	Business Law I	3



	Business Elective	3
SS213	Applied Stenography	3
2.712	Legal Transcription II	3
	Cooperative Work Experience	3
	Approved Elective	3
	Social Science Elective	3

Suggested Electives: Medical Terminology, Introduction to Word Processing, Medical Law & Ethics, Business Economics

*Determined by placement test given during registration. Sequence: Writing 40, 2.673; BA214.

**Minimum of Business Math, 4.201, based on placement test. Sequence: 4.200, 4.201.

Medical Secretary Option

The two-year medical secretary curriculum is designed to prepare persons for employment in a medically-related office where they perform duties such as making appointments, managing patient records, meeting patients, typing correspondence, transcribing patient records, maintaining financial records and completing insurance forms.

The Associate in Science degree is awarded upon successful completion of a minimum of 95 credit hours.

Business Math 4.201 is required for graduation.

English requirements: minimum achievement level is Business Communications BA214. The English placement test is administered by the secretarial/clerical staff during registration.

Cooperative work experience is recommended for one term. A mixmium of six credit hours in CWE will be accepted toward graduation requirements. Students are eligible for cooperative work experience only if they have a grade point average of 2.5 or better and have completed approximately 60 credit hours of the program.

Medical Secretary Option

Course No.	Course Title	Credit Hour
Term 1		
	English Variable (based on placement test)	
	or	
	General Education Elective	3
	Math Variable (based on placement test)	3
SS111	Stenography I	
	or	
SS114	Briefhand I	3
SS121	Typing I	3
5.600	Medical Terminology I	3
SS101	Office Careers Survey	1
Term 2		
	English Variable	
	or	
	General Education Elective	3
SS122	Typing II	3
SS112	Stenography II	
	or	
2.701	Briefhand II	3
BA131	Introduction to Data Processing	3
5.610	Medical Terminology II	3
2.568	Intorduction to Calculators	2
Term 3		
BA214	Business Communications	3
SS113	Stenography III	
	or	
2.702	Briefhand III	3
SS123	Typing III	3
2.663	Transcribing Machine Operation	3
5.611	Medical Law & Ethics	3
5.513	Multimedia First Aid	1
Term 4		
5.615	Body Structure & Function I	3
2.569	Medical Machine Transcription I	3
2.641	Office Procedures	3
SS211	Applied Stenography	3
2.642	Records Management	3
Term 5		
5.616	Body Structure & Function II	3
2.566	Medical Secretary Practicum	3
6.923		
or		
BA211	Financial Accounting I	4
2.570	Medical Machine Transcription II	3
	Elective-Business or Medical	3
Term 6		
5.605	Medical Science	3
	Social Science Elective	3
Ec100	Outline of Economics	3
or		
Ec201	Business Economics	
	Elective—CWE recommended	3
	Elective Business or Medical	3

Professional Secretary Option

The two-year professional secretary curriculum is designed to prepare persons for employment in the secretarial field. The work requires the ability to organize a variety of tasks, to accept responsibility, and to use initiative as a member of a team. Skill requirements may require ability to type; transcribe from machine or shorthand dictation; serve personal and telephone callers; operate business machines; maintain records;

perform mathematical calculation; store and retrieve records; and apply a working kowledge of office organization, office procedures, accounting, business law, economics, records management, data processing and human relations.

The student satisfactorily completing requirements for the professional secretary curriculum is eligible to sit for the Certified Professional Secretary examination in the spring of the second year during the final term of study.

Math requirements: Business Mathematics 4.201.

English requirement: Business Communications BA214. Placement in the prerequisites for this course is based on an English test administered by the secretarial/clerical staff.

Cooperative work experience is recommended for one term. A maximum of six credit hours in CWE will be accepted toward graudation requirements. Students are eligible for cooperative work experience only if they have a grade point average of 2.5 or better and have completed approximately 60 term units of the program.

The Associate in Science degree is awarded upon satisfactory completion of a minimum of 99 credit hours.

Term 1

Course No.	Course Title	Credit Hour
	English Variable (based on placement test)	
	or	
	General Education Elective	3
	Math Variable (based on placement test)	3
SS111	Stenography I	3
SS121	Typing I	3
BA101	Business Environment	4
SS101	Office Careers Survey	1

Term 2

	English Variable	
	or	
	General Education Elective	3
SS112	Stenography II	3
BA131	Introduction to Data Processing	3
SS122	Typing II	3
2.641	Office Procedures	3
	Social Science Elective	3

Term 3

BA214	Business Communications	3
SS113	Stenography III	3
SS123	Typing III	3
2.663	Transcribing Machine Operation	3
2.661	Reprographics	3
2.658	Introduction to Calculators	2

Option A—Second Year

Term 4

SS211	Applied Stenography IV	3
2.710	Secretarial Practicum	3
2.642	Records Management	3
BA211	Financial Accounting I	
	or	
6.923	Accounting Procedures	4
BA217	Business Machines	3

Term 5

SS212	Applied Stenography V	3
BA251	Office Management	3
BA212	Financial Accounting II	
	or	
6.924	Accounting Procedures II	4
BA226	Business Law	3
	Business Elective	3

Term 6

SS213	Applied Stenography VI	3
Ec100	Outline of Economics	
	or	
Ec201	Introduction to Economics	3
	Social Science Elective	3
	Business Electives	6

Option B—Second Year

This option allows the student to be employed at a full-time paid position while receiving 12 term units. The position is secured by the work related experience office to enable the student to integrate secretarial skills and knowledge with pratical and valuable on-the-job experience with business or governmental agencies.

Associate in Science degree is awarded with 108 minimum term units. Other requirements listed above.

Term 4

	Cooperative Education	12

Term 5

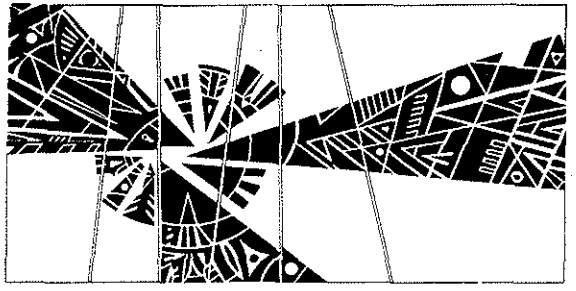
SS211	Applied Stenography IV	3
2.642	Records Management	3
BA211	Financial Accounting	
	or	
6.923	Accounting Procedures I	4
BA217	Business Machines	3
2.710	Secretarial Practicum	3

Term 6

	Cooperative Education	12

Term 7

SS212	Applied Stenography V	3
BA251	Office Management	3
BA212	Financial Accounting II	
	or	
6.924	Accounting Procedures II	4
BA226	Business Law	3
Ec100	Outline of Economics	
	or	
Ec201	Introduction to Economics	3



SMALL BUSINESS MANAGEMENT

The three-year business management program is for the small business operator and spouse who own, lease or manage a business or have access to a full set of financial records.

The records analysis program involves monthly class meetings as well as visits by the instructor once a month to each small business. Instruction centers upon keeping basic records, annual computer analyses of these records, a cost of operation summary and the application of analysis information to improving the management and organization of each business.

The tuition covers the instruction and the year-end computer analysis. Contact the community service office, 399-5205, for enrollment information.

First Year

Small Business Management I. Business Records 9.298

Stimulating an interest in small business management, showing the need for small business records, measure of small business family progress and use of small business and home records, inventories as an important part of small business records, keeping business accounts current, the balance sheet and monthly summary, cash flow and cash flow projections, employer's records, social security and income tax, unemployment compensation, worker's compensation and fair labor standards act, employee relations, OSHA and safety considerations, depreciation schedules, income tax management and tax planning, end of year inventory and closing the record book for computer analysis.

Second Year

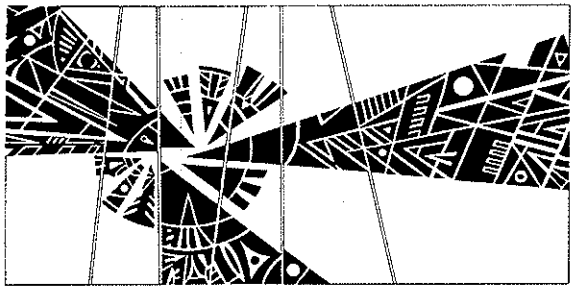
Small Business Management II

Calculating income, self employment and social security taxes, measures of business profit and size, importance of inventories, analyzing the customer service department, analyzing mechanization, labor, equipment and building costs, analyzing major department efficiencies, income tax planning and management and closing the business account book for analysis.

Third Year

Small Business Management III

Attributes of successful small business entrepreneurs, determining the most profitable level of operation, selection of departments, evaluation of customer service and other major departments, evaluation of overhead and general business costs, maximizing income, site building and merchandise handling, planning and transitional stages and analysis of records for closing the business year.

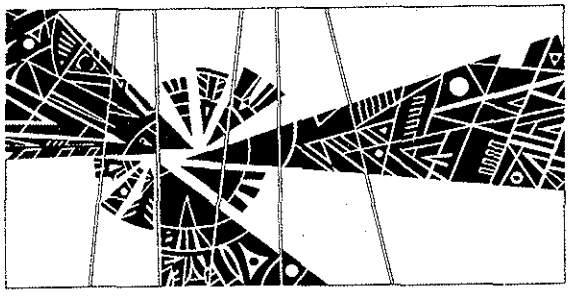


SURVEY TECHNLOGY

The objective of the surveyor technician curriculum is to develop the capabilities of the student in the basic concepts and the rules associated with surveying and inspection. The student upon graduating from this sequence of courses will be sufficiently founded in technical material to start work as a surveyor technician doing location work for roads or highways, building location, property surveys, office computations, and map preparation. A related position is that of the construction inspector who represents the engineer on the job site and inspects the construction work as it progresses to assure compliance with the plans and specifications.

The Associate in Science degree is awarded upon successful completion of the required 106 credit hours.

Term 1 Course No.	Course Title	Credit Hour
6.101	Plane Survey	4
6.261	Technical Mathematics I	4
1.101	Communication Skills	3
4.101	Drafting	2
6.136	Engineering Technician Orientation	2
	Psychology Elective	3
Term 2		
6.103	Plane Survey	4
6.262	Technical Mathematics II	4
6.109	Applied Mechanics	3
4.120	Print Reading	2
6.371	Applied Physics	4
Term 3		
6.500	Survey Computations	3
6.266	Technical Mathematics III	4
1.106	Technical Report Writing	3
4.123	Project Development	3
4.131	Mapping and Platting	3
3.605	Tools and Equipment	2
Term 4		
6.118	Contracts & Specifications	3
4.236	Civil Engineering Drafting	3
4.190	Industrial Accident Prevention	3
3.600	General Forestry	3
	Geology Elective	3
	Science Elective	3
Term 5		
6.132	Survey Law	3
6.134	Public Land Survey	3
6.110	Construction Estimating	3
4.235	Photogrammetry I	3
6.113	Hydraulics	4
3.610	Tree Identification	2
Term 6		
6.507	Route Surveying	3
4.237	Photogrammetry II	3
4.287	Methods of Supervision	3
6.122	Soil Mechanics Fundamentals	3
3.611	Tree Identification	2
	Speech Elective	3



VISUAL COMMUNICATIONS

The visual communications technician program is intended to provide knowledge, skills and experience which will prepare students for employment in one or more fields of the visual communications industry such as press operator, process photographer and graphic designer.

Learning activities will be provided so students may learn to operate representative types of graphic equipment, including process cameras, printing presses, densitometers, enlargers and phototypesetters.

Upon satisfactory completion of the required 92 credit hours, the student is awarded an Associate in Science degree.

Lower division transfer courses may be taken in lieu of general education, math and science courses to complete program requirements. Any other program deviations must be approved by the department.

Cooperative work experience in lieu of selected technical courses may be used to complete program requirements. Cooperative work experience requires departmental approval.

Term 1

Course No.	Course Title	Credit Hour
6.163	Basic Technical Photography	5
4.200	Mathematics	3
1.101	Communication Skills	3
	*Select one with consent of instructor:	
6.166	*Graphic Design and Character Generation*	5
6.168	Process Photography, Stripping and Platemaking	6
6.170	Presswork and Reproduction Systems	7

Term 2

4.202	Mathematics	3
1.104	*Communication Skills*	3
	Science Elective	4
	Select one (see term 1): *6.166, 6.168, 6.170*	

Term 3

Psy100	Introduction to Psychology	3
	Communication Elective (English, *speech, etc., to be arranged* with advisor or counselor)	3
	Select one (see term 1): *6.166, 6.168, 6.170*	

*Courses 6.166, 6.168, 6.170 will be taught concurrently each term. Students will be counseled *into enrollment on an individual basis.*

Term 4

6.164	Intermediate Technical Photography	6
	General Education Elective	3
	**Select one with consent of instructor:	
6.167	Advanced Graphic Design	6
6.169	Image Conversion and Image Carriers for Offset Lithography	6
	Special Problems in Graphic Communications: 6.172 (3 cr. hr.), 6.173 (5 cr. hr.), 6.174 (6 cr. hr.) or 6.175 (7 cr. hr.)	

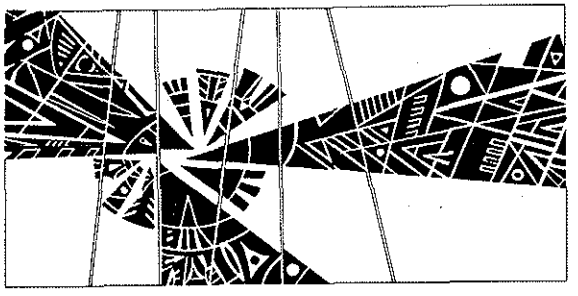
Term 5

6.167	Advanced Presswork	6
	General Education Elective	4
	Select one (see term 4): 6.167, 6.169, 6.172, 6.173, 6.174, 6.175	

Term 6

	Special Problems in Graphic Communications: 6.172, 6.173, 6.174, 6.175 to equal	16

**Courses 6.167, 6.169, 6.171, 6.172, 6.173, 6.174 and 6.175 will be taught concurrently each term. Students will be counseled into enrollment on an individual basis.



WELDING

Courses in the welding program are designed to provide the training and knowledge required in welding occupations.

Laboratory time is utilized in development and practice of welding skills.

An opportunity is provided to take the examination for certification in arc welding given through the State Department of Commerce. An extra fee for this test is determined by the number of students involved and the type of test.

Graduates may find employment in job specialty, production and maintenance shops, choosing from a variety of positions including oxyacetylene burner, MIG welder, arc welder, oxyacetylene welder, semiautomatic welding equipment operator and TIG welder.

This is a one-year program and students finishing the 45 required credit hours receive a certification of completion.

Term 1

Course No.	Course Title	Credit Hour
4.240	Basic Arc Welding	5
4.161	Basic Oxyacetylene Welding	4
4.244	Blueprint Reading and Sketching	2
4.200	Mathematics	3
4.253	Shop Safety	1
4.242	Oxyacetylene Cutting	1

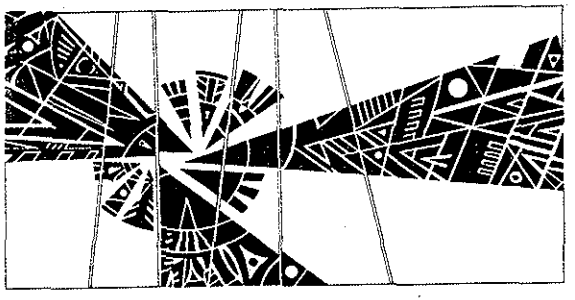
Term 2

4.241	Intermediate Arc Welding	6
4.245	Layout Practices	3
4.250	Basic MIG Welding	2
4.251	Basic TIG Welding	2
4.247	Welding Metallurgy I	2

Term 3

4.252	Advanced MIG Welding	3
4.166	Advanced Arc Welding	3
4.249	Weld Shop Problems	6
4.248	Welding Metallurgy II	2

Cooperative work experience in lieu of selected technical courses may be used to complete program requirements. Appropriate summer employment may be used for CWE by arrangement before the end of spring term. CWE requires departmental approval.



WELDING AND FABRICATION

This curriculum provides required technical knowledge and skills for welding, fabrication and related occupations. It includes a background in manufacturing materials, processes and systems with drafting, blueprint reading and shop sketching for effective participation in the industry.

Written and oral communications, along with other general education subjects are included. Related scientific, mathematical and general mechanical principles are stressed throughout the curriculum.

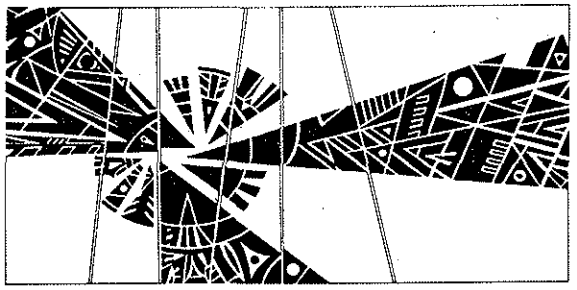
A welding and fabrication technician is skilled in the use of oxyacetylene welding and cutting equipment, manual arc, tungsten inert gas and metallic inert gas processes. He or she has a good working knowledge of shop blueprints and welding symbols, jig fabrication and assembly processes.

At the end of the sixth term, welding and fabrication students have an opportunity to take the plate and/or pipe certification test administered by the State Department of Commerce. An extra fee for this test is determined by the number of students involved and the type of test.

Graduates can choose from several types of positions in business and industry in such occupational areas as: machinery fabrication, structural fabrication, welding fitting and layout, automatic and semiautomaic welding, automatic flame cutter operation, millwright welding, plant maintenance and quality control and development.

Upon satisfactory completion of the 105 required units, the student is awarded an Associate in Science degree.

Course No.	Course Title	Credit Hour
Term 1		
4.160	Electric Arc Welding	4
4.244	Blueprint Reading and Sketching	2
4.802	Machine Shop I	3
4.200	Mathematics	3
1.101	Communication Skills	3
4.101	Drafting	2
4.235	Shop Safety	1
Term 2		
4.161	Basic Oxyacetylene Welding	4
Psy100	Introduction to Psychology	3
1.104	Communication Skills	3
4.155	Fabrication Practices I	3
4.300	Pratical Phsysics	4
4.202	Mathematics	3
Term 3		
4.250	Basic MIG Welding	2
4.251	Basic TIG Welding	2
4.204	Mathematics	3
4.302	Practical Physics	4
4.500	Employer-Employee Relations	3
4.156	Fabrication Practices II	3
6.600	Elements of Metallurgy	3
Term 4		
4.849	Heat Treatment of Steel	3
4.238	Advanced TIG Welding	2
4.162	Electric Arc Welding	5
4.243	Fabrication Procedures	3
4.168	Fabrication Shop Problems	3
Term 5		
4.157	Fabrication Practices III	3
4.169	Fabrication Problems	3
4.252	Advanced MIG Welding	3
4.804	Machine Shop II	3
	General Education Elective	3
Term 6		
4.167	Welding for Certification	4
4.158	Fabrication Practices IV	4
4.165	Production MIG Welding	3
4.254	Shop Projects	2
	General Education Elective	3



WELL DRILLING

The well drilling program at Chemeketa prepares the student for entry into the well drilling industry. Employment is available for drillers, helpers, equipment salesmen, field engineers and other related jobs.

Students learn various methods of well construction, taking and analyzing samples, choosing and setting correct screens, proper grouting methods and test pumping. Through classroom and field experience, students study geology and hydrology as these subjects pertain to ground water and are made aware of the importance of the protection of this valuable resource.

In the first year, students may take the pipe certification arc welding test administered by the State Department of Commerce.

An Associate in Science Degree is granted upon completion of the required 97 term units.

Term 1

Course No.	Course Title	Credit Hour
4.200	Mathematics	3
1.101	Communication Skills I	3
4.810	Shop Drawing and Layout I	3
4.305	Elementary Geology	4
4.150	Welding	2
4.290	Drilling Operations I	4

Term 2

4.202	Mathematics	3
1.104	Communication Skills II	3
4.802	Machine Shop I	3
4.154	Intermediate Arc Welding for Drillers	4
4.152	Oxy-Acetylene Welding	2
4.253	Shop Safety	1

Term 4

4.302	Pratical Physics	4
4.170	Industrial Materials and Processes	3
4.167	Welding for Certification	4
4.292	Drilling Operations II	3
	General Education Elective	3

Term 4

Ec100	Outline of Economics	3
4.293	State Drilling Standards and Record Keeping	3
4.172	Power Systems	4
4.295	Drilling Operations III	5

Term 5

4.171	Medical Systems	4
4.291	Engine Theory and Maintenance	3
4.296	Drilling Operations IV	5
	Approved Elective	3

Term 6

Psy101	Psychology of Human Relations	3
4.294	Hydrology for Drillers	4
4.297	Drilling Operations V	8

Course Descriptions

Not all courses listed will be offered each term, or each year, and Chemeketa Community College reserves the right to cancel any course if enrollment in the course is below a minimum number. The hours indicated opposite the course name and number refer to the toal number of clock hours per week (lecture plus lab) and the term units (credit hours) of the course. Courses requiring preprequisites are designated by an asterisk (*). Prerequisites for the course are included in the course description. Students should not enroll in a course for which they are not eligible under these prerequisites without consent of the instructor.

All courses designated by the symbol (+) are transferrable to the four-year institutions of the Oregon State System of Higher Education. Other courses with alphabetic prefixes may transfer as general education units at the discretion of the senior institution. Vocationally-numbered courses may also transfer, as agreements have been made in a number of curriculum areas with the various neighboring institutions to accept a specified number of vocational credits. Check with your advisor or a counselor for information if you are interested in a vocational course and do plan to transfer at the end of your time at Chemeketa.

Courses numbered 9.000 - 9.999 are ungraded courses offered to meet special vocational needs. These are primarily *short-term technical* or business courses designed to improve job competency, and with very few exceptions do not accumulate credit toward a degree. Some curriculums, however, accept them as electives; hence they are considered part of a full course load for students receiving financial aid of various types. Check with your advisor or counselor to determine their applicability to your curriculum.

Chemeketa offers many personal enrichment and special *vocational courses which are not* listed here. Schedules of these courses are printed quarterly. Call the community services or campus information phone listing for information on courses offered in your area of interest.

Anth101 + Human Evolution 3 0 3
An examination of human evolution—both physical and cultural. Focuses on evolutionary concepts and processes, genetics, the fossil record, primate classifiction and the myth of race. Provides an understanding of what it is to be human and our place in nature. No prerequisite necessary.

Anth102 + Archeology 3 0 3
A study of prehistoric development, archeological method and theory, and dating techniques, with emphasis on the agricultural revolution and its antecedents and the foundations of new and old world civilization.

Anth103 + Introduction to Cultural Anthropology 3 0 3
A survey of culture and its relationship to human nature examining cross-cultural methodology and anthropological theory. Provides a general over view of human language, economic systems, technology, sex and social organization, governmental forms, art, religion, warfare and play. Investigates the problem of controlling culture and managing our social selves.

***Anth207* + *Cultural Anthropology* 3 0 3**
An analysis of the concept of culture, its significance for human beings, its diverse forms and degrees of elaboration among different groups of people with special emphasis on the divisions of anthropology and rise of anthropological theory. Also covered are the structure of language and its role in cultural transmission, the varieties of human subsistence patterns and technologies, and the interdependence of heredity, society, and environment.

***Anth208* * + *Cultural Anthropology* 3 0 3**
A study of the variety of human social organiztions and political forms and the nature of cross-cultural belief systems. Includes an examination of art and ritual.
Prerequisite: Anth207 recommended.

Anth209 * + Cultural Anthropology 3 0 3
An exploration of the processes of cultural growth and expansion and the nature of culture change. The nature of culture as it relates to such conditions as acculturation and assimilation, the implications of programs of technical assistance to developing nations, and ethics of applied anthropology.
Prerequisite: Anth207 or 208 recommended.

Art195, 196, 197 + *Basic Design 2 2 3
These courses form a three term introductory sequence involving a series of studio participation exercises involving the basic principles of design. Two hours studio-lecture with outside assignment for each hour of credit.
Prerequisite: Courses taken in sequence or consent of instructor.

Art201, 202, 203 + Survey of Visual Arts 3 0 3
This art appreciation course is designed to provide the student with a basis for qualitative discrimination among works of architecture, landscape architecture, the crafts and industrial design, photography and the motion picture, illustration and printmaking and easel and mural painting. Although selected examples from various cultures of the past are made the objects of intensive case studies, along with examples from immediately contemporary cultures, no attempt is made to follow the history of art, whether occidental or oriental, from prehistoric times down to the present.

Art204, 205, 206 Introduction to the History of Art 3 0 3
A historical survey of the visual arts from prehistoric to modern times. Selected works of painting, sculpture, architecture and other arts are studied in relation to the cultures producing them. Designed for both non-major and major students.

Art255 Pottery I—Handbuilding 0 6 3
To introduce the beginning ceramic student to three dimensional design, shape and form. Building basic construction techniques, and becoming acquainted with the medium.

Art256 Pottery II—Wheel Throwing 0 6 3
This course is organized to introduce each student to wheel throwing methods in ceramics. Students will further pursue glaze calculations and kiln firing. Each student will be responsible for loading, firing, and unloading the kiln. Kilns, maintenance and styles will be thoroughly discussed.
Prerequisite: Pottery I—Handbuilding.

Art257 Pottery III—Advanced Pottery 0 6 3
Expanding on basic techniques, students are encouraged to pursue their individual directions and ideas. Marketing, sales, and public showing of one's work will be emphasized.
Prerequisite: Pottery II.

Art260 General Photography 2 4 3
This course covers fundamental and technical aspects of photography including types of cameras, f/systems, shutter speeds, film types and specifications, developing, basic enlarging, composition, familiarity with basic materials and processing, vocabulary and equipment. Designed for students who are interested in photography as a part of their general education. Directed photographic assignments and photo lab work are included. Students will be responsible for supplying camera, film, paper, exposure meter, tripod and flash. Cost of film and paper is between $35 and $75 per quarter. The college will furnish enlargers, chemicals and other incidental darkroom equipment.

Art261 Intermediate Photography 2 4 3
This course is designed as a continuation of the basic photography course. This course will cover somewhat more complex aspects of photography including familiarity with varied materials and processing techniques, such as light measuring, gamma, densitometry, interpretation of and uses of technical data with an eye toward improving the design and aesthetic approaches to photography. Uses of darkroom techniques, densitometers, and special films and special developers will be incorporated into project-oriented assignments.

Art281 *Printmaking 0 3 3
An introduction to techniques of silkscreen printing.
Prerequisite: Art291A or consent of instructor.

Art290 +*Painting 0 6 3
This course is intended as an introduction to painting problems. Emphasis will be placed on learning basic, fundamental skills and approaches to traditional subject matter. The course will stress disciplined study, observation and representation. Demonstration of an awareness of compositional considerations, the importance of close observation of detail, problems and solutions in the use of color and the potential of painting for personal expression. A student may receive up to nine hours in this course toward an A.A. degree.
Prerequisite: Art291A or consent of instructor.

Art291A Beginning Drawing 3 6 3
Introduction to the basic principles of drawing, seeing and observation. Emphasis is placed on developing traditional skills with a variety of drawing media. Variety of subject matter, from still life to photographic imagery, concluding with a brief introduction to figure drawing.

Art291B *Intermediate Drawing 3 6 3
Further exploration of media and subject matter with a concentration on life drawing.
Prerequisite: Art291A.

Art291C *Advanced Drawing 3 6 3
Continuation of drawing problems introduced in the earlier course with an emphasis on the develoment of personal style and expression, exploration of personal imagery, and mixed media approaches.
Prerequisite: Art291B.

Art292 +*Watercolor 0 6 3
An introduction to printing problems and the technique and use of watercolor. Emphasis will be placed on learning fundamental skills and approaches to traditional subject matter. Special attention will be given to the characteristics of watercolor as a medium, compositional problems, color problems, observation or detail and the potential for personal expression.
Prerequisite: Art291 or consent of instructor.

Art293 +Elementary Sculpture 0 6 3
An introduction to materials and elementary considerations of form—technical and compositional exercises in clay, plaster, wood and stone. A two-hour studio period for each hour of credit.

AtS101 Rudiments of Meteorology 3 0 3
This course is a descriptive treatment of meteorology which includes a discussion of winds, air masses, fronts, clouds, wave cyclones, and precipitation. A knowledge of science is not a prerequisite.

BA101 +Business Environment 4 0 4
This course is designed to acquaint the student with the inter-relationships of business, government and society. The defined and/or established roles of members of the business community. Ethics and social responsibility are emphasized. Attention is also given to employment opportunities in the various disciplines of the business field.

BA131 Introduction to Data Processing 3 0 3
The concepts, elements and structure of business data processing systems including the classifying, calculating and reporting functions, programming and computor fundamentals.

BA200 Perspectives in Business Methodology 3 0 3
Forum for special course offerings focusing on special issues in business and management program specialities by visiting instructors or regular faculty. Designed to provide opportunities for presentation of current trends in various functional areas of business.

BA206 Business Management Principles 3 0 3
Analyzes current and historical theories of leadership and motivation, group processes, organizational structure, personnel policies, managing change, effective communication, and decision-making. These subjects are then synthesized via case studies and various reports.

BA211 +*Financial Accounting I 4 0 4
Study of the accounting profession including recording transactions, adjustments, financial statements, worksheets, closing entries, accounting for merchandising concerns, cash and accounts receivable, notes and interest, and payrolls. Intended for those students in the accounting curriculum and/or students transferring to four-year institutions.
Prerequisite: Concurrently enrolled in Business Math 4.201, 6.918, Math 10 or higher math, or consent of instructor.

BA212 +*Financing Accounting II 4 0 4
Study of accounting for plant and equipment, intangible assets, accounting principles, partnerships, corporate organization and operation, corporate stock transactions, corporate retained earnings and consolidations, inventories and cost of goods sold, long term liabilities, investments and statement of changes in financial position.
Prerequisite: BA211.

BA213 +*Managerial Accounting 4 0 4
Study of the role of the accountant in the organization, cost terms and purposes, cost-volume-profit relationships, budgeting, systems design, standard costs, flexible budgets and overhead control, standard absorption costing, income effects of alternative product-costing methods and relevant costs and the contribution approach to decisions.
Prerequisite: BA212, 6.925 or consent of instructor.

BA214 +*Business Communications 3 0 3
The study of the purpose and effectiveness of communications in business. Analysis and writing in simulated business situations including business letters, memorandums and reports.
Prerequisite: Business English 2.673, Wr122 or the equivalent.

BA215 *Cost Accounting 3 0 3
A course designed to analyze methods of detailed and specific identification of cost elements within the business enterprise especially job order, process and standard cost accounting systems and their related theory. The major emphasis is on principles, techniques and managerial use of cost accounting data and the use of budget and perfor-

mance reports, as they relate to cost accounting.
Prerequisite: BA213.

BA216 *Income Tax Accounting 3 0 3
The comprehensive study of income tax withholding, individual income taxes, form 1040, declaration of estimated taxes, supporting schedules and forms for individuals and special tax situations for individuals.
Prerequisite: BA211 or 6.923 or consent of instructor.

BA217 *Business Machines 1 3 3
Instruction in the operation of mechanical printing, electronic display and electronic printing calculators. Solving business problems with calculators is stressed.
Prerequisite: Introduction to Calculators 2.658 or consent of instructor.

BA222 *Financial Management 3 0 3
A description of managerial finance and how financial decisions affect society at large. Topics to be discussed include the tax environment, ratio analysis, financial planning and control, current asset management and term loans and leases.
Prerequisite: BA212 or 6.924.

BA223 *Principles of Marketing 3 0 3
Functions of marketing from marketing research and product development to the sale of a product or service and feedback of consumer acceptance. Emphasis on marketing planning and strategy as dictated by the consumer. A preview of marketing which will serve as a foundation for advanced marketing courses.
Prerequisite: Business Environment BA101 or consent of instructor.

BA224 *Introduction to Marketing Research 3 0 3
A course dealing with research design and the development of information gathering systems as it applies to marketing. Use of secondary and primary data and the interpretation of information gathered.
Prerequisite: One term of psychology or sociology.

BA226 + *Business Law I 3 0 3
The nature and function of the law in our business society, obligations arising out of tort, formation and performance and discharge of contracts.
Prerequisite: BA101 or consent of instructor.

BA227 *Business Law II 3 0 3
A continuation of BA226. Includes legal aspects of business associations, sales and commercial paper and property.
Prerequisite: BA226.

BA229 Consumer Finance 3 0 3
The study of the role of the consumer in our society including consumer decision-making, money and material happiness, consumer credit and borrowing, consumer food shopping, consumer clothing management, home ownership, family transportation, health care and services, social security, life insurance, annuities, estate planning, wills, trusts and consumer protection.

BA231 *Business Data Processing (COBOL) 3 3 4
Application of computers to business data processing using COBOL. The development of a common business-oriented computer language and its use in modern business organizations. Comparison of COBOL with other automatic programming languages.
Prerequisite: BA131.

BA232 + *Introduction to Business Statistics 3 0 3
Elementary statistical techniques to aid decision making in the business environment. Includes populations and samples, estimating, hypothesis testing, analysis of variances, indexes and time series.
Prerequisite: Mth095.

BA238 *Salesmanship 2 2 3
The role of sales as an integral part of the total marketing function. The application of selling to the behavioral sciences is included with special emphasis on sales, psychology, sales techniques and the fundamental principles of sales communications.

BA239 *Principles of Advertising 3 0 3
An examination of advertisements within each segment of the media. The relative merits of several media are then explored. Practice in the planning and analysis of complete advertising campaigns and their coordination with other marketing strategies.
Prerequisite: Business Environment BA101 or consent of instructor.

BA241 Risk and Insurance 3 0 3
Concepts of risk, probability and insurance and the role of insurance in the management of risk. An examination of the underlying legal principles and common elements of most insurance contracts. Special emphasis on the roles of insurance from the viewpoint of the consumer, business and personal applications of the major types of property and liability insurance, and life and health insurance, with emphasis on underlying economic need each is designed to meet.

BA250 *Small Business Management 3 0 3
A study of general functions and procedures used in operation of a small business. An introduction to the basic aspects of managing a small business. The five management functions of planning, organizing, staffing, actuating and controlling are applied in the areas of a small business.
Prerequisite: Second year standing or consent of instructor.

BA251 Office Management 3 0 3
A study of the broad scope of responsibilities of the administrative manager. Includes portrayal of the centralization of office services necessitating a knowledge of planning, organizing and controlling of business services, systems and procedures.

BA260 Real Estate Principles I 3 0 3
A study of the nature, importance and character of real property, the real estate business, the real estate market, the real estate brokerage, taxes and assessment, and contracts and ownership.

BA261 *Real Estate Principles II 3 0 3
A continuation of BA260, this course deals with land use, taxation, valuation, planning, zoning and development with emphasis on their relationships to economic and social problems. Property management, brokerage, appraisal and escrow functions are examined as they relate to the overall real estate community and its participants.
Prerequisite: BA260 or consent of instructor

BA262 *Real Estate Transactions 3 0 3
A sheltered insight into the workings of real estate transactions. Students are expected to become conversant with various contracts, deeds, mortgages and other documents and forms commonly used in the transfer of ownership of real property. It is expected that some field work will involve public records and title plant data.
Prerequisite: BA263 and BA264.

BA263 *Real Estate Law 3 0 3
The complexities of Oregon real estate law presented to enable the student to identify when he is dealing in a problem area with a client and recognize the necessity of and services available from a competent attorney specializing in real property. The agent's role in the agency relationship between broker and client.
Prerequisite: BA260 or consent of instructor.

BA264 *Real Estate Finance 3 0 3
The operation of real estate mortgage market and its ability to compete with other desired products purchased on credit. Forces that modify the operation of the mortgage market, and the availability of funds, lending policies and methods of financing real property.
Prerequisite: One course in real estate principles or practices.

BA269 Principles of Bank Operation 3 0 3
This course presents the fundamentals of bank functions in a descriptive fashion so that the beginning banker may acquire a broad (and operational) perspective. The descriptive orientation is intentional. Banking is increasingly dependent upon personnel who have the broad perspective so necessary for career advancement.

BA270 Money and Banking 3 0 3
This course presents the basic economic principles most closely related to the subject of money and banking in a context of topics of interest to present and prospective bank management. The course stresses the practical application of the economics of money and banking to the individual bank. Some of the subjects covered include structure of the commercial banking system, banks and the money supply, bank investments and loans, the federal reserve system and its policies, and the international monetary system.

BA277 Business Ethics 3 0 3
A comparative study of ethical and economic systems designed to increase decision-making capabilities. Emphasis on issues and policy formation in varied business settings.

BA278 Law and Banking 3 0 3
An introduction to basic rules of American law which underlie banking. Topics include jurisprudence, the court system and civil procedure, contracts, quasi-contracts, property, torts and crimes, agencies, partnerships, corporations, sales of personal property, commercial paper, bank deposits and collections, documents of title, and secured transactions. Emphasis is on uniform commercial code.

BA280 Bank Management 3 0 3
This course presents new trends which have emerged in the philosophy and practice of management. The study and application of the principles outlined provide new and experienced bankers with a working knowledge of bank management.

BA281 Installment Credit 3 0 3
In this course, the techniques of installment lending are presented. Emphasis is placed on establishing the credit, obtaining and checking information, servicing the loan, and collecting the amounts due. Each phase of a bank's installment credit operation is carefully scrutnized. Other topics discussed are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending.

BA286 Credit Union Accounting 3 0 3
Credit union accounting concentrates on basic accounting principles and procedures used by credit unions. Knowledge of these princples and procedures is important for all employees of credit unions whether or not they are directly involved in accounting operations.

BA287 Credit Union Directorship 3 0 3
This course is designed to give the student knowledge of the role, function, authority and potential liability of the director's position in a credit union. Basic responsibilities of the director will be covered from the point of view of historical development of the credit union movement, common practice, as well as federal and state law.

BA288 Credit Union Management 3 0 3
Managerial and financial aspects in credit union operations and management under both the federal and state laws are covered in this course. Main topics include managerial accounting practice, financial analysis and credit union structure.

BA289 Credit Union Law 3 0 3
Coverage of the federal and state laws under which a credit union must operate. All aspects of the Credit Union Act will be reviewed.

BA290 Financial Counseling 3 0 3
The need for financial counseling is explored, different types of counseling will be discussed and ideas for action will be generated.

BA291 Savings and Loan Accounting 3 0 3
Savings and loan accounting concentrates on basic accounting principles and procedures used by savings associations. Knowledge of these principles and procedures is important for all employees of associations, whether or not they are directly involved in accounting operations.

BA292 Savings Association Operations 3 0 3
An introduction to the business, this course takes a look at the particular financial and management operations of the savings and loan association. The concept of money and its flow to and from associations, its movement to and from assets, liabilities and capital, as measured periodically by the balance sheet, the income statement and other reports are the main topics of study. In addition, handling savings flows, home mortgage loans, other investments and branch operations are detailed. Consideration is given to the effect of taxes on operations, the impact of the computer in operating and managing the business, and the increasing financial complexities of savings associations.

BC10A, 10B, 10C Basic Communication 0 0 1
Many Chemeketa students find a need for aid in basic communication. Deficiencies in this area may be corrected by assistance offered in the study skills center. Services include individual tutoring, writing skills, how to listen cassette tapes, spelling and punctuation, speech cassette tapes, grammar, taking lecture notes.

Bi101, 102, 103 +General Biology 3 3 4
An introduction to biological principles as applies to ecology and populations. Introduction to lower plants and animals of ecosystems. Emphasis on the cell structure and function, introduction to organismal biology, and Mendelian genetics with concentration on human genetics and related disease.

Bi110 Life Science Principles 3 3 4
This course includes core concepts and principles of life sciences specifically for health workers, from microbiology to biochemistry and physics.
Prerequisite: Ch101 or acceptable score on chemistry test.

Bi121 *Human Anatomy and Physiology 3 3 4
Structure and functions of the human body beginning with the single cell and continuing through tissues, organs and body systems.
Prerequisite: Ch101, Bi110, high school chemistry or permission of instructor.

Bi122 *Human Anatomy and Physiology 3 3 4
See Bi121.
Prerequisite: Bi121 or permission of instructor.

Bi123 Microbiology 3 3 4
An overview of the various micro-organisms (bacteria, algae, fungi, protozoa, viruses) and their effects upon man and the environment.

Bi124 *Medical Microbiology 3 3 4
A continuation of the survey of bacteria and other microorganisms emphasizing their impact upon human health. Includes discussion of infection, immunity, common pathogens and methods of mechanisms of control.
Prerequisite: Bi110 or Bi123.

Bi125 Advanced Topics in Microbiology for Laboratory Tech 3 0 3
This course is designed to meet the continuing education needs of community laboratory technologists, presented at the level commensurate to the MT (ASCP) registry educational training and experience; however, the course is not limited only to those who hold this registry. The course will consist of in-depth discussion of current technologic procedures and biologic basis of common human infectious diseases. At the end of successful completion of the course, the laboratory technologist will be able to more efficiently function as a team member of the health care system.

Bot201, 202, 203 *General Botany 3 3 4
An introductory study of plant life dealing with principles of plant biology. Covers introductory ecological principles, cell structure photosynthesis, respiration, genetics and evolution of the plant kingdom including bacteria, algae, fungi, mosses, ferns, conifers and flowering plants.
Prerequisite: Completion of high school biology and chemistry with a grade of 'B' or better.

BS202, 203, 204 Introduction to Afro-American History 3 0 3
An introductory course designed to provide students with a factual framework and conceptual foundation to analyze the history of the black race in the new world. Primarliy a lecture-discussion format augmented with speakers and films, the course will trace the pertinent contacts between the African and European worlds from ancient times to the present. Special consideration will be given to developing in the student the skill to re-examine traditional hsitorical concepts and information from the perspective of the black experience.

BS261 Black Economic Experience 3 0 3
An introductory sequence designed to provide students with the historical context and development of contemporary urban and black economic parameters. This sequence will begin with the Civil War through early black business enterprises. This course is primarily a lecture-discussion format, augmented with speakers and film.

BS262 Black Economic Experience 3 0 3
The modern 'city-state' of megalopolis will be approached as a special type of urban structure whose inner perimeters circumscribe the majority of America's black population. The classic structure with its real or implied economic opportunities will be balanced against the realities of the current situation.

Ch100 Chemistry, Man and Society 3 2 4
A one term introductory course for students who have little or no background in chemistry. Includes atomic structure, nuclear power, bonding, plastics, energy, food products, water and air pollution, drugs and poisons.

Ch101 +Consumer Chemistry 3 2 4
A general introduction to chemical principles, including atomic structures, states of matter, chemical reactions, thermodynamics and energy. This is followed by chemistry of life, including carbohydrates, lipids, proteins and nucleic acids. The course ends with a look at the chemical processes in the ecosphere.

Ch102 +Consumer Chemistry 3 2 4
A study of chemistry and consumer materials including food and food additives, poisons, drugs, plastics, fuel sources and energy alternatives, and nuclear chemistry and the nuclear energy option.

Ch103 +Consumer Chemistry 3 0 3
A survey of the major air and water pollutants and their effects on the environment. A close look at the pesticide dilemma and alternative methods of insect control. Concludes with a look at the future and what we must do.

Ch104, 105, 106 +*General Chemistry 4 3 5
An introduction to the field of chemistry providing an understanding of the structures of atoms, molecules, and ions and their interactions, and a foundation for the further study of chemistry. Three lectures, one lecture-discussion, and one three-hour laboratory period.
Prerequisite: Math 095 or equivalent.

Ch204 +*General Chemistry 3 5 5
A professional course for students majoring in science and related professional fields. Includes atomic structure, stoichiometry, bonding, (atomic and molecular orbital theory) oxidation-reduction, chemical reactions and gas laws.
Prerequisite: One year of high school chemistry and Math 095.

Ch205 +*General Chemistry 3 5 5
A continuation of Ch204 with emphasis on crystal theory, changes of state, properties of solutions, thermodynamics, kinetics, chemical equilibrium, and acid-base theory.
Prerequisite: Ch204.

Ch206 +*General Chemistry 3 6 5
A continuation of Ch204 and Ch205 with emphasis on ionic equilibria, electrochemistry, spontaneity, coordination compounds, radioactivity and organic chemistry.
Prerequisite: Ch205 or Ch106.

Ch226, 227 *Organic Chemistry 3 6 5
Chemistry of the carbon compounds, the aliphatics, aromatics and derivatives.
Prerequisite: For Ch226: Ch106, Ch206. For Ch227: Ch226, Ch207.

Ch228 Introduction to Biochemistry 3 0 3
An introductory course in biochemistry highlighting the structure, biological function, biosynthesis, and breakdown of molecules found in living cells, for students majoring in biology and biology-related disciplines and for students generally interest in biochemistry.

Ch234 +*Quantitative Analysis 3 6 5
The fundamental principles of quantitative analytical chemistry including gravimetric, volumetric and limited instrumental methods. Designed to satisfy the requirements in quantitative analysis for pharmacy, pre-medical, pre-dental and medical technology students.
Prerequisite: Ch206 or consent of instructor.

CJ100 Survey of the Criminal Justice System 3 0 3
A review of the court systems and procedures from occurrence of criminal violation to final disposition. Covers the six primary functional areas of administration of justice and reviews the principles of federal, state, criminal and civil laws as they apply to and affect law enforcement.

CJ101 Criminology 3 0 3
Factual materials pertaining to control of crime are related to sociological and psychological theories of punishment and treatment. Imprisonment, probation, parole, etc., are identified as society's reactions to crime and variations of these reactions are studied. Operations of police departments, court probations and parole departments and persons are examined.

CJ110 +Introduction to Law Enforcement 3 0 3
An orientation in law enforcement, history and philosophy of enforcement of criminal laws, administration of justice, etiology of criminal behavior, correctional treatment and professional career opportunites.

CJ112 Traffic and Patrol 3 0 3
This course covers routine and emergency police patrol of public education, enforcement, and engineering. Preparation necessary to effective handling of such major divisions of a police department.

CJ121 Oregon Criminal Code 3 0 3
Comprehensive coverage of the Oregon criminal code sections as they relate to offenses against persons, against habitation and occupancy, against property, against morality and decency, against public order and against sovereignty and the administration of governmental functions.

CJ131 Introduction to Penology 3 0 3
A basic introductory overview of the current role of imprisonment as a correctional tool, together with a survey of

some of the more significant activities involved in the treatment of prisoners.

CJ132 Introduction to Parole and Probation 3 0 3
An introductory survey of the basic principles and techniques involved in the correctional programs of probation and parole, together with a critical analysis of their individual roles in the administration of criminal justice.

CJ140 *+Introduction to Criminalistics 3 4 5
A survey of the basic principles and techniques involved in criminalistics and definitions and distinctions between criminal investigation and criminalistics. Criminalistics laboratory must be taken concurrently.
Prerequisite: CJ223 and CJ210 or consent of instructor.

CJ143 Personal Identification 2 2 3
The science of fingerprints in law enforcement work. Includes techniques and procedures involved in classification, latent prints and imprints, chemical treatment of questioned evidence for the development of fingerprints and court room presentation.

CJ150 Introduction to Security Systems 3 0 3
A study of alarm and protection devices, protective patrol and internal precautionary procedures in administration of security programs in business and industry. Includes protection against burglary, robbery and industrial espionage. Consideration is given to prevention of lawsuits and certain business frauds. Emphasis is on planning and implementation of well-rounded program in these areas.

CJ200 +Introduction to Community Relations 3 0 3
A survey of the role of the police in a changing community. It explores the subject of racial and community tension and minority group crime, social forces in the community and factors relating to police image.

CJ201 +Juvenile Delinquency 3 0 3
Examines facts of crime and delinquency and relates them to data including variations of crime and delinquency rates with age, sex, race, poverty, educational status, urbanization and other variables. The incidence among criminals and delinquents of various biological, psychological and social traits, characteristics and processes is also discussed.

CJ203 *Issues in Criminal Justice 3 0 3
A forum for special course offerings focusing upon special issues in criminal justice by visiting instructors or regular faculty.
Prerequisite: Consent of instructor.

CJ204 *+Seminars in Criminal Justice 3 0 3
Workshops designed for personnel staffing management positions in the criminal justice system, focusing upon solutions to particular administrative problems.
Prerequisite: Consent of instructor.

CJ210 +Introduction to Criminal Investigation 3 0 3
Introduction to the history and theory of the fundamentals of criminal investigation from crime scene to court room. Includes scientific techniques, psychology of the offender and recent pertinent court decisions.

CJ215 Criminal Justice Administration 3 0 3
A survey of the administrative practices of criminal justice agencies. Administration in the public sector including topics in organizational theory, public management and policy making in criminal justice. Special emphasis will be given to agencies in law enforcement and correction.

CJ216 Criminal Justice Management 3 0 3
A course designed to familiarize the student with principles related to evaluating, testing and selection of personnel, as well as supervision and advancement evaluations. Both general and specific testing and evaluating procedures are studied and practiced.

CJ218 Police Personnel Seminar 3 0 3
A study of the police profile, employment applications and resume testing techniques and criminal justice personnel problems arising from communications reporting, and attitudinal conflict difficulties. All aspects are studied both from the employer and employee's viewpoint.

CJ220 +Introduction to Substantive Law 3 0 3
Introduction to the origin and structure of common-law crimes and procedures as well as statutory crimes. Definitions and distinctions between criminal and civil law, criminal court procedures, criminal law case reading, federal and state law and Oregon criminal code sections.

CJ221 Criminal Law II 3 0 3
A continuation of CJ220. Further study of the administration of governmental functions.Concepts of imputability, causation and intent are discussed in detail.

CJ223 +Rules of Evidence 3 0 3
Survey of basic principles of the law of criminal evidence with emphasis on the role of the investigator in collecting, preserving and introducing evidence in court. Discussion of current court decisions as they affect the rules of evidence.

CJA227 Introduction to Constitutional Law 3 0 3
An intensive study and analysis of the U. S. Constitution, a study of court decisions which determine the admissability of evidence in criminal cases and which affect police procedures, and a consideration of the criminal procedure process with an emphasis on the role of law enforcement in this process.

CJ228 Moot Court 2 3 3
A study of proper courtroom procedures with emphasis on the part played by the police witness. The proper attire for the witness, his demeanor in court, his manner of response to questioning and his maintenance of a strictly unbiased and impartial attitude are reviewed and studied. The student participates in moot court sessions gaining experience in court procedures.

CJ230 Introduction to Juvenile Corrections 3 0 3
An introductory perspective of the historical and contemporary aspects of the juvenile offender including examination of juvenile court philosophy and current treatment programs.

CJ231 Introduction to Corrections Process 3 0 3
An analysis of the historical and contemporary background of the adult offender with emphasis on current prevention, control and rehabilitative programs.

CJ232 *Introduction to Corrections Casework 3 0 3*
An introduction to approaches of behavior modification through interviewing and counseling. An overview of the techniques available to entry level practitioners in corrections in counseling and interviewing. Traces the development of positive relationships between the client and the corrections personnel.

CJ240 Introduction to Legal Medicine 3 0 3
Correlation of findings of autopsy surgeon, criminalist and investigator, traumatic injuries, evaluation of wounds, time of death, rigor mortis, post mortem, lividity, basic investigative methods involving homicide, suicide, and natural and accidental deaths, report writing, courtroom testimony and basic terminology associated with autopsy reporting.

CJ241 Introduction to Toxicology 2 2 3
Recognition of pathological conditions caused by the action of a poison or toxin including specific product of the metabolic activities of a living organism upon introduction of poisons or toxins and the effects and investigative problems involved when poisons are either accidentally or purposefully ingested by the victim.

CJ242 Introduction to Firearms Identification 2 2 3
The various methods of scientific and technical analysis, comparison and identification of firearms, bullets, cartridges and related evidence.

CJ244 Questioned Documents 2 2 3
Analysis of handwriting, typewriting and forged and altered documents as they pertain to criminal justice and presentation of document evidence in court.

CJ251 Embezzlement and Shoplilfting 3 0 3
This course is designed to provide a general overview of security problems which develop from external theft (shoplifting) and internal theft (embezzlement) in retail establishments.

CJ252 Educational Security 3 0 3
An examination of the problems of establishing and maintaining a balanced and inclusive program of educational security. Included are routine patrol, parking and traffic control, investigations, key control and administration advisor in the case of riots, demonstrations and all other types of disturbances. A look at how to develop and maintain rapport with students, staff and faculty of educational institutions.

CJ253 Security Administration 3 0 3
A study of alarm and protection devices, protective patrol and internal precautionary procedures in administration of security programs in business and industry. Includes protection against burglary, robbery and industrial espionage. Consideration is given to prevention of lawsuits and certain business frauds. Emphasis is on planning and implementation of a well-rounded program in these areas.

CJ254 Transportation Security 3 0 3
A study of the problems of security in the transportation industry, including airlines, trucking lines and railway transportation. Emphasis is placed on hijacking and skyjacking. The skyjacker profile is analyzed and modus operandi in such crime studied. Equal stress is placed on protective measures and investigative operations in this broad field.

CJ256 Personnel Screening and Investigation 3 0 3
A study of the three aspects of screening and investigation of personnel. The actual screening and investigation of personnel in industry, business, education and government are scrutinized and alternate programs analyzed.

CJ258 Communications Security 3 0 3
Covers security measures pertaining to all police, industrial and commercial telecommunications systems, including computers, telephone, teletypes and radios. Reviews the legal and moral aspects of invasion of privacy relating to these matters.

CS213 Introduction to Symbolic Language Programming FORTRAN 4 0 4
Computer applications and elementary FORTRAN.

CT210 +Clothing Construction 0 8 3
The application of principles and techniques of construction and fitting to individual projects.

CT211 +Clothing and Man 3 0 3
Sociological, psychological, economic and aesthetic factors affecting the selection of clothing.

CT250 +Textiles 3 0 3
Properties, identification, selection, use and care of textile fibers and fabrics.

Ec100 Outline of Economics 3 0 3
An introduction to the fundamental concepts of economics basic to the American economic system. The approach is analytical rather than descriptive, dealing with the purpose of an economic system, the factors that business uses in producing goods and services, income analysis and modern fiscal policy, the American economy in relation to the world scene and contemporary problems of the American economy.

Ec201 Principles of Economics 3 0 3
An in-depth study of economic theory which includes definition of economics, economic systems, supply and demand and elasticity. Additional attention is given to national income and product, government spending, taxes, unemployment, inflation and stagnation, consumption, savings and investment, income and employment, fiscal policy, money and banking and the Keynesian model and the role of money.

Ec202 Principles of Economics 3 0 3
This course examines demand and consumer choice, business cost, firm competition, monopoly management, regulation wealth, capital and savings and income distribution.

Ec203 Principles of Economics 3 0 3
Trade among nations, financing world trade, trade and lending, the current balance of payments are issues examined in this course. In addition, public goods, externalities, population economics, less developed countries' economic growth, population and environment, taxes and comparative economic systems are reviewed.
Prerequisite: Principles of Economics EC201 or consent of instructor.

Ed110 Psychology of Learning 3 0 3
The student will distinguish between learning and teaching as two separate processes that do not necessarily go on simultaneously in the classroom. He/she will study and evaluate recent as well as established research on learning patterns, growth and development.

Ed111 Contemporary Education 3 0 3
Exploration of trends and educational practices in today's schools.

Ed112 School and Community 3 0 3
In this course the student learns to recognize the relationship of the school experience to the physical, social and intellectual development of the child in his or her environment.

Ed123 Tutoring and Instructional Practices for Paraprofessionals I 3 0 3
Students will demonstrate familiarity with the aide's role in assisting in the development of skills in math, science and social science.

Ed124 Tutoring and Instructional Practices for Paraprofessionals II 3 0 3
Students will demonstrate familiarity with the aide's role in assisting in the development of skills in language arts, writing and reading.

Ed128 School Office Skills and Procedures 3 0 3
Students will complete units on typing, filing, record keeping, copying machines, telephone answering, making appointments and other roles and responsibilities of office personnel.

Ed129 Introduction to Librarianship 3 0 3
Students will learn basic tasks and responsibilities of library work.

Ed131 Teaching Techniques 3 0 3
Survey of various methods of teaching in different subject matter areas, e.g. art, P.E., science.

Ed132 Evaluation Techniques 3 0 3
The student will study the evaluation of results as well as the evaluation of process. He/she will determine limitations of using grades and curves as well as the limitation of attempting to measure intelligence by intelligence or achievement tests. He/she will construct evaluation devices for his/her own teaching area.

Ed133 Instructional Media and Materials 3 0 3
This course is designed to train students to prepare and utilize the instructional media and materials commonly

found in public schools. Students will also develop an understanding of the place and importance of instructional media in the learning process, and the function and use of the instructional media centers (I.M.C.) in schools.

Ed207 Seminar, Education Aide Orientation 3 0 3
Introduction to the field of education and the occupation of education aide. Background of tasks, rewards, options, career ladders. Discussion of practicum experiences.

Ed209 Practicum, Introductory Observation and Experience 3 0 3
Work experience in a school for six hours a week. Designed to give students some basic exposure in classrooms to help decide if they wish to choose education as a career.

Ed210 Education, Practicum, Theory and Practice 1 15 6
Students assigned to school on a half-day basis to develop competencies in the social, psychological, cultural foundations of education. Teaching strategies, including the teaching of reading and operation of media equipment, classroom operation. Exchange of ideas, techniques and materials.

Ed221 PE/Playground Activities 3 0 3
The student will demonstrate activities in rhythms and movement education, in relays, games and races, in fitness activities and testing, in gymnastics and tumbling, and in outdoor activities. Students will also demonstrate familiarity with commercially made and "homemade" PE equipment.

Ed251 Introduction to Special Learner Problems 3 0 3
Review and survey of activities in special education. Students will survey and study areas, visit facilities, and meet persons in service to the handicapped in order to more appropriately make career choices in special education.

Ed255 Human Understanding 3 0 3
The student will study the history of minority cultures and other groups subject to discrimination in the United States. He/she will investigate means of enriching the learning process by utilizing the unique skills and experiences possessed by minority group members. He/she will understand the pervasive influence of poverty on individuals of any backgrounds.

Ed281 Intro to Vocational/ Technical Education 3 0 3
Contemporary programs and relation of industrial teacher to the total education enterprise.

Ed292 Occupational Analysis and Curriculum Development 3 0 3
Professional education experiences for industrial education teachers.

Ed296 Leadership Development 2 2 3
A course designed to develop leadership skills including the study of communication, organizational skills, creating goals and objectives, decision making and the group process. This course emphasizes skill building through simulated exercises, discussions and participation in leadership experiences.

Eng101, 102, 103 +Survey of English Literature 3 0 3
An examination of major literary documents and major authors. Lecture-discussion and individual study relate authors and genres to their historical, cultural, intellectual and esthetic context. Emphasis is placed on students' in-depth involvement in the issues of the literature, with attention to aesthetic analysis and the students' synthesis of literary issues with their own perceptions of contemporary life relationships. Interdisciplinary themes are studied through supplementary reading and popular entertainment forms, exploring continuity and divergence of cultural currents. Eng101 covers the period from Beowulf to the Renaissance in England, Eng102 from Milton to the romantic movement, and Eng103 from the last half of the romantics to modern British fiction.

Eng104 Survey of Fiction 3 0 3
Analysis of fiction literature through the reading of works in English and in translation. Eng104 introduces the short story and novel, basic literary concepts and terminology.

Eng105 Survey of Dramatic Literature 3 0 3
Eng105 studies drama with an international range of authors. Emphasis is placed on students' perceptions of literary issues and how they relate the issues to their own perceptions of life through discussion of basic dramatic conventions, characterization, theme, literary uses of language and setting.

Eng106 Survey of Poetry 3 0 3
Analysis of poetry through the reading of works in English and in translation. Eng106 introduces literary concepts and terminology for poetry, and explores types, elements and structures of poetry.

Eng107, 108, 109 +World Literature 3 0 3
A sequence to acquaint the student with outstanding works of ancient, medieval and modern literature that have had a permanent and wide appeal outside their own country.

Eng201, 202, 203 +Shakespeare 3 0 3
The study of Shakespeare's works centering on the formal elements—structure, characterization, setting, movement and imagery—as well as the more illusive elements of the plays—their larger meaning and value systems. The nature of Shakespeare's work will be analyzed in order to relate it to the larger mode of tragedy, comedy and the genre of drama. In addition to the plays, a number of essays in Shakespearean criticism relative to these plays will be assigned. The class will be conducted primarily through discussion. It is imperative that the student read carefully and come prepared to discuss the assigned materials. Eng201, tragedies; Eng202, comedies and Eng203, important Shakespearean plays.

Eng253, 254, 255 +Survey of American Literature 3 0 3
The selected genres (poetry, fiction, drama and expository, religious and critical prose) and works, from the beginning of American literature to present day, are discussed in relation to the way they imitate, interpret and direct our personal and social lives. Reading and assessing interpretive literature for personal enjoyment is stressed. Special emphasis will fall on written and oral discussion of assigned readings, encouraging all students to share their ideas with their peers, not just with the instructor.

Eng256, 257, 258 Minority Literature 3 0 3
A three-term sequence in minority literature which studies major writers of a specific group. The course will explore the individual vision of each writer and how that vision relates to an ethnic group, as well as group indentity. Eng256, Indian; Eng257, Black and Eng258, Chicano.

Eng261 Science Fiction 3 0 3
Study of science fiction including an international range of authors. Includes the study of character, setting, literary use of language, theme, history and types of science fiction.

FA250 Film & Video Arts 3 0 3
The technologic advances of electronic media require the development of additional literacy skills. This course will expose students to the aesthetic considerations and production techniques necessary for effective use of the new visual communications media, plus provide an opportunity to express this awareness in a media production.

FA251 Film Production 3 0 3
The student will learn to use camera, equipment and lighting to capture proper image, action and illusions of motion.

FA255 Introduction to Film Styles 1 4 3
Examination of the history, technique and art of film

through in-class film viewing and discussion. Emphasis will be on acquiring background and basis for evaluating film as an art form and an appreciation for a variety of stylistic approaches in the cinema.

FA256 Introduction to Film Directors 1 4 3
An analysis of films from the standpoint of the director—the creator. The term is devoted to the films of one or two directors in an effort to understand and critique the individual films as a work of a film artist, especially within the context of the films as a body of work expressing a particular and unique view of the world.

FA257 Genres and Themes of Films 1 4 3
An examination of a number of films representing a single genre (westerns, comedies, etc.) or expressing common themes in an attempt to focus on the various directors involved and the diverse styles, techniques and personal expression they bring to their subject.

FE201B-L Special Studies—
Cooperative Work Experience variable
Placement of the student in a business, industry or agency for on-the-job training/experience related to the student's on-campus instruction. This field experience is supervised by college instructors and work experience coordinators.

FE205 Job Search Techniques 1 0 1
A seminar course designed to help students find and apply for the job they want upon graduation. Included will be preparing oneself for the job-search process, preparing and writing the resume, sources of information about jobs, preparing for the interview, what is required in a job, and what the employer is looking for in an employee.

FL199 Personal Dynamics 3 0 3
Principles and techniques for establishing and maintaining effective human relationships, to include fundamentals of relationships, listening skills, ways to communicate feelings, verbal and nonverbal communication, problem solving, handling conflicts, creating a healthy emotional climate.

FL222 +Partner Relationship 3 0 3
A practical, functional course geared to all people interested in succeeding in marriage or close personal relationships. Exploration of wide range of possibilities that modern marriages have to offer, and options couples have in deciding on the kind of marital relationship that will fulfill both personal and mutual needs.

FL223 +Family Living 2 0 2
Marriage and relationships in the beginning family. Open to men and women.

FN225 +Nutrition 4 0 4
The relationship of food and its components to health with emphasis on the young adult. Current national and international concerns are considered.

Geog105 +Introductory Geography 3 0 3
An introduction to the physical elements of geography and the environment in which man lives. Focus is on the planet earth's waters, landforms, atmosphere, vegetation and soils. Students will also be introduced to the problems of graphically representing the earth and its significance to humankind.

Geog106 +The Cultural Environment 3 0 3
An introduction to man's cultural landscapes, cultural areas and integrative systems. Focus is on the study of the urban mosaic, political patterns, language, population, religion, agriculture and industry. Considerable attention is given to the study of ecologically oriented issues as they are related to the above topics.

Geog107 +Historical Geography 3 0 3
An introduction to the historical evolution of cultures in the context of man-land relations. Focus is on culture areas, culture diffusion, and cultural ecology in past times. Special emphasis is given to cultural landscapes in South Asia, the Middle East, Mediterranean Europe, Northwest Europe and the United States.

Geog199 The Urban Environment 3 0 3
This course concerns the development, evolution and problems of cities, with special emphasis upon the cities of Portland and Salem, and their metropolitan areas. The focus is upon the spatial and functional characteristics of cities, and upon the various problems of human adjustment in both their present and historic aspects.

Geog200 Environment and Man 3 0 3
Man's alteration of natural systems and environmental problems created by natural resources and energy development programs. Human activity at different times and places in regards to soils, climate, vegetation, land forms, and water.

GS104, 105, 106 +Physical Science 3 2 4
Fundamental principles of physics, chemistry, astronomy and geology, and man's relation to them, development and application of the scientific method. Students are advised to complete one year of high school algebra, or equivalent, as prerequisite to the course. May not be taken for credit if a student has completed six or more hours in a college-level course in chemistry or physics.

GS199 You and Your Environment 3 0 3
An inquiring course for everyone interested in studying the effects of pollution on our environment. The course will attempt to identify and study the sources, causes and effects of the problems of the pollution of our environment and possible ways to eliminate environmental pollution.

GS207 Astronomy 3 0 3
A descriptive treatment of historical astronomy, the earth coordinate system, the moon and solar system. No prerequisite.

GS208 *Astronomy 3 0 3
To provide the student an understanding of the nature of stars, including the sun, by examining the classification system for stars used by astronomers. The great variety of telescopes, both optical and radio, will be considered so that students will be able to understand how astronomers have gathered so much information about objects so far removed from Earth in space.
Prerequisite: GS207 or consent of instructor.

***GS209* *Astronomy 3 0 3**
A descriptive treatment of stellar evolution, the Milky Way galaxy, galactic and exgalactic systems and current theories on the nature of the universe.
Prerequisite: GS208 or consent of instructor.

***G101* Geology of Western Oregon 3 2 4**
An introduction to the evolution of the western Oregon landscape.

G102 Oregon Geology 3 2 4
Introductory level, requiring only elementary knowledge of basic earth science concepts, evaluation of Oregon's earth and mineral resources.

G103 Geology of Eastern Oregon 3 2 4
To develop an awareness of the exceptional nature of the geology of eastern Oregon, including establishment of a physical and temporal framework essential to the geologic interpretation of the region.

G199 Geological Field Studies 0 6 3
Geological formation, rocks and minerals of various areas with emphasis on paleontology. Studies will be accomplished in the field.

***G201, 202, 203* +Geology 3 0 3**
Earth materials, processes and structures and the history of earth and life.

G204, 205, 206 +Geology Laboratory

Laboratory and field work to accompany G201, 202 and 203.

He199A Seminar in Health Studies—Narcotics, Alcohol 3 0 3

Multidisciplinary study of the detrimental factors of our social environment and their effect on the body.

He199B Personal Health and Human Sexuality 3 0 3

A study of an individual's personal health attitude and behavior in relation to sexuality. Two major areas covered are (1) environmental conditioning and its relationship to identity, self-esteem, love and role definition and (2) physiology in relationship to environmental conditioning and human sexual response.

He250 +Personal Health 3 0 3

A study of personal health with emphasis on implications of family life, mental health, communicable diseases, degenerative diseases, nutrition, mood modifiers and consumer health.

He251 Community Health 3 0 3

A study of community health problems and related agencies. An overview of community health programs, health resources and the relationship of personal health to community health.

He252 First Aid 2 2 3

Theory and procedures for accident prevention and for providing first aid for a wide variety of illnesses and injuries in home, recreational, school and civil defense settings; leads to American National Red Cross standard or advanced first aid certification.

He260 Crash Injury Management 2 2 3

This 40-hour training program is designed specifically for the law enforcement officer, usually the first person at the scene of a traffic accident. It covers life-threatening emergencies including airway care, pulmonary and cardiopulmonary resuscitation, control of bleeding and prevention and control of shock. The practical aspects of emergency care required at an accident scene are emphasized.

He261 Cardiopulmonary Resuscitation 0 1 1

A combination of lecture, audiovisual presentation and mannequin practice in the principles and procedures of providing basic life support to victims of airway obstruction, respiratory arrest and/or cardiac arrest. Successful completion leads to certification in basic life support by the American Red Cross or the Oregon Heart Association.

He262 Cardiopulmonary Resuscitation Instruction 0 1 1

This course reviews basic life support, both theory and its application. In addition, instructional materials and methods of use in CPR courses are discussed. Successful completion provides instructor certification/recertification by the Oregon Heart Association.

He264 *Childhood Emergencies 1 0 1

First aid procedures for children and infants, safety, accident prevention, medico-legal and public health aspects of day care centers.

Prerequisite: He252 or consent of associate director.

HM250 +Home Management and Decision Making 3 0 3

The concepts associated with home management in various situations including values, goals, standards, decision-making, management processes and the use of human and material resources to meet individual and family needs.

Hst107, 108, 109 History of World Civilization 3 0 3

A survey of human cultural, social, economic and political development of the world's civilizations. The course will include: Hst107—from ancient times to 1500 A.D., Hst108—from 1500 to 1914, Hst109—the twentieth century.

Hst157 History of the Middle East and Africa 3 0 3

A survey of the human cultural, social, economic and political development in the Middle East and Africa.

Hst158 History of Latin America 3 0 3

A survey of human cultural, social, economic and political development in Latin America.

Hst159 History of Asia 3 0 3

A survey of human cultural, social, economic and political development in Latin America.

Hst201,202,203 +History of the United States 3 0 3

A study of the cultural, economic, social and political development of the United States. Hst201—1492 to 1865, Hst202—1865 to 1920, Hst203—1920 to 1970.

Hst210 Futurism, Alternatives for the Future 3 0 3

Examines trends of the past and present and uses this information to examine alternative futures. Demographic trends, technical innovations, cultural shifts and what cannot happen and what will happen if we behave in a number of specific ways.

Hst257 Introduction to Ethnic History, American Indian 3 0 3

The native American as a minority group with a culture, heritage, humor, self-consciousness and outlook. The history of the American Indian and his role in American history.

Hst258 Introduction to Ethnic History, Black American 3 0 3

The role of blacks in American history. Recounts and explains the experiences of America's largest minority group in its attempt to secure meaningful first-class citizenship.

Hst259 Introduction to Ethnic History, Chicano 3 0 3

Tracing and analyzing the various aspects of life and society of the Chicano. Focuses on the racial, cultural, educational, economic and political development of the Chicano in the United States.

Hs10AR-GR Health Care Skills 1 0 0

The health skills lab is the focal site for offering one-to-one and small group tutorial assistance to students in health related curricula. Services include individual tutorial help and assistance in developing competence and confidence in skills—interpersonal, technical-manipulative observation, interviewing, patient-client communications, first aid and emergency medical techniques.

J215 Publications Lab 0 4 2

Practical application of journalism through work on the student newspaper and related publications. A maximum of six hours.

J216 Newswriting 3 0 3

Study and practice of news gathering and writing of news stories. Learning newspaper style is emphasized. An introduction to feature writing is included. (This course is a recommended prerequisite or corequisite to J215).

J224,225,226 Introduction to Journalism 3 0 3

Survey and criticism of communication media, discussion of journalistic techniques. Fall term—news writing and editorial functions; winter term—advertising and public relations; spring term— production methods. The terms need not be taken in sequence.

MS199 +Oceans—Our Continuing Frontier 3 0 3

Oceans is a multi-disciplinary course focused on the sea. Then a relationship is developed between the sea and art and literature, science, myth, resources, politics, war and people. Then all facets and the sea are tied together in a practical application emphasizing the relationship of Oregonians and the sea.

MS199C Moral Choices 3 0 3
Today many Americans are perplexed and confused by rapid changes in the moral code—a moral code that now seems topsy-turvy to them. Many people are deeply concerned about the future of a society governed, in their view, by misconstrued notions of right and wrong and good and evil. Some of these troubling, and often controversial, questions are explored in this course.

MS199D Personal Journal Writing 2 2 3
This course is a structured experience in personal journal construction. Its purpose is to aid students in investigating, analyzing, understanding and relating to their past life so that their future decisions will be made more easily. This is an active writing course; there will be a minimum amount of emphasis on group interaction.

MS251,252,253 The Art of Discovery, Science, Philosophy and Society 3 0 3
This is an interdisciplinary sequence focusing on discoveries which have had special impact on world views, values and behavior. The objective is to show how scientific, philosophic and social enterprises relate. The courses are designed to integrate disciplinary insights; students are expected to see patterns which will help integrate their studies.

Mth010 Beginning Algebra 5 0 4
A basic course in algebra for students who have not had high school algebra and who need a review of algebra before enrolling in Mth095 Intermediate Algebra. A review of arithmetic operations and properties of real numbers. Introduction to linear equations, factoring, inequalities, algebraic fractions, exponents and graphs.

Mth095 +*Intermediate Algebra 5 0 4
The fundamental laws of algebra with the real numbers, linear equations in one and two variables. Linear inequalities, factoring, algebraic fractions, systems of linear equations, exponents, radicals, quadratic equations and inequalities and word problems.
Prerequisite: Completion with 'C' or higher of one year of high school algebra and one year of geometry or Mth010 or consent of instructor.

Mth101 +*College Algebra 4 0 4
The study of polynomials in algebraic expressions with equations and inequalities of various degree. An introduction to the concepts of relations and functions with real numbers and graphs in both two and three dimensions. Polynomial, rational, exponential and logarithmic functions are studied along with an introduction to complex numbers, matrices, determinates, sequences and series.
Prerequisite: Completion with 'C' or higher of two years of high school algebra and one year of geometry or Mth95 or consent of instructor.

Mth102 +*Trigonometry 4 0 4
A continuation of the study of functions by taking circular, trigonometric and inverse functions. Complex numbers are studied with vectors and graphing with polar coordinates.
Prerequisite: Mth101 with 'C' or higher or consent of instructor.

Mth103 +*Probability and Statistics 4 0 4
A one-term course designed as an introductory survey in the basic concepts of statistics and probability. A study of inferential methods and assessing reliabilities of numerical information related to all occupational fields. Application of formulas to problem solving is stressed over the mathematical theory.
Prerequisite: Mth101 with 'C' or higher or consent of instructor.

Mth106 +*Elementary Calculus 4 0 4
A one-term course with an intuitive approach to differential and integral calculus. The techniques of calculus in applied problem solving are emphasized. Designed primarily for students who are business, social science, life science or liberal arts majors.
Prerequisite: Mth101 with 'C' or higher or consent of instructor.

Mth11AC Math Study Skills 0 0 1/0 0 2/0 0 3
The math lab, located within the study skills center, offers individual and small group tutorial assistance to math students at Chemeketa in the following areas, individual tutorial assistance, math study skills techniques, basic math video casette and video tapes, slide rule cassette tapes.

Mth151 *Introduction to Programming, Basic 2 2 3
The student will study concepts, commands and statements of the basic language and write programs suited to his/her curriculum. Emphasis wil be on applications using a PDP 8 computer. The student will analyze a problem, flow chart, code, run and debug the program and interpret the machine output.
Prerequisite: Mth010 or Math 4.202 or consent of the instructor.

Mth191,192,193 +*Mathematics for Elementary Teachers 3 0 3
A three-term sequence in mathematics for prospective elementary teachers. The course is designed to partially fulfill the mathematical requirements for students majoring in elementary education. Emphasis is placed on the concepts, terminology and skills encountered in the K through 9 elementary school mathematics curriculum. Although the course is primarily the study of subject matter, several concepts are presented through concrete examples utilizing manipulative materials, games and activities. Mth193 includes field experience. Must be taken in sequence or obtain consent of instructor.
Prerequisite: Proficiency with whole numbers.

Mth199 *Math with Pocket Calculator 2 0 2
A course designed to aid the student in the selection and purchase of a pocket calculator that best fits his/her individual needs. The student is then taught how to use the calculator as an effective educational tool for basic mathematical operations, exponentials, logarithms and trigonometry. The emphasis is on applications of practical mathematics using the pocket calculator skills taught are appropriate to everyday living, vocational occupations and for developing concepts for further study in mathematics.
Prerequisite: Mth010 with 'C' or higher or consent of instructor.

Mth200 *Calculus with Analytic Geometry 4 0 4
First term of typical undergraduate calculus covering limits, continuity, the derivative, applications of the derivative and integration.
Prerequisite: Mth101 and Mth102 with 'C' or higher or consent of instructor.

Mth201 +*Calculus with Analytic Geometry 4 0 4
Second term of typical undergraduate calculus covering applications of the definite integral, exponential and logarithmic function, trigonometric and hyperbolic functions, techniques of integration.
Prerequisite: Mth200 with 'C' or higher or consent of instructor.

Mth202 +*Calculus with Analytic Geometry 4 0 4
Third term of typical undergraduate calculus covering polar form of equations, conic sections, indeterminate forms, infinite series.
Prerequisite: Mth201 with 'C' or higher or consent of instructor.

Mth203 +*Calculus with Analytical Geometry 4 0 4
Typical undergraduate course in multivariable calculus including vectors, partial derivatives, multiple integrals and their applications.
Prerequisite: Mth202 with 'C' or higher or consent of instructor.

Mus195 Band 1 0 1
No more than six hours credit may be earned in Mus195 and 197, singly or combined.

Mus197 Chorus 1 0 1
Classroom instruction for students in voice. Class activity is

centered around choir practice and performance. No more than six hours credit may be earned in Mus195 and 197, singly or combined.

Mus201,202,203 Introduction to Music and Its Literature 3 0 3
Cultivation of understanding and intelligent enjoyment of music through a study of its elements, forms and historical styles.

Mus50 +Basic Piano 0 2 1
Classroom instruction in basic keyboard technqiues.

Mus51 +Basic voice 0 2 1
Classroom instruction in basic voice.

Nur101 *Nursing 4 12 8
A study of concepts, skills and values basic to contemporary nursing. Emphasis is placed on meeting physio-psycho-social needs of people for health, including nursing skills, communications, nursing as an interpersonal helping process, growth and development and beginning skills in problem solving in a variety of nursing situations. Beginning roles in nursing careers are brought into focus. Theory, skills development and clinical experiences in nursing, including care of all age groups are correlated for each course in the nursing major.
Prerequisite: Enrollment in the nursing program.

Nur102 *Nursing 4 12 8
A continuation of the study of concepts, skills and values basic to nursing practice. An emphasis is placed on problem solving in a variety of nursing situations including growth and developmental patterns in maternal-child-family health and the effects of hospitalization on people through the life cycle with physical and mental illness. Nursing role differentiations are brought into focus.
Prerequisite: Nur101 or equivalent.

Nur103 *Nursing 4 15 10
Further study of the concepts, skills and values basic to nursing practice. Emphasis is placed on problem solving in nursing situations in common conditions of illness and the assisting role of nursing personnel in complex nursing situations, including integration of mental health concepts.
Prerequisite: Nur101, 102 or equivalent.

Nur201 *Nursing 4 12 8
A study of the concepts, skills and values basic to nursing continued. The role and responsibilities of the registered nurse are brought into focus. Emphasis is placed on the nursing process and the management of the patient care with priority setting of nursing needs of children and adults. A problem solving approach is used and greater depth of understanding of the nursing process is made throughout the sequence of study. Nursing 201 compares chronicity and acuity of illness, stress and adaptation and a holistic approach to basic needs of people in illness.
Prerequisite: Nur101, 102, 103 or equivalent.

Nur202 *Nursing 5 15 10
A continuation of the nursing sequence. Nursing 202 focuses on increasingly more complex nursing situations and the complexity of the RN role.
Prerequisite: Nursing 101, 102, 103, 201 or equivalent.

Nur203 *Nursing 5 15 10
A continuation of the nursing sequence. Nursing 203 emphasizes the care of groups of children and adults with multiple problems in crises and emergency situations and the leadership responsibilities of the RN in the management of patient care.
Prerequisite: Nursing 101, 102, 103, 201, 202 or equivalent.

Nur207 The Nurse at Work 3 0 3
A study of trends and practice in the nursing profession including organizational and structural elements and the social-cultural factors influencing the role of the new graduate as a member of a nursing and health team.

OS10A-C Occupational Study Skills 0 0 1/0 0 2/0 0 3
Many occupational students must correct educational deficiencies before they can succeed in their curriculum choice. The study skills center offers the opportunity for students to do further study in reading, writing, basic math, study habits and study methods.

PA250 Introduction to Public Administration 3 0 3
This course surveys the administrative practices of public agencies, with special emphasis on policy making in governmental organization, including topics on public management, organizational theory and behavior.

PA255 Public Personnel Administration 3 0 3
An introductory examination of the principles, concepts and decisions that govern the determination of public personnel policy. Special emphasis will be given to compensation plans, position classification, staffing, staff reductions, tenure, affirmative action and collective bargaining in the public sector.

PA266 Public Personnel Supervision 3 0 3
An examination of the supervisor's role in a public service environment. Special emphasis will be placed upon human relations, decision-making, leadership, communications and discipline for the first line supervisor.

PE131 +Introduction to Health, Physical Education And Recreation 3 0 3
Professional orientation, basic philosophy and objectives, professional opportunities and qualifications.

PE180 Physical Education—Women 0 1 1
A variety of activities taught for physiological and recreational values.

PE180BN +Basketball—Women's Varsity 0 3 1

PE180CL +Women's Cross Country—Varsity 0 3 1

PE180SP Softball—Women's Varsity 0 3 1

PE180TK Tennis—Women's Varsity 0 3 1

PE180TQ Track and Field—Women's Varsity 0 3 1

PE180VN +Women's Volleyball—Varsity 0 3 1

PE185AJ +Archery—Beginning 0 3 1
Basic fundamentals of archery including safety, history, care and use of equipment, basic rules and skills technique application of fundamentals to target shooting with emphasis on self-testing and improvement. Class competition in regulation and novelty shoots. Intermediate and advanced include more emphasis on shooting perfection, self-improvement and analysis of errors through more completion at varied distances and targets.

PE185AK +Archery—Intermediate 0 3 1
See Archery—Beginning.

PE185AL +Archery—Advanced 0 3 1
See Archery—Beginning.

PE185BA Badminton—Beginning 0 3 1
Beginning instruction in fundamental skills of serving, clears, drop, smash, backhand, singles and doubles play, terminology and rules. Intermediate includes practice in the overhead clear. Advanced covers perfection of techniques, skills and strategies through sophisticated drills and routines. Competitive play patterns emphasized.

PE185BB +Badminton—Intermediate 0 3 1
See Badminton—Beginning.

PE185BC +Badminton—Advanced 0 3 1
See Bandminton—Beginning.

PE185BE +Baseball—Beginning 0 3 1
Fundamental techniques of offensive and defensive play, rules, strategy and team play.

PE185BF +Baseball—Intermediate 0 3 1
See Baseball—Beginning.

PE185BG + Baseball—Advanced 0 3 1
See Baseball—Beginning.

PE185BJ + Basketball—Beginning 0 3 1
Fundamental skills and techniques of offensive and defensive play, rules, team play and competition. Increased skills and strategy levels in intermediate and advanced.

PE185BK + Basketball—Intermediate 0 3 1
See Basketball—Beginning.

PE185BL Basketball—Advanced 0 3 1
See Basketball—Beginning.

PE185BP + Billiards—Beginning 0 3 1
Fundamental skills, strategy and application of rules, etiquette and competitive play.

PE185BQ + Billiards—Intermediate 0 3 1
See Billiards—Beginning

PE185BR + Billiards—Advanced 0 3 1
See Billiards—Beginning.

PE185BS + Body Building—Beginning 0 3 1
Exercises to increase muscularity, muscular definition and muscular power. Primary objective is to develop the physique.

PE185BT + Body Building—Intermediate 0 3 1
See Body Building—Beginning.

PE185BU + Body Building—Advanced 0 3 1
See Body Building—Beginning.

PE185BV + Bowling—Beginning 0 3 1
Beginning—basic fundamentals, techniques, rules, scoring and social etiquette of bowling. Intermediate—perfection of straight ball delivery,introduction to hook and curve ball delivery and tournament plan.

PE185BW + Bowling—Intermediate 0 3 1
See Bowling—Beginning.

PE185BX + Bowling—Advanced 0 3 1
See Bowling—Beginning.

PE185CA + Conditioning—Beginning 0 3 1
Programs designed to meet individual needs. Circuit training and use of apparatus are included. Concern is given to cardiovascular development and special programs of exercise for all ages.

PE185CB + Conditioning—Intermediate 0 3 1
See Conditioning—Beginning.

PE185CC + Conditioning—Advanced 0 3 1
See Conditioning—Beginning.

PE185CD + Correctives—Beginning 0 3 1
Exercise programs of fitness or physical therapy for student with physical injuries, disabilities or handicaps. The corrective class is offered many times each day to accommodate the student.

PE185CE + Correctives—Intermediate 0 3 1
See Correctives—Beginning.

PE185CF + Correctives—Advanced 0 3 1
See Correctives—Beginning.

PE185CM + Cross Country Skiing —Beginning 0 3 1
Fundamental skills and techniques, types of equipment, first aid, orienteering, survival, leadership and route finding.

PE185CN + Cross Country Skiing Intermediate 0 3 1
See Cross Country Skiing—Beginning.

PE185CP Cross Country Skiing Advanced 0 3 1
See Cross Country Skiing—Beginning.

PE185CW + Cycling—Beginning 0 3 1
Cycling techniques including fitting bicycle to the individual, pedaling correctly, safety, maintenance and touring. Special emphasis on physical fitness through cycling.

PE185CX + Cycling—Intermediate 0 3 1
See Cycling—Beginning.

PE185CY + Cycling—Advanced 0 3 1
See Cycling—Beginning.

PE185DE + Dance, Folk—Beginning 0 3 1
Basic steps, skills and training in dances reflecting cultural traditions. Schottische, polka etc.

PE185DF + Dance, Folk—Intermediate 0 3 1
See Dance, Folk—Beginning.

PE185DG + Dance, Folk—Advanced 0 3 1
See Dance, Folk—Beginning.

PE185DJ + Dance, Modern—Beginning 0 3 1
Fundamentals of movement, techniques and use of axial and motor movements. Experience in dance composition to various media.

PE185DK + Dance,Modern—Intermediate 0 3 1
See Dance, Modern—Beginning.

PE185DL + Dance, Modern—Advanced 0 3 1
See Dance, Modern—Beginning.

PE185DR + Dance, Social—Beginning 0 3 1
Basic steps for dances such as the fox trot, tango, rhumba, mambo and current popular 'fad' dances.

PE185DS + Dance, Social—Intermediate 0 3 1
See Dance, Social—Beginning.

PE185DT + Dance, Social—Advanced 0 3 1
See Dance, Social—Beginning.

PE185DV + Dance, Square—Beginning 0 3 1
Basic square dance formation, singing calls, simple figures and invigorating activity.

PE185DW + Dance, Square—Intermediate 0 3 1
See Dance, Square—Beginning.

PE185DX + Dance, Square—Advanced 0 3 1
See Dance, Square—Beginning.

PE185FA + Fencing—Beginning 0 3 1
Initial position, on guard, salute, lunge and recovery, basic parries, basic attack and defense movements, fencing bouts and scoring.

PE185FB + Fencing—Intermediate 0 3 1
See Fencing—Beginning.

PE185FC + Fencing—Advanced 0 3 1
See Fencing—Beginning.

PE185FD + Soccer—Beginning 0 3 1
Fundamental soccer skills, position play, team formations, offensive and defensive team play and rules of the game.

PE185FE + Soccer—Intermediate 0 3 1
See Soccer—Beginning.

PE185FF + Soccer—Advanced 0 3 1
See Soccer—Beginning.

PE185FM + Fitness Appreciation-Beginning 0 3 1
Circuit training, jogging, running and exercise programs designed for lifetime activity with regard to fitness. Basic instruction in diet and nutrition as aids to physical and mental fitness.

PE185FN + Fitness Appreciation—Intermediate 0 3 1
See Fitness Appreciation—Beginning.

PE185FP + Fitness Appreciation—Advanced 0 3 1
See Fitness Appreciation—Beginning.

PE185FQ + Football—Beginning 0 3 1
Fundamentals, rules and strategy and team play.

PE185FR + Football—Intermediate 0 3 1
See Football—Beginning.

PE185FS + Football—Advanced 0 3 1
See Football—Beginning.

PE185GJ + Golf—Beginning 0 3 1
Basic fundamentals of golf such as grip, stance and mechanics of the swing. Use of irons, long irons, woods and putting. Rules of the game, social etiquette and actual playing of the game are included.

PE185GK + Golf—Intermediate 0 3 1
See Golf—Beginning.

PE185GL + Golf—Advanced 0 3 1
See Golf—Beginning.

PE185GN + Golf—Men's and Women's Varsity 0 3 1

PE185GP + Gymnastics—Beginning 0 3 1
Instruction and practice of gymnastic skills. Men's events include tumbling, floor exercise, vaulting, horizontal bars, parallel bars, still rings and side horse. Women's events include floor exercise, balance beam, vaulting and uneven bars. Conditioning exercises and mastery in routines are stressed.

PE185GQ + Gymnastics—Intermediate 0 3 1
See Gymnastics—Beginning.

PE185GR + Gymnastics—Advanced 0 3 1
See Gymnastics—Beginning.

PE185HA + Handball—Beginning 0 3 1
Basic fundamental techniques and rules, etiquette and single and doubles play. Perfection of techniques, strategy, singles and doubles competition.

PE185HB + Handball—Intermediate 0 3 1
See Handball—Beginning.

PE185HC + Handball—Advanced 0 3 1
See Handball—Beginning.

PE185JJ + Jogging—Beginning 0 3 1
Instruction and practice in the techniques of jogging. Development of cardiovascular endurance is stressed. Various systems of training are incorporated into the class. Students work according to their own abilities and physical condition.

PE185JK + Jogging—Intermediate 0 3 1
See Jogging—Beginning.

PE185JL + Jogging—Advanced 0 3 1
See Jogging—Beginning.

PE185JQ + Judo—Beginning 0 3 1
Instruction in fundamental personal defense skills, precautionary measures to insure one's safety, countering attacks, etc.

PE185JR + Judo—Intermediate 0 3 1
See Judo—Beginning.

PE185JS + Judo—Advanced 0 3 1
See Judo—Beginning

PE185KA + Karate—Beginning 0 3 1
Basic fundamental of karate including basic stances, inside and outside blocks, straight punch, rising block, kick block, front, side and back kicks, basic throws, come-alongs, and techniques of detaining and restraining subject.

PE185KB + Karate—Intermediate 0 3 1
See Karate—Intermediate.

PE185KC + Karate—Advanced 0 3 1
See Karate—Intermediate.

PE185LJ + Lifesaving 0 3 1
A wide range of elementary and advanced life-saving skills based on a high level of correct swimming techniques and physical conditioning. Based on Red Cross senior lifesaving.

PE185PA + Personal Defense—Beginning 0 3 1
Instruction in fundamental personal defense skills, precautionary measures to insure one's safety, countering attacks whereby various types of weapons are employed and development of a skill level that promotes self-assurance to reduce panic.

PE185PB + Personal Defense Intermediate 0 3 1
See Personal Defense—Beginning.

PE185PC + Personal Defense—Advanced 0 3 1
See Personal Defense—Beginning.

PE185PD + Pistol/Semiautomatic —Beginning 0 3 1
Basic indoor small bore shooting. Safety procedures, equipment and rules. Introduction to national and range shooting. Start of a shooting record. Target and silhouette hitting. Right and left barricades.

PE185PE + Pistol/Semiautomatic—Intermediate 0 3 1
See Pistol/Semiautomatic—Beginning.

PE185PF + Pistol/Semiautomatic—Advanced 0 3 1
See Pistol/Semiautomatic—Beginning.

PE185PG + Pistol/Smallbore—Beginning 0 3 1
See Pistol/Semiautomatic—Beginning.

PE185PH + Pistol/Smallbore—Intermediate 0 3 1
See Pistol/Semiautomatic—Beginning.

PE185PK + Pistol/Smallbore—Advanced 0 3 1
See Pistol/Semiautomatic—Intermediate

PE185PM + Pistol Marksmanship—Beginning 0 3 1
See Pistol/Semiautomatic—Beginning.

PE185PN + Pistol Marksmanship—Intermediate 0 3 1
See Pistol/Semiautomatic—Beginning

PE185PO + Pistol Marksmanship—Advanced 0 3 1
See Pistol/Semiautomatic—Beginning.

PE185RA + Racquetball—Beginning 0 3 1
Paddleball or racquetball as it is sometimes called, is an activity that is similar to handball or squash but requires less skill to master. The activity is played on handball courts with a racket and a rubber ball about the same size as a tennis ball.

PE185RB + Racquetball—Intermediate 0 3 1
See Racquetball—Beginning.

PE185RC + Racquetball—Advanced 0 3 1
See Racquetball—Beginning.

PE185RD + Rifle Marksmanship—Beginning 0 3 1
See Pistol/Semiautomatic—Beginning.

PE185RE + Rifle Marksmanship—Intermediate 0 3 1
See Pistol/Semiautomatic—Beginning.

PE185RF + Rifle Marksmanship—Advanced 0 3 1
See Pistol/Semiautomatic—Beginning.

PE185RG + Roller Skating—Beginning 0 3 1
Fundamental skills and techniques including forward skating, backward skating and two foot turns.

PE185RH + Roller Skating—Intermediate 0 3 1
See Roller Skating—Beginning.

PE185RJ + Roller Skating—Advanced 0 3 1
See Roller Skating—Beginning.

PE185RW + Running for Fitness—Beginning 0 3 1
Running and circuit training techniques designed to improve the overall physical condition of the body.

PE185RX + Running for Fitness—Intermediate 0 3 1
See Running for Fitness—Beginning.

PE185RY + Running for Fitness—Advanced 0 3 1
See Running for Fitness—Beginning.

PE185SA + Scuba Diving—Beginning 0 3 1
Skills and techniques necessary for proper and safe performance of underwater swimming and diving. Acquaints the student with diving equipment and its proper use and care. Dangers involved in underwater swimming and diving and procedures to avoid these dangers.

PE185SB + Scuba Diving—Intermediate 0 3 1
See Scuba Diving—Beginning.

PE185SC + Scuba Diving—Advanced 0 3 1
See Scuba Diving—Beginning.

PE185SD + Swim for Fitness—Beginning 0 3 1
Open to students who have mastered the front and back crawl, sidestroke, breaststroke and elementary backstroke. The student works to develop endurance and strength and swim for aerobic fitness.

PE185SE + Swim for Fitness—Intermediate 0 3 1
See Swim for Fitness—Beginning.

PE185SF + Swim for Fitness—Advanced 0 3 1
See Swim for Fitness—Beginning.

PE185SG + Skiing Conditioning—Beginning 0 3 1
A program designed to prepare students for winter skiing. Conditioning is achieved through the use of the universal gym machine, running, soccer skills, volleyball and coordination exercises.

PE185SH + Skiing—Beginning 0 3 1
Fundamental skills and techniques including snowplow turns, traverse-stem turns, sideslip, uphill christie, beginning parallel and parallel turn. Advanced includes free skiing, powder, phase II, etc.

PE185SJ + Skiing—Intermediate 0 3 1
See Skiing—Beginning.

PE185SK + Skiing—Advanced 0 3 1
See Skiing—Beginning.

PE185SL + Slimnastics—Beginning 0 3 1
Calisthenics and jogging to achieve toning and total fitness. These exercises, when combined with a reduction in intake, result in loss of inches and pounds. Nutritional information also is included.

PE185SM + Slimnastics—Intermediate 0 3 1
See Slimnastics—Beginning.

PE185SN + Slimnastics—Advanced 0 3 1
See Slimnastics—Beginning.

PE185SP + Softball—Beginning 0 3 1
Fundamental skills and rules taught through participation in team play.

PE185SQ + Softball—Intermediate 0 3 1
See Softball—Beginning.

PE185SR + Softball—Advanced 0 3 1
See Softball—Beginning.

PE185SS + Swimming—Beginning 0 3 1
This course follows the Red Cross beginner and advanced beginner programs. Students should master floating, back and prone glides, survival floating, human stroke, front crawl, elementary backstroke, jump and dive into deep water.

PE185ST + Swimming—Intermediate 0 3 1
This course follows the Red Cross intermediate swimming program. Students should master beginner skills before enrolling. Skills to be mastered by the end of this course include front crawl, back crawl, side stroke, breast stroke, surface dive, underwater swim and standing front dive. Swimming for fitness is encouraged.

PE185SU + Swimming—Advanced 0 3 1
Students should master intermediate skills before enrolling. Emphasis is placed on swimming for fitness and improving basic skills. At the completion of this course, students should have the skills necessary to progress to senior lifesaving.

PE185SW + Skiing Conditioning—Intermediate 0 3 1
See Skiing Conditioning—Beginning.

PE185SX + Skiing Conditioning—Advanced 0 3 1
See Skiing Conditioning—Beginning.

PE185TA + Table Tennis—Beginning 0 3 1
Beginning fundamental skills including serve and practice strategy and application of rules and etiquette. Intermediate—perfection of table tennis skills and strategy in singles and doubles play. Advanced—continued practice in skills and strategy with emphasis on competitive play.

PE185TB + Table Tennis—Intermediate 0 3 1
See Table Tennis—Beginning.

PE185TC + Table Tennis—Advanced 0 3 1
See Table Tennis—Beginning.

PE185TF + Tennis—Beginning 0 3 1
Beginning—fundamental skills including forehand, backhand, and serve and strategy and applications of rules and etiquette. Intermediate—perfection of skills and strategy in singles and doubles play. Advanced—continued practice in skills and strategy with emphasis on competitive play.

PE185TG + Tennis—Intermediate 0 3 1
See Tennis—Beginning.

PE185TH + Tennis—Advanced 0 3 1
See Tennis—Beginning.

PE185TL + Track and Field—Beginning 0 3 1
Fundamentals, rules, theories and training in track and field events.

PE185TM + Track and Field—Intermediate 0 3 1
See Track and Field—Beginning.

PE185TN + Track and Field—Advanced 0 3 1
See Track and Field—Beginning.

PE185TS + Trap Shooting—Beginning 0 3 1
Safety procedures, rules, clay shooting and advancement on qualifications.

PE185TU + Trap Shooting—Intermediate 0 3 1
See Trap Shooting—Beginning.

PE185TV + Trap Shooting—Advanced 0 3 1
See Trap Shooting—Beginning.

PE185VJ + Volleyball—Beginning 0 3 1
Instruction and practice in skills, rules and strategy through individual and team play.

PE185VK + Volleyball—Intermediate 0 3 1
See Volleyball—Beginning.

PE185VL + Volleyball—Advanced 0 3 1
See Volleyball—Beginning.

PE185WA + Water Safety Instructon 0 3 1
A course covering all phases of water safety, basic swimming strokes, related aquatic skills, diving, lifesaving skills, water safety and teaching guidelines.

PE185WD + Weight Training—Beginning 0 3 1
Instruction in fundamental safety procedures, preconditioning for weight training and progressive resistance to fit lifetime needs regarding physical fitness. An activity for students of all ages.

PE185WE + Weight Training—Intermediate 0 3 1
See Weight Training—Beginning.

PE185WF + Weight Training—Advanced 0 3 1
See Weight Training—Beginning

PE185WJ + Figure Control—Beginning 0 3 1
Activities designed to improve human body form and function through the universal gym machine and calisthenics. Emphasis on cardiovascular fitness through aerobic exercise.

PE185WK + Figure Control—Intermediate 0 3 1
See Figure Control—Beginning.

PE185WL + Figure Control—Advanced 0 3 1
See Figure Control—Beginning.

PE185YA + Yoga—Beginning 0 3 1
Background, safety precautions and values of Yoga. Stretching and limbering up exercises. Proper breathing techniques and exercise positions.

PE185YB + Yoga—Intermediate 0 3 1
See Yoga—Beginning.

PE185YC + Yoga—Advanced 0 3 1
See Yogo—Beginning.

PE190 + Physical Education—Men 0 3 1
A variety of activities taught for physiological and recreational values.

PE190BI + Baseball—Varsity 0 3 1

PE190BN + Basketball—Men's Varsity 0 3 1

PE190CL + Cross Country—Men's Varsity 0 3 1

PE190TK + Tennis—Men's Varsity 0 3 1

PE190TQ + Track and Field—Men's Varsity 0 3 1

PE190WS + Wrestling—Men's Varsity 0 3 1

PE194 Professional Activities—Women 0 3 1
For professional students. Instruction and practice. Fall—field sports and basic physical education. Winter—tumbling and basketball. Spring—elementary contemporary dance and tennis.

PE194BY + Basic Rhythms—Professional 0 3 1

PE194FW + Fundamentals of Movement—Professional 0 3 1

PE194GR + Games and Relays—Professional 0 3 1

PE194TR + Track and Field—Professional 0 3 1

PE195 Professional Activities—Men 0 3 1
For professional students. Methods, teaching techniques and basic skills. Fall—fundamentals of body movement and games. Winter—elementary aquatics. Spring—track and field.

PE294 Professional Activities—Women 0 3 1
Gymnastics and badminton, swimming, tumbling and volleyball.

PE294BD + Badminton—Professional 0 3 1

PE294BO + Basketball—Professional 0 3 1

PE294FH + Field Sports—Professional 0 3 1

PE294VM + Volleyball—Professional 0 3 1

PE295 Professional Activities—Men 0 3 1
Gymnastics and badminton, football, tumbling, basketball and weight training.

Phl201 + Problems of Philosophy 3 0 3
A study of the major philosophical traditions with particular emphasis upon developing tools for reflection. Two major problems are also discussed, the problem of self-identity and the issue of human communication.

Phl202 + Problems of Philosophy 3 0 3
A survey of religious, metaphysical, ethical, political and aesthetic issues of historic and contemporary interest. The emphasis is upon critical interpretation, exposure to various perspectivies in the setting for discussion.

Phl203 + Elementary Ethics 3 0 3
Objectives and rules for human behavior are introduced as important tools for decision making. Diversity of goals and means is applied to present-day topics such as war/peace, sexuality, drugs, political issues and religious beliefs.

Ph201,202,203 + *General Physics 3 3 4
Mechanics, sound, heat, light, electricity, magnetism and modern physics. Three lectures, one one-hour discussion session, one two-hour laboratory period with outside assignments.
Prerequisite: Mth101 College Algebra previously or concurrent with Ph201.

Psy100 Introduction to Psychology 3 0 3
An introductory course with emphasis on the application of the basic concepts and methods of psychology to one's vocational and life situations. Covers motivation, learning, perception, emotion, personality and mental health.

Psy101 Psychology of Human Relations 3 0 3
An introductory course that will assist in understanding the interpersonal relations on the job and in everyday activity. Topics considered include self-actualization, marriage and family relationships, social interaction, job satisfaction and relations with both supervisors and subordinates.

Psy111 Processes in Living 3 0 3
Self-understanding through an exploration of values, attitudes, interests, beliefs and abilities and how these personal factors influence learning, educational and vocational decision making and interpersonal relationships.

Psy114 Career Development, Personal Perspective 3 0 3
A comprehensive developmental program that provides exploratory opportunities to integrate the personal, educational and occupational elements of career development. Encourages career planning and decision making based on realistic self-knowledge and self-assessment.

Psy201 + General Psychology 3 0 3
Psychology as a science. Stresses the biological foundations of humans, motivation and emotion, sensation and perception.

Psy202 + *General Psychology 3 0 3
The second of three introductory psychology courses. Includes principles of learning, memory, cognitive man as well as problem solving.
Prerequisite: Psy201.

Psy203 + *General Psychology 3 0 3
The third of three introductory courses in psychology. Includes personality theory, psychopathology and psychotherapy, development and socialization and social psychology.
Prerequisite: Psy201.

Psy206 Introduction to Social Psychology 3 0 3
Some of the problems, theories and methods of social

psychology. Includes the interrelationships between the individual and his/her social environment, the social influences upon motivation, perception and behavior, and the development and change of attitudes and opinions. Small groups, social stratification and mass phenomena also are included.

Psy299 Growth and Development 3 0 3
An introductory course in human growth and development from conception through death. Birth through middle adulthood is covered in depth.

PS199 Political Power and Political Action 3 0 3
A survey of political processes with specific emphasis on the government and politics of Oregon. Strategies, laws and concerns of groups attempting to affect the political process will be identified.

PS201 American Government 3 0 3
An examination of the American political system, the aims of the founding fathers as expressed in the Constitution, the growth of government, political philosophy, democratic ideology, capitalism, the mass media and voter participation. Focuses on the politics of involvement—citizens and special interest—and looks at the issues of today including inflation, unemployment, poverty, job scarcity and the rising cost of living. Discusses the problem—how does the individual affect the system.

PS202 +American Government 3 0 3
A survey of the American political process in terms of who governs. Examines Congress, the Presidency, the judiciary, the Pentagon, a military economy, the C.I.A. and foreign policy, the role of corporations, bureaucracies and the growth of government. Focuses on the politics of health care, taxes and the federal budget. Discusses democratic responsibility and the effect of institutions on our daily lives.
Prerequisite: PS201 recommended but not required.

PS203 State and Local Governments 3 0 3
The role of regional, state and local government is examined. Special attention is given to the nature of federalism.

PS205 +International Relations 3 0 3
An introduction to international politics, detente, foreign policy, multi-national corporations and imperialism, revolution and counterrevolution, the arms race and mechanisms for conflict resolution. Examines current global crises and the future of world order.

Rd10A-C Reading Skills 0 0 1/0 0 2/0 0 3
The study skills center offers reading assistance for all levels of reading ability. Services are available as follows: individual tutorial assistance, reading for speed, reading for comprehension, textbook reading and study, vocabulary development.

RL50,51,52 First-Year French 4 0 4
An Introduction to French, stressing reading and speaking. Exercises in elementary composition and grammar.

RL60,61,62 +First-Year Spanish 4 0 4
An introduction to Spanish, stressing speaking and reading. Exercises in elementary composition.

R201 Primitive and Far Eastern Religion 3 0 3
The study of religion, religious practices in pre-history, and the major oriental religions. Discussion and film media will relate the intellectual and the aesthetic, the ancient and modern. The student is encouraged to do individual research.

R202 *Near Eastern Religions 3 0 3
The second course in the sequence will add a survey of the thought, scriptures and practices of Judaism, Christianity and Islam. Discussions, papers and film will stimulate a critical appreciative approach to these religions.
Prerequisite: R201 and/or instructor's consent.

R203 American Religions 3 0 3
A survey of the richness and diversity of American religious thought and practice. Emphasis on useful information for the believer and/or questioner. Discussion and individualized research projects will aid the student in interpreting religious practices more knowledgeably.

Soc100 Sociology 3 0 3
A study of people and the history of problems of living together and the development and organization of the various groups and structures that make up modern society. Contemporary problems particularly evident in the United States, such as racial disorders, campus demonstrations and the hippie movement are included.

Soc101 American Institutions 3 0 3
A study of the effect of American social, economic and political institutions upon the individual as a citizen and as a worker in business and industry. The inter-relationship of freedom and control is utilized as a common denominator in considering culture, its functions and changes, social groups in relation to problems of urban living, the family and social classes, the American economic system and its concepts and organization, public opinion, the American political system and international relations.

Soc204 +General Sociology—Introduction 3 0 3
Basic issues and findings regarding the biological, symbolic and social nature of man. The foundations for social interaction including patterns of social structure, culture, socialization, primary relationships, social differentiation, organizations, deviance and collective behavior are presented. Principles of the scientific method and major sociological theorists are included.

Soc205 +*General Sociology—Institutions 3 0 3
An analysis of social institutions with special emphasis on family, religion, education, economy and politics. Factors contributing to institutional stability and change.
Prerequisite: Soc204 or consent of instructor.

Soc206 +*General Sociology 3 0 3
A sociological approach to major social problems in contemporary American society. Organizational theme will emphasize such concepts as aging, health care, law, leisure, minorities, pollution, poverty, technology, urbanization, work and youth.
Prerequisite: Soc204 or consent of instructor.

Soc208 Social Change and Earth's Resources 3 0 3
This course concerns the question of the direction and form that social change will take in consequence of the rapidly increasing consumption of limited natural resources by large scale industry serving a growing mass population. Various adaptive possibilities which seem open to society will be studied. The general approach to the question will be introductory. Case materials from the Pacific Northwest will be utilized.

Soc221 *Juvenile Delinquency* 3 0 3
The nature, extent, causes, control, reactions, treatment and rehabilitation of juvenile delinquency in contemporary American society from a sociological perspective.

Soc222 Marriage Relationships 3 0 3
A sociological approach to the institution of marriage including preparation for marriage, mate selection, adjustment to marriage, marital problems to expect and solve and the changing styles of family relationships.

Soc291 Introduction to Data Collection and Interpretation 3 0 3
A basic survey of concepts, techniques and approaches used in collecting information from a scientific perspective. The varieties of procedures and strategies used in decision making and the reporting of information. Some emphasis is given to the analysis of data.

Soc295 Seminar: Grant Writing 3 0 3
An opportunity for students to explore the availability of private and public grants. In addition students will expand their basic skills in grant writing.

Soc296 Problem Solving II 3 0 3
An opportunity for the student to apply basic social science methodology to a local problem utilizing Salem and outlying areas as the framework for problem identification. Problem formation and problem solution.

Sp111,112,113 +Fundamentals of Speech 3 0 3
Projects in extemporaneous speaking. Primary emphasis on content and organization with attention also to the student's adjustment to the speaking situation, effective delivery, audience motivation and language of speech. Must be taken in sequence.

Sp125 Interpersonal Communication 3 0 3
An orientation to the dynamics of speech communication including verbal and non-verbal elements which influence effective speaking and listening. Theory is introduced through oral communication activities in face-to-face, small group and public speaking contexts. Emphasis on interpersonal communication.

Sp220 Business and Professional Speaking 3 0 3
This course is designed to improve speech efficiency, self-confidence and skill in organization and delivery of the types of speeches encountered in business and social activities, through practical application of actual situations.

Sp222 Persuasion 3 0 3
A consideration of concepts, principles and theories related to people and a study of speaker credibility, reference groups and other major variables which enter into the progress of persuasion. Individual projects to provide opportunities to apply principles learned.

SSc199 Interpersonal Conflict 3 0 3
An interdisciplinary approach to various criminal justice-related interpersonal conflict situations. Features separate psychological, sociological and law enforcement analyses of the problem and possible solutions.

SS101 Office Careers Survey 1 0 1
An overview of the organization and climate of business and professional offices, which will include investigation of the various job possibilities available to persons with secretarial/clerical training. Includes guest speakers and field trips to provide current picture of office occupations.

SS110A Shorthand Refresher 2 0 2
A review of basic Gregg shorthand theory including brief forms. Practice reading and writing from shorthand plates. Some dictation from previewed material. This course should be taken by persons with a background or a very minimal skill. A required level of achievement is specified.

SS110B Shorthand Refresher II 2 0 2
A refresher course in Gregg shorthand for persons with a knowledge of theory and some ability to take dictation. Students will progress at their own rate. Grade will be based on progress attained.

SS111 +Stenography 2 3 3
A beginning course in Gregg Diamond Shorthand. A study of simplified principles which should enable the student to take simple dictation and transcribe in long-hand in the early part of the course. Students who have had previous training in shorthand will be given the opportunity to complete these requirements in a short period of time. Other elements studied are proper recording habits, spelling, vocabulary and punctuation.

SS112 +*Stenography 2 3 3
A continuation and review of shorthand theory plus transcription, including special forms, abbreviated forms, punctuation and expanded vocabulary. Emphasis is on shorthand writing from dictation to build speed and skill and transcribing from shorthand notes on a typewriter.
Prerequisite: Stenography SS111 or equivalent.

SS113 +*Stenography 2 3 3
Advanced vocabulary, phrase-building and word building principles based on the basic Gregg shorthand principles learned in Stenography SS111 and 112.
Prerequisite: Stenography SS112 or equivalent or consent of instructor.

SS114 Briefhand I 2 3 3
A simplified note taking system. Beneficial for students for vocational application, for taking lecture notes and for personal use.

SS121 +Typing I 1 4 3
The basic parts of the IBM selectric typewriter. Instruction in the typewriter keyboard utilizing the touch system and basic centering techniques. The student should attain a typing speed of at least 30 words per minute. Basic letter, table, memo and manuscript format are studied. Students with previous typing experience may work through this course in a minimum period of time or take the challenge examination.

SS122 +*Typing II 1 4 3
A continuation of typing SS121 with emphasis on increasing the typing speed and accuracy to at least 40 words per minute for a grade of 'C'. Mastery of various forms of business communications along with application of editorial skills and technical procedures.
Prerequisite: Typing 121 or equivalent plus entry speed of 30 w.p.m.

SS123 +*Typing III 1 4 3
Corrective and acceleration drills to develop a minimum typing speed of 50 words per minute. Emphasis on production of various papers encountered in a business office.
Prerequisite: SS122 or equivalent or consent of instructor.

SS211 +*Applied Stenography 2 3 3
Review of shorthand including advanced principles, phrases and shortcuts. Further development of shorthand, typewriting and English into effective skills with emphasis on vocabulary of different business areas.
Prerequisite: SS113, SS123 or equivalent.

SS212 +*Applied Stenography 2 3 3
See SS211.
Prerequisite: SS211.

SS213 +*Speedbuilding 2 3 3
A continuation of shorthand development. Emphasis on dictation speedbuilding with improvement of shorthand vocabulary and transcription skills.
Prerequisite: Applied Stenography SS212 or equivalent, Typing SS123 or consent of instructor.

TA111 Fundamentals of Acting 0 6 3
Introduction to the principles of acting, development of body control, investigation of body skills and use of improvisation in dramatic expression.

TA112 Fundamentals of Acting 0 6 3
The use of the voice in dramatic roles, its production and control. An introduction to dialects and accents.

TA113 Fundamentals of Acting 0 6 3
Study of the problems in the analysis and presentation of characters in dramatic literature.

TA249 Stagecraft 2 3 2
Construction, painting and shifting techniques for stage scenery and properties. Study of backstage procedures and stage managememt.

TA250A,B,C Theater Workshop Variable
Principles of dramatic production demonstrated through practical production experiences or special laboratory projects.

TA252 Makeup 1 2 1
Theory and practical applications of theatrical makeup. The use of makeup in the various theatrical media, and the use of different types of makeup.

Wr30A, B, C; Wr31A, B, C Vocabulary Building 1 0 1
These mini-courses (3 weeks = 1 credit each) are designed to help students improve their vocabulary, both general and technical, and develop a better sense of correct English usage. May be taken concurrently with any writing course or with any course involving the designated skills.

Wr40 Writing Skills 3 0 3
The course will be divided into three major areas of concentration, basic grammar, sentence construction and paragraph development. After the foundation (grammar) for competent writing has been laid, the course will concentrate on how to construct clear, coherent sentences. Once the sentence has been mastered, students will begin to connect several sentences together to form paragraphs. The work with the individual units of composition will culminate in the construction of a short essay. In-class work will be a combination of lecture, discussion and writing workshop. Credit for this course will not be granted if students have received credit for Wr40A, Wr40B or Wr40C.

Wr40A Writing Skills, Basic 1 0 1
This mini-course is designed to familiarize the student with the basic elements of English grammar that will lay the foundation for competent writing. Students first learn the definitions of the parts of speech and they demonstrate accurate identification of the parts of speech in typical English sentences. Credit for this course will not be granted if student has received credit for Wr40.

Wr40B Writing Skills, Sentences 1 0 1
This course concentrates on how to construct clear, coherent sentences. Work will consist of analysis of typical English sentences and the writing of effective and correct sentences based upon that analysis. Credit for this course will not be granted if student has received credit for Wr40.

***Wr40C Writing Skills, Paragraphs* 1 0 1**
This course concentrates on how to construct clear, complete, and coherent paragraphs. Work will consist of analysis of typical English paragraphs and the writing of typical expository paragraphs, definition, analysis, comparison/contrast, and the like. Competence will be demonstrated in a short final essay. Credit for this course will not be granted if student has received credit for Wr40.

Wr121 English Composition—Exposition 3 0 3
The first term college level English composition course teaching clear, detailed expository prose, clear thinking, and intelligent reading.
Prerequisite: Demonstrate mastery of the ability to:
1. Write complete, correct sentences.
2. Use punctuation correctly.
3. Follow the generally accepted conventions of standard English usage.
4. Spell correctly and know the meanings of the words commonly used in one's own writing.

Wr122 English Composition, Logic and Style 3 0 3
The second term college level English composition course teaching logical, effective argumentative prose, awareness of stylistic elements and critical reading.
Prerequisite: Wr121.

Wr123 English Composition—Research Writing 3 0 3
The third term college level English composition course teaching the acquisition and evaluation of evidence, integration of opinion and the appropriate process and forms for developing the research paper.
Prerequisite: Wr122.

Wr20A,B,C Basic Spelling Skills 1 0 1
This course will provide instruction in spelling improvement. The course includes instruction in basic word attack skills, pronunciation and spelling generalizations.

Wr21A,B,C Intermediate Spelling Skills 1 0 1
This course will provide instruction in spelling improvement. The course includes instruction in basic word attack skills, pronunciation and spelling generalizations.

Wr227 *Technical Writing 3 0 3
Principles of composition and basic forms of writing reports. Emphasizes correct grammatical usage, types and makeup of reports, effectiveness of writing styles, gathering and planning of facts for a report and general improvement of report writing ability.
Prerequisite: Wr121, 122 or approval of the department chairman.

Wr241, 242, 243 +Imaginative Writing 3 0 3
A course designed to help the writer in three genres (short or long fiction, drama and poetry). Primarily a workshop class, with daily discussion of student writings. The course also includes some textual explorations with student and instructor presentations. Some individual and group projects will be assigned, but for most of the term students will be free to pursue their own projects, turning in at least one new or revised piece or portion of work each week.

***WS101 Introduction to Women's Studies* 3 0 3**
A survey of women as a minority group, examining the role of women from a variety of social science perspectives. The position of women in the family, participation in the labor force and the political psychology of women. A look at women cross-culturally and in history and literature. Classical and contemporary materials on women's role in society.

WS102 *Introduction to Women's Studies 3 0 3
The historical development of women from the 1920's through the 1960's with major emphasis on women cross-culturally—women in the developing third world countries as well as in modern industrial societies. Looks at where women are today.
Prerequisite: *WS101*

WS103 *Introduction to Women's Studies 3 0 3
Women as social beings moving toward the year 2000 A.D. Emphasis on the theoretical changes occurring in anthropological, psychological and other social areas which have major implications on future behavioral trends. Includes development of changes in labor, law and social institutions with an eye toward future patterns. Research and evaluation of theories and data are the prime focus.
Prerequisite: *WS101 and 102 or consent of instructor.*

WS105 Psychology of Women 3 0 3
This course deals with the study of women's behavior and fucuses on sex-role development, biological bases of behavior, and both interpersonal and intrapsychic bases of female behavior.

Zoo201, 202, 203 *General Zoology 3 3 4
An introductory study of animal life dealing with the principles and theories and applications of animal biology. Includes comparative study of the morphology, anatomy, life history, physiology, development, and ecology of both vertebrates and invertebrates. Zoo202 emphasizes invertebrates, Zoo203 emphasizes vertebrates.
Prerequisite: High school chemistry and biology or one quarter college biology.

OCCUPATIONAL PREPARATORY COURSES

1.101 Communication Skills 3 0 3
Designed to improve the student's communicative skills through reading, listening, writing and speaking, with emphasis on research and writing. The practical phase of communication problems is kept in the foreground. Problems in reading, note taking, gathering information, report writing and conventional usages of mechanics and grammar are covered.

1.104 Communication Skills II 3 0 3
A continuation of Communication Skills I. Practical applications are provided to develop effective habits of communication through speaking, participating in conferences, presentation of reports, gathering information, listening, observing and evaluating sources.

1.106 *Technical Report Writing 3 0 3
The principles of writing reports. Subjects covered include the why of reports, types of reports, makeup, effectiveness of writing styles, gathering facts, planning reports, documentation, methods of writing, layout and typing and visual aids.
Prerequisite: Communication Skills 1.101 or consent of instructor.

1.110 Basic Reading Tactics 3 0 3
Basic reading skills. Emphasis on an orderly mastery of habits and skills with application of appropriate techniques and materials.

1.111 Processes in Living 3 0 3
Self-understanding through an exploration of values, attitudes, interests, beliefs and abilities and how these personal factors influence learning, educational and vocational decision making and interpersonal relationships.

1.112 Accelerated Reading 3 0 3
This course is designed to instruct the community college student in efficient methods of reading. The course involves providing information and skills which will improve the student's reading and provide opportunities for him/her to practice and develop reading abilities through training and application. This course is directed towards the abilities of the average or the above average community college reader.

1.113 Advanced Accelerated Reading 3 0 3
This course is designed to instruct the community college student in advanced methods of reading process as well as provide additional training in critical and analytical thinking. Opportunities for the student to develop and practice reading abilities will be provided through specific skill training and lab sessions. Emphasis upon reading rate, comprehension and flexibility will be stressed.

1.115 Language Development for the Deaf and Hearing Impaired 3 0 3
This course is designed to enrich a deaf student's vocabulary, language level and reading and writing skills. Emphasis will be upon expanding vocabulary; a better understanding of the language used in his/her classes and improving reading and writing skills. The teachers of this class will be skilled in American sign language and will communicate with the students at their individual language level.

1.116 Manual Communication with the Deaf 3 0 3
This course is designed to instruct the community college student in learning manual communication skills used by deaf people.Opportunities for the student to develop and practice manual communication skills will be provided through specific skill training by experienced teachers and deaf adults in the community. Emphasis will be placed on fingerspelling and expressive and receptive manual communication skills.

1.117A,B,C English as a Second Language 3 0 3
Designed for the student whose first language is not English. This course will provide instruction in improving the students' communication skills, with emphasis on aural/oral skills. This course includes instruction in phonology, English speech patterns and intonation, reading skills and English structure.

1.121 Basic Writing Skills for Deaf and Hearing Impaired 3 0 3
A remedial course aimed at improving writing skills for deaf and hearing impaired students. The course will involve lessons on sentence structure and paragraph, report and creative writing.

1.122 Basic Reading Skills for Deaf and Hearing Impaired 3 0 3
A course in remedial reading for deaf and hearing impaired students who want to improve their reading skills. The course involves reading newspapers, magazines and books aimed at improving reading comprehension, vocabulary and speed.

1.123 Basic Communication Skills for Deaf and Hearing Impaired 3 0 3
This course consists of expressive and receptive communication skills. Organizing written and oral reports will be stressed as well as developing better listening skills. Learning how to communicate effectively in a group situation will also be stressed.

1.124 English as a Second Language III 3 0 3
Designed for the student whose first language is not English, with emphasis on essential structures of English. This course includes reading and vocabulary development skills. Emphasis will be: listening and speaking—30 percent; reading and vocabulary—40 percent; writing—30 percent.
Prerequisite: (Suggested) Michigan test of English language proficiency. Score between 50-70 or ESL I.

1.125 Manual Communication with the Deaf II 3 0 3
Continuation of 1.116. Involves increasing manual communication vocabulary and introduction to the physical aspects related to deafness. This course will review and reinforce expressive and receptive fingerspelling, and the basic sign vocabulary of manual communication I. It will introduce an additional 400 word vocabulary and will emphasize the improvement of both receptive and expressive skills.

1.126 Manual Communication with the Deaf II 3 0 3
Continuation of 1.116 and 1.125. Increases manual communication vocabulary and introduces various aspects of the education of the deaf. This course will reinforce the basic skills of fingerspelling and manual communication with an emphasis on developing skills in the simultaneous method of communication. Additional vocabulary and idiomatic signs will be introduced.

1.127 Conversational Sign I 3 0 3
A continuation of vocabulary introduction. However, the emphasis will be on the comprehensive study of translating English with American sign language and both English and deaf idioms will be emphasized.

1.128 Beginning Interpreting for the Deaf 3 0 3
A course designed to introduce students already involved in using manual communication to the field of interpreting. Students will be introduced to the basic theories, principles and practices of interpreting for deaf people. An overview into the 'role' of an interpreter.

1.129 Studies in Deafness 3 0 3
Students will be presented with the historical as well as present aspects of deafness. Notable deaf persons will be discussed, and the role of deafness will be explored in

today's world, enabling students to develop a sense of personal pride in their own deafness. Open to hearing students.

1.130 Vocational Studies—Bilingual 2 1 2
Vocational Studies—Bilingual is designed to assist bilingual and limited English speaking students in the development of basic college study skills and to provide an orientation to the practical realities of the work world by examining self-awareness and occupational choice, looking for jobs, factors affecting upward mobility. The choice will integrate the study skills end with the career/vocational aspect, the latter to be offered during the second half of the term. The course itself will consist of lectures, guest speakers and role playing by students. Instruction will be facilitated by bilingual student classroom tutors.

1.131 Effective Learning 1 0 1
Enables the community college student to develop efficient management of his learning techiques.

1.205 Literature for Technicians 3 0 3
An introduction to the essay, short story, novel, poem and play through discussion and individual study. Non-fiction works are coupled to the modern novel. Emphasis is placed on vicariously experiencing the events affecting characters in literature and relating these experiences to the modern technological world.

1.206 Experience and Expression in Literature 3 0 3
A look into the many images of the American in literature. It includes readings authored by American writers that explore the socially alienated and disadvantaged and social elite aspects of America. Each selection allows one to relate the images of the Americans as they are presented to the images developed as a result of personal experiences, observations and insights. The course will deal with the real American vs. the ideal or mythical American.

1.700, 1.701, 1.702 Conversational Spanish I, III, III 2 2 3
Practices and exercises in the basic vocabulary and structural patterns to help the student understand and speak Spanish.

2.105 *Merchandising 3 2 4
Application of principles to merchandise display problems of space utilization, improvisions, seasonal display, lighting and organization and merchandise in display. Expands on the merchandising concepts and practices which were introduced in introductory courses of retailing and marketing.
Prerequisite: BA223.

2.119 *Insurance—Property and Casualty 3 0 3
An introduction to property, casualty and liability insurance coverages and the general limitations of insurance. Successful completion of this course will provide the student with the basic knowledge needed for insurance IIA 21, IIA 22 and III 23.
Prerequisite: BA241 or consent of instructor.

2.120 *Insurance—IIA 22 4 0 4
Understanding coverages, policy provisions and concepts common to property insurance. Contracts and forms studies include the standard fire policy, extended coverage endorsement, dwelling and contents form, building and contents form, crime policies, business interruption forms, bailees' customers policy and the property coverages provided by multiple-line contracts.
Prerequisite: 2.342 or consent of instructor.

2.121 *Insurance—IIIA 23 4 0 4
Coverages, policy provision and concepts peculiar to casualty, surety and multiple-line contracts. Contracts studied include the family automobile policy, workers' compensation and employers' liability policy, owners' and tennants' liability policy, comprehensive general liability policy, comprehensive personal liability coverage, life and health insurance coverages and the liability insurance aspects of multiple-line contracts.
Prerequisite: 2.342 or consent of instructor.

2.124 *Property Loss Adjusting ADJ31 4 0 4
An introduction to the fundamental areas in property loss adjusting, indemnity, insurable interest, co-insurance, subrogation, proximate cause, requisites of insurable risks, deductibles, valued policies, probability. Emphasis is given to the adjustment procedure, claim analysis, reporting area, estimation of building losses, construction costs, and adjustment of personal property losses.
Prerequisite: 2.342 or consent of instructor.

2.222 *Rating and Underwriting—Life and Health 3 0 3
A continuation of the underwriting and actuarial studies of life and health insurance begun in Policies and Forms II, with in-depth study of the basic practices and decisions made by an insurance company. Includes use of rate books, applications and company materials.
Prerequisite: 2.228 or consent of instructor.

2.223 *Rating and Underwriting—Property and Casualty 3 0 3
A continuation of the underwriting and actuarial studies of property and casualty insurance begun in IIA 21, with in-depth study of the basic practices and decisions made by an insurance company, including rating using company rate materials.
Prerequisite: 2.342 or consent of instructor.

2.225 *Group Insurance and Social Insurance 3 0 3
Analysis of group life and group health insurance, including products, marketing, underwriting, reinsurance, premiums and reserves. Socio-economic problems related to old age, unemployment and disability and various public plans that have been developed to meet these problems are also discussed.
Prerequisite: 2.343, 2.222 or consent of instructor.

2.226 *Regulations/Law (Oregon Insurance Code) 2 0 2
A study of the Oregon revised statutes pertaining to insurance in Oregon, with special emphasis on agents and adjuster practices, fair trade practices and consumer protection afforded by the insurance code.
Prerequisite: One course in life and health and property and casualty.

2.228 *Policies and Forms—Life and Health 3 0 3
A study of the various basic forms and amendments used in riders and life and health insurance, including all forms of life, health and hospital coverages as well as variable life and variable annuity contracts. The course also includes underwriting and actuarial assumptions which relate to the various contracts.
Prerequisite: Insurance—IIA 21, 2.343.

2.230 *Investments 3 0 3
An opportunity for the student to consolidate and coordinate his previous experiences with the basic information and data an investor needs to survive the maze of alternatives he faces in the marketplace. Included is an explanation of investments as viewed by insurance companies and insurance as a part of the investor's portfolio.
Prerequisite: BA101 and BA211 or consent of instructor.

2.231 *Risk Management Analysis 3 0 3
A study of the operations of various types of businesses to determine what hazards exist and then how to best treat them. Includes a case study of a small business risk management as a term project.
Prerequisite: 2.228 and 2.342

2.275 Electronic Management 2 0 2
A practical course for the service technician covering the

areas of customer relations, business costs, inventories, shop planning and advertising methods. Discussions of the state licensing law.

2.342 *Insurance—IIA 21 4 0 4
The course deals with the general principles of insurance. Includes the concept of risk, its place in economics, methods of treating risk and the essentials of an insurable risk. Introduction to insurance contracts and legal concepts which underlie them.
Prerequisite: BA241 or consent of instructor.

2.343 *Insurance Principles—Life and Health 3 0 3
Studies of basic theory, policy structure, pricing structure and applications of life and health insurance to prepare the student for entry into the insurance industry or to educate the student as a consumer. Covers rate making, cost analysis and uses of various life and health contracts.
Prerequisite: BA241 or approval of instructor.

2.344 Insurance Occupational Survey Seminar 1 0 1
A seminar exploring specific insurance occupations. Practicing professionals in the field are invited as guest speakers. Field trips also are included.

2.401 Real Estate—A Consumer Approach 3 0 3
What do you need to survive a real estate transaction? This course deals with developing a basic understanding of real property and of transactions involving real property. The course develops the concepts of real and personal property, ownership rights and responsibilities, conveyances of realty financing, leasing and taxation of real property. The major emphasis will be on application of concepts to the acquisition and disposal of real property rights.

2.405 Applied Mathematics in Real Estate 3 0 3
Fundamentals of the real estate industry. Includes the fundamental mathematics necessary for performing real estate transactions, computing taxation, real property assessments, percentage relationship and ratios of values, finance, leverage, appreciation, depreciation and equity ownership.

2.408 *Real Estatate Appraisal I 3 0 3
Theories, functions, and purposes of appraisal—principles of valuation, including cost, market and income approach—techniques for determining condemnation, insurance, loan, purchase and sales values.
Prerequisite: BA264 or consent of instructor.

2.409 *Real Estate Appraisal II 3 0 3
A continuation of real estate appraisal 2.408 with emphasis on specific problem areas such as commercial appraisals, farm appraisals and industrial appraisals.
Prerequisite: Real Estate Appraisal I 2.408.

2.411 *Real Estate Appraisal III 3 0 3
Continuation of real estate appraisal 2.409 with emphasis on real estate assessment and the ad valorem tax. Techniques for county assessment, tax computation and ratios used in government computation are emphasized.
Prerequisite: Real Estate Appraisal 2.409

2.415 *Real Estate Investment Analysis I—Principles 3 0 3
A study providing an emphasis on the traditional analysis commonly employed by most investors. Designed to assist the student in becoming a more knowledgeable and potentially more successful investor. Features such important real estate concepts as leverage, cash flow and real estate investment trusts, syndication, subordination and annual constants.
Prerequisite: BA264 or consent of instructor.

2.416 *Real Estate Investment Analysis II—Taxation 3 0 3
An advanced and intensive study of tax principles governing real property with emphasis on tax planning and integration of tax concepts with procedural aspects.
Prerequisite: 2.415 or consent of instructor.

2.417 *Real Estate Investment Analysis III—Sales and Exchange 3 0 3
The alternative methods of property disposal including contract sales and exchanging and the tax implications of each.
Prerequisite: Real Estate Investment Analysis II.

2.418 Elements of Design and Construction 2 3 3
A comprehensive course designed for real estate majors to introduce design and construction terminology. Architectural styles and building designs, material and labor requirements, building codes and cost estimating. For the term project, each student selects a house plan and adapts it to a given site. Making estimates of materials and labor quantities and costs for representative types of construction and site preparation is included. Emphasis will be placed on the unit-in-place method of estimating.

2.422 *Property Management 2 0 2
An intensive study of real property management factors. Special emphasis is centered around investment analysis from the management standpoint—analysis of hotels, multiple units, shopping centers and businesses is included.
Prerequisite: BA263.

2.423 *Escrow Procedures I 3 0 3
The use of ordinary work sheets of the escrow agent to learn his function. The significance of the third party to real estate transactions is emphasized. The types of documents required to be held on deposit between the seller and buyer until the terms of the contract are completely executed are included.
Prerequisite: Fourth-term standing and BA260 and BA262.

2.424 *Escrow Procedures II 3 0 3
The obligations of the escrow department and title insurance company real estate transactions. Defects of title and abstract of title as a chain of statements is dealt with to indicate the value of title insurance. The ramifications of title insurance are emphasized.
Prerequisite: 2.423.

2.425 *Subdividing and Community Planning 3 0 3
A practical study emphasizing the aspects of subdivisions, zoning ordinances, tax aspects, use, ownership and transferability as encountered by developers and brokers who deal within this capacity. Emphasis will be placed on comprehensive planning. Steps needed to file a subdivison and current zoning laws.
Prerequisite: Escrow Procedures I.

2.426 *Escrow Procedures III 3 0 3
A presentation of the theory and practice of real estate exchanges and sales of businesses, the ordinary exchange, tax-free exchanges, multiple exchanges and, in the sale of businesses, bulk sales affidavits, security agreements, assignments of leases, leasehold interests and other ramifications of this phase of the escrow business. Includes review of theory and practices of Escrow I and II.
Prerequisite: Escrow Procedures II.

2.428 *Real Estate Seminar 3 0 3
In this course students will define, explore and analyze contemporary real estate problems from the various viewpoints within the real estate industry.
Prerequisite: Second-year standing in real estate.

2.429 Public Relations in Business 3 0 3
This course investigates the problems of balancing organizational operations within the goals of the consuming public. The problems of customer apprehensiveness, indecision, unrest and dissatisfaction as well as the problems with personnel relating to the consuming public. Research and class activities involving communication via letters, telephone and face-to-face situations.

2.437 Legal Descriptions, Platting and Map Reading 1 2 2

Locating properties, sites and points and mastering the reading and writing of legal descriptions using metes and bounds, lot and block and governmental rectangular survey systems and graphically depicting such descriptions by drafting plats, plot plans and maps. Land measurements, areas and dimensions will be studied. Emphasis will be placed on functional skills rather than cartographic methods.
Prerequisite: BA260 suggested.

2.515 Filing 3 0 3

A study of the basic principles involved in the systematic planning of the classification, arrangement, storage and retrieval of business papers. Emphasis is placed on practice in alphabetic, numeric, subject and geographic filing systems of correspondence and non-correspondence papers.

2.551 *Intermediate Financial Accounting I 4 0 4

The comprehensive study of the environment and development of accounting principles, basic theory, accounting process, statement of income and retained earnings, statement of financial position, present value, monetary assets, valuation of inventories and current liabilities.
Prerequisite: BA213, concurrent enrollment in BA213 or consent of instructor.

2.552 *Intermediate Financial Accounting II 4 0 4

The comprehensive study of plant assets, depreciation, depletion, intangible assets, long-term liabilities, stockholders equity, earnings per share and long-term investments.
Prerequisite: 2.551 or consent of instructor.

2.553 *Intermediate Financial Accounting III 4 0 4

The comprehensive study of revenue recognition, accounting changes, error analysis, income taxes, pension plans, leases, statement of changes in financial position, financial statement analysis, full disclosure and price level adjusted financial statements.
Prerequisite: 2.552 or consent of instructor.

2.555 *Auditing 3 0 3

The comprehensive study of professional auditing and audit reports, internal control, audit work papers, evidence, original record examination, statistical sampling, cash, receivables, related revenues and credit losses, investments and related revenues. Inventories and cost of sales, prepaid items and related expenses, fixed assets and related expenses, intangible assets, current liabilities and related costs and expenses, long-term liabilities, owners' equities, completing an audit, post statement disclosure and legal responsibilities of professional accountants.
Prerequisite: 2.552 or consent of instructor.

2.559 *Governmental Accounting 3 0 3

The comprehensive study of accounting for governmental and non-profit entities. The course considers budgets, accounting for general funds, special revenue funds, revenue accounting, expenditure accounting, capital projects funds, debt service funds, special assessment funds, enterprise funds, general fixed asset group of accounts and summary of funds and groups.
Prerequisite: BA212 or consent of instructor.

2.566 *Medical Secretary Practicum 2 2 3

Techniques, methods and procedures used in the medical office. Reception of patients, appointment making, filing and processing medical and health insurance records and forms.
Prerequisite: Office Procedures 2.641 or consent of instructor.

2.569 *Medical Machine Transcription 3 0 3

Typing from a transcribing machine to build speed, accuracy and understanding of medical case histories, clinical reports, pathological reports, medical correspondence and research materials.
Prerequisite: Basic knowledge of typing techniques, typing speed of approximately 40 w.p.m. minimum or consent of instructor.

2.570 Medical Machine Transcription II 3 0 3

A continuation of Medical Machine Transcription 2.569 in the study and production of medical communication materials.
Prerequisite: Medical Machine Transcription 2.569 or consent of instructor.

2.580 *The Receptionist 3 0 3

A course designed to provide an awareness of the significance of the role of the receptionist and his/her vital place within a company. The student receives instruction and training opportunites in the responsibilities involved in this role to prepare him/her to be a competent office receptionist.
Prerequisite: Recommended as a first-year course only.

2.641 *Office Procedures 2 2 3

An introduction to different types of administrative support activities including telephone usage, mailing and shipping, meetings and conferences, appointments and meeting the public, working with arrangements, word processing, sources of business information, job careers in offices and job interviewing. Simulated job activities are included.
Prerequisite: Typing SS121 or consent of instructor.

2.642 Records Management 3 0 3

Principles of efficient control of business records including criteria for determining storage, disposition or retention. Includes guidelines for selection of equipment and supplies. Instruction in records management systems is presented through lecture, reading and practical application.

2.644 Management by Objectives—MBO 3 0 3

The purpose and method of what is perhaps the most dynamic management tool ever discovered. Sometimes termed managing for results. The basic principles of this idea apply equally to managing a small or large business.

2.648 Payroll Procedures 3 0 3

An examination of the federal and state laws which determine what records need to be kept on each employee's earning, what reports need to be prepared for state and federal governments and what guidelines need to be followed in assigning pay scaled to employees. Practice in the procedures used in computing the amounts of wages and salaries, paying these amounts, classifying payments charging the amounts to appropriate expense accounts.

2.652 Bookkeeping 3 0 3

A study of basic accounting principles and procedures to provide a familiarity with financial records and accounting terminology used in business today. Training in processing techniques for handling information, special journals, controlling accounts and work sheets used in preparation of account statements.

2.658 Introduction to Calculators 1 2 2

An introductory course in the use of printing, electronic display and electronic printing calculators in the solution of simple mathematical problems used as a basis for its solution in routine business problems.

2.660 *Business Machines

Includes instruction in the operation of the mechanical printing, electronic display and electronic printing calculators. Solving business problems with calculators is stressed.
Prerequisite: Introduction to Calculators 2.658 or consent of the instructor.

2.661 Reprographics 3 0 3

A study of copy duplication methods used in business offices and small organizations. Emphasis on preparing

layout, running equipment and comparing methods and machines.

2.663 *Transcription Machine Operation 1 4 3
A course covering dictation of letters, memos, reports and techniques of transcribing from the recorded voice to the typewriter. Operation of the transcriber and transcribing mailable copy with speed and efficiency are included.
Prerequisite: Typing, SS121 or equivalent.

2.667 *Transcribing Machine Operations 1 4 3
A continuation of Transcribing Machine Operation 2.663, building the transcribing efficiency of the student from machine dictated materials. English skills and typing speed and accuracy will be improved to a usable, on-the-job level.
Prerequisite: Transcribing Machine Operation 2.663 or consent of instructor.

2.668 *Business Executive Dictation 3 0 3
Development of executive skill dictating interoffice memorandums, letters, reports and other written communications. Mechanical operation of the dictating machine is included as is the set-up of the various business forms mentioned above.
Prerequisite: Business English 2.673 and Business Communication BA214/2.673 or consent of instructor.

2.673 Business English Fundamentals 3 0 3
The emphasis of this course is on the expression of ideas in written form including a review of grammar and punctuation. Business vocabulary and spelling will be stressed.

2.685 *Personnel Principles and Supervision 3 0 3
A study of the principles of public relations, employee-employer relations, business customs, business ethics, the social side of business, importance of personality, relationships with others, evaluation and the field of personnel supervision.
Prerequisite: Second year standing or consent of instructor.

2.700 Briefhand I 2 3 3
A simplified notetaking system. This course would be beneficial to students for vocational application, for taking lecture notes and for personal use.

2.701 *Briefhand II 2 3 3
A continuation of Briefhand I. The emphasis in this course will be on speed development. Some transcription techniques will be introduced.
Prerequisite: Briefhand I or consent of instructor.

2.702 *Briefhand III 2 3 3
A continuation of Briefhand I and II. Special emphasis on transcription skills, review of theory and speed building.
Prerequisite: Briefhand I and II or consent of instructor.

2.703 Business P.A.R 3 0 3
A course for developing English skills, efficiency and study habits which are basic to success in future business courses. Word study and dictionary skills are included.

2.704 Machine Shorthand I 2 3 3
A beginning course in machine shorthand as taken on the stenograph. Includes the study of basic letter and word forming principles and the taking of dictation in the latter part of the term.

2.705 *Machine Shorthand II 2 3 3
A continuation of Machine Shorthand I. The student should improve in knowledge of the theory of word formation, build up dictation speed and become familiar with transcription techniques.
Prerequisite: Machine Shorthand I 2.704.

2.706 *Machine Shorthand III 2 3 3
Further refinement of the theory of machine shorthand as learned in Machine Shorthand I and II to build speed. The course also includes study and practice in transcribing material taken from dictation.
Prerequisite: Machine Shorthand I 2.704 and II 2.705.

2.709 *Typing, Skill Building 1 4 3
A course designed to improve typing skill (keyboard proficiency, typing speed and accuracy). May be taken at any time after a person has learned the keyboard. Excellent preparation for students who feel their skill is not at a level high enough for advanced work in typing or who want to strenthen their skill.
Prerequisite: Typing 2.606 or consent of instructor.

2.710 *Secretarial Practicum 2 2 3
An advanced course in secretarial procedures, utilizing all previous training plus addition of other areas of specialization. Decision making and quality production are stressed.
Prerequisite: Office Procedures 2.641 and second-year standing or consent of instructor.

2.711 *Legal Machine Transcription I 3 0 3
Practice in preparing and typing from machine dictation briefs, forms, transcripts, documents and correspondence related to the legal field.
Prerequisite: Legal Terminology and Documents 2.713 or concurrent enrollment in Typing SS121.

2.712 *Legal Machine Transcription II 3 0 3
A continuation of Legal Machine Transcription I with emphasis on increased skill in typing and handling of materials in production of legal documents.
Prerequisite: Legal Machine Transcription I 2.711.

2.713 Legal Terminology and Documents 3 0 3
An introductory study of legal terminology as it applies to the legal secretary and a survey of the documents commonly encountered by the legal secretary in the office of the private practicioner.

2.714 *Legal Office Procedures 2 2 3
Thorough coverage of duties of a legal secretary, including maintaining professional relations with employers and clients; keeping financial records; filing legal documents; when and how to use court and non-court documents and procedures; learn to set priorities, make decisions and integrate office skills.
Prerequisite: Office Procedures 2.641, Typing SS121, Legal Terminology and Documents 2.713.

2.715 *Introduction to Word Processing 3 0 3
Designed to introduce various types of correspondence support activities. Primarily the keyboarding of magnetic editing typewriters, and to explain the organization of the typical word processing center as to correspondence support and administrative support functions.
Prerequisite: Typing I and II (SS121 and SS122) or consent of instructor.

2.720 Civil Exam Prep I 3 0 3
Review of subject areas included in the state civil service examination: English grammar, punctuation and spelling are covered; and fundamentals of mathematics including basic functions, fractions, percentage and business formulas and practical applications.

2.721 Civil Service Exam Prep II 3 0 3
Review of subject areas included in the state civil service examination. Also included is the usage of a reference manual, preparation of an application form and a personal data sheet.

3.200 Food and Nutrition 2 0 2
This course is a practical study emphasizing the principles of basic food preparation, nutritional values of foods and the retention of nutrients in cooking for commercial restaurants, fast foods operations, institutions and industrial catering.

3.201 Quantity Foods Production I 3 20 8
Preparation of quantity foods in a commercial kitchen

under supervision. Included are preparation of various *breakfast items, salads, entrees, stocks, soups,* sauces, bakery and dessert products and short order cooking by standardized recipes following professional preparation techniques. Stations are rotated approximately every two weeks to assure students the widest possible exposure to the commercial kitchen. Lectures on the handling of tools, equipment and materials.

3.202 *Quantity Foods Production II 3 20 8
Preparation of quantity foods in an operating kitchen under professional guidance. Students will be assigned projects in international cuisine and service.
Prerequisite: Quantity Food Production I.

3.203 *Quantity Foods Production III 3 20 8
Preparation of quantity foods in an operating kitchen under professional guidance. Students will be exposed to classical buffet and garde manger cookery during the term.
Prerequisite: Quantity Food Production II.

3.204 Dining Room Operations I 1 4 2
Students work in various types of restaurant services—cafeteria, snack bar, fountain, banquet and table service.

3.205 Dining Room Operations II 1 4 2
Continuation of Dining Room Operations I. Students also will learn American and English service techniques.

3.206 Dining Room Operations III 1 4 2
Continuation of Dining Room Operations II. Will also include discussison and demonstration of French and Russian service.

3.210 Sanitation and Safety 2 0 2
Food service sanitation and environmental health, bacteriology and food contamination, personal hygiene and safety practices, legal regulations of federal and state agencies pertaining to restaurant sanitation and USHA requirements.

3.211 Menu Planning and Culinary Terms 2 0 2
Principles of menu planning and the menu as a tool for marketing, merchandising, personnel scheduling and equipment planning and pricing. Single use, permanent and cycle menus, standard menu terminology and foreign terms are covered. Student projects in menu planning and recipe research for special occasions are included.

3.212 Purchasing and Store Control 2 0 2
Techniques of buying for large-scale food operations. Comparing food quality and establishing food specifications, use of federal and state grade standards, stock receiving, storing and issue controls.

3.213 *Elementary Food Cost Analysis 2 0 2
Basic methods of computing food costs, including the costing of standard recipes, yield of raw food, standard portions, analysis of daily food costs and the steward's report.
Prerequisite: Math for Food Service 3.216 or equivalent.

3.214 Food Production, Organization and Planning 2 0 2
Organization of commercial kitchens, quantity production work methods, the use and care of heavy duty kitchen equipment, planning and forecasting of food production and the use of the cook's production worksheets.

3.216 Mathematics for Food Service 3 0 3
Basic math used in food production, included adjusting menus for various servings, use of fractions, percents, weight, measures and an introduction to the metric system.

3.300 Internal Combustion Engines 3 9 6
A course designed to familiarize the student with construction, working principles and methods of servicing the internal combustion engine. Proper use of shop tools and equipment. Engines are disassembled, studied, serviced and properly reassembled, using accepted rebuilding and servicing procedures.

3.301 Fuel Systems and Carburetion I 2 3 3
A course in the fundamental principles of carburetion and the basics of fuel systems. Detailed instruction on the basic carburetor circuits.

3.302 Automotive Materials 2 0 2
A course developed to familiarize the student with materials and material production commonly associated with the automobile including uses and applications of the materials.

3.303 Automotive Shop Safety 1 0 1
A survey of principles of safety for the auto industry. Includes the use of films and case studies to develop an awareness of hazards and positive attitudes toward the prevention of accidents.

3.304 Automotive Electrical Systems I 3 4 4
A course designed to familiarize the student with basic electricity terminology, fundamentals and principles of operation applied to the circuitry of the automobile.

3.305 *Power Trains* 3 6 5
A course designed to familiarize the student with operation removal, repair and replacement of the essential power train components of the automobile. Includes proper methods of determining which parts should be replaced, when and how to order them.

3.306 Applied Fluid Mechanics 2 3 3
A course designed to provide instruction in the fundamental principles of automotive fluid power systems. Included are the study of the basic components of fluid power systems, how they are combined to build up circuits and the repair of these circuits. The basic design and use of hydraulic and pneumatic power systems as related to automobiles are also covered.

3.307 Automotive Chassis 2 3 3
A course designed to familiarize the student with basic frame and chassis related components of the automobile including how suspension systems work and methods of repair and adjustment. Steering gears, brakes, brake systems and related studies will be applied with methods of adjustment and repair using lab vehicles and components.

3.308 *Automotive Machine Shop 2 3 3
A course designed to familiarize the student with operations in an automotive machine shop including cyclinder head and block resurfacing, valve grinding, piston knurling, valve guide knurling, cylinder boring, piston fitting, honing, methods of precision measurement, piston pin and rod replacement and other aspects of precision machining for automotive technology.
Prerequisite: Internal Combustion Engines or department approval.

3.309 *Technical Diagram Interpretation* 1 3 2
A course designed to give the student fundamentals in sketching objects related directly or indirectly to automotive field. Sketching will involve pictorial representation, sectional views and dimensioning. Methods of diagramming will be studied including symbols, how to read diagrams related to auto wiring, and how to draw and use diagrams.

3.316 *Fuel Systems and Carburetion II 3 4 4
A lecture-demonstration course dealing with two-barrel, four-barrel and multiple carburetion systems, the diagnosis of problems in systems, technical coverage of operating principles of major types of carburetors, theory and principles of carburetor accessory devices. Manifolding heat risers, etc. Students become involved with the actual units

in the laboratory.
Prerequisite: Fuel Systems and Carburetion I or departmental approval.

3.317 *Automotive Electrical Systems II 3 4 4
A lecture-demonstration course covering in detail complete testing, diagnosis and theory of operation of the ignition, charging, cranking and lighting systems. Students participate on actual components. Laboratory reports on each job are required.
Prerequisite: Automotive Electrical Systems I or departmental approval.

3.319 *Automotive Auxiliary Systems 3 2 4
A course designed to teach the student operation, testing and repair of malfunctions in auxiliary systems consisting of power tops, windows, seats, overdrives, vacuum controls (head lamps, doors, power brake units, door locks, etc.), power steering and other automotive assist units.

3.320 Automotive Service Operations 2 0 2
An outline of the duties and responsibilities of the parts and service managers. Methods of organizing service personnel and shop facilities and an introduction to shop layout. The student will study the operation of parts rooms and the problems common to both parts and service departments.

3.325 Automatic Transmissions 2 4 3
A course designed to familiarize the student with fundamentals of automatic transmission operation including hydraulic principles, power flows and methods of gear change used in automatic transmissions. Different makes and models of transmissions as well as applications will be explored.

3.326 New Automotive Developments 3 0 3
A course designed to keep the student aware of new changes that are occurring every day in the field. Primary concern will be emission control devices of all types used on major brand autos. Another section will cover changes dealing with safety, economy and operation of the vehicles such as transistor regulators and integral alternator regulators.

3.327 *Automotive Repair I 1 9 4
A course designed to give the student experience doing many jobs on actual automobiles. The laboratory work consists primarily of prescribed jobs. Job reports are required.
Prerequisite: Third term standing or department aproval.

3.328 *Automotive Repair II 1 9 4
A continuation of Automotive Repair I, with other jobs on the automobile. Designed to provide experience and develop speed in the mechanical field.
Prerequisite: Fourth term standing or department approval.

3.329 *Automotive Repair III 1 9 4
This course is primarily a specialty class to allow the student to specialize in a particular area of interest. Automatic transmissions, engines and general areas are emphasized for students not wishing to specialize. Speed and skill are of importance.
Prerequisite: Fifth term standing or department approval.

3.330 *Tune-up and Diagnosis 3 9 6
A course designed to familiarize the student with tune-up and diagnosis procedures of the gasoline internal combustion engine including use of diagnostic equipment on the actual vehicle during laboratory practice. Repairing electrical and fuel systems related to tune-up and diagnosis of these systems along with proper repair procedures, keyed to actual experience on components and vehicles during lab periods.
Prerequisite: Electrical Systems II and Fuel Systems and Carburetion II or departmental approval.

3.600 General Forestry 3 0 3
An orientation and overall picture of forestry in the United States. It includes how forests and man are inter-dependent, the role of forests in the building of our country, the distribution and character of our forests, what a forest and forestry are, silvicultural systems, reforestation and the history of forest protection as related to fire, insects, animals and disease.

3.601 Forestry Seminar 1 0 1
A continuing discussion of the essentials necessary for successful employment in a forestry situation. Topics include resumes, interviews, working conditions, safety and evaluations. A review of technical subjects is also included.

3.603 Equipment, Machines and Instruments 2 1 3
A study of the use and maintenance of tools, equipment, machines and instruments used on the job by forest products technicians.

3.605 Tools and Equipment 1 2 2
A study of the principles of proper use and care of hand tools and power tools commonly used in forestry work. Includes fundamentals of falling and bucking, sharpening edged tools and safety in the woods. Tools studied include files, axes, pulaskis, hazel hoes, shovels, peevees, wedges, mauls and crosscut and chain saws. Practical work is accomplished for cooperating individuals or agencies. Foremanship is discussed and practiced in labs.

3.610 Tree Identification 1 2 2
A review of basic botany necessary for tree identification including taxonomy, flower and plant parts with emphasis on fruit, bark and twig characteristics. Deals with the common commercial coniferous species of the Pacific Northwest with emphasis on those species native to Oregon. Use of the dichotomous key is practiced, scientific names are studied and the economic importance of each tree is discussed.

3.611 Tree Identification 1 2 2
Plant identification with emphasis on the native hardwoods of Oregon. The common forest shrubs are included. Use of the dichotomous genus key is covered and study is made of terms used. Recognition is accomplished in field labs where scientific names are especially required.

3.612 Commercial Trees 2 0 2
A course in the identification of the commercial softwoods and hardwoods of the Pacific Northwest. Use of the dichotomus key is practiced, scientific names are studied and the economic importance of each species is discussed.

3.613 Lumber Grading 2 0 2
Technical competency required for lumber grading will be learned. The purpose, rules and provision of grading will be studied, and students will learn to recognize and identify natural and manufacturing characteristics which occur in lumber. Participants will practice grading, clears, framing and special purpose grades.

3.614 *Wood Products Marketing 2 2 3
An introduction to all aspects of wood products marketing from the producer to the consumer taking into consideration the relationships of quality control, traffic, wholesaling, retailing, financing, ordering and merchandizing.
Prerequisite: Ec100, Wood Industry Economics 4.286, Building Materials 6.281 or permission.

3.617 *Scaling Practices 2 6 4
Theory and principles of log scaling. Considerable time is spent in the field scaling logs for net scale. Types of defect and corresponding deductions for each are discussed in conjunction with field observations.
Prerequisite: Tree Identification 3.610.

3.624 *Forest Photogrammetry 2 2 3
Techniques and principles of forest photo interpretation, including forest-type mapping, volume estimating, horizontal measurement of distance, angle and area, vertical measurements, tree heights and difference of elevation of two ground points.
Prerequisite: Third term standing or approval of associate director.

3.626 Forest Sciences 3 0 3
A study of important forest diseases, forest insects and animal influences on trees and forests. Covers descriptions, damage inflicted, damage control techniques and operational control projects.

3.630 *Silviculture 3 0 3
A study of basics of forest soils, silvics and silviculture treatment of forest stands as they apply to the Pacific Northwest, especially the major forest types of Oregon.
Prerequisite: General Forestry 3.600, Tree Identification 3.610 and 3.611, Natural Cover Fire Protection 5.151, Forest Sciences 3.626 and Forest Mensuration I, 6.300.

4.100 *Electronic Drafting 0 8 3
A course for drafting majors in electrical drafting. Schematic and wiring diagrams are stressed. Other areas of study include block and flow diagrams, PC board layout and charts and graphs.
Prerequisite: Second-year standing in drafting or consent of instructor.

4.101 Drafting I 0 4 2
Fundamentals of drafting designed to give the student a basic understanding of drawing techniques. Emphasis is placed on application of drafting instruments, standard orthographic projection, layout procedures and ASA approved lettering techniques. Drawing techniques such as geometric construction, selection of views, sectional auxiliary views and standard dimensioning practices are also covered.

4.102 Introduction to Specifications 3 0 3
A survey of development, composition, legal aspects and writing of construction contract documents. Students are involved in writing exercises, inspection of actual contract documents, simulations and field visitations.

4.103 *Electrical Drafting 0 4 2
A course in fundamental electronic and electrical drafting for non-drafting majors. Areas of study include standard symbols, schematic drawings, block diagrams, industrial wiring diagrams, PC board layout and the graphics of typical electrical data.
Prerequisite: Basic Drafting for Electronics 4.124 or Drafting 4.101 or consent of the instructor.

4.105 *Drafting II 0 4 2
A continuation of 4.101 with emphasis on basic drawing techniques. Areas covered include isometrics, additional sectional and auxiliary views, assembly and detail drawings, fasteners, welding drawings and developments.
Prerequisite: Drafting 4.101 or consent of instructor.

4.111 *Structural Drafting 0 8 3
A course dealing with the utilization of structural design data for the production of structural working drawings. Includes drafting and coordinating plans and details for a specific structure emphasizing layouts, procedures and terms standard to the construction industry.
Prerequisite: Second-year standing in drafting or consent of the instructor.

4.115 *Descriptive Geometry 1 5 3
This is a course for design/drafting majors. Graphic solutions to mathematical and space relationship problems will be covered. Major areas to study will include auxiliary views, point line plane problems and revolutions. The geometric solution of vectors will also be introduced.

4.118 Sketching 0 3 1
The development of basic freehand technical sketching skills and techniques as used in the drafting process and practical pictorial communication.

4.120 *Print Reading 0 4 2
This course involves the student in various construction prints, shop drawings, and as-built drawings, teaching the student how to read and interpret the information on each. Each type of drawing will be produced by students to gain familiarity.
Prerequisite: Drafting 4.101 or consent of department chairman.

4.122 Industrial Materials 2 3 3
An introduction to fabrication and engineering materials used in industry. Emphasis is placed on non-ferrous and non-metallic materials including ceramics, plastics, light metals and "space age" metals. Laboratory time is provided to investigate the physical and electrical properties and the methods to determine these properties.

4.123 *Project Development 0 8 3
This course involves the student in drawing various construction projects in a drafting lab, then going to a plot of ground and staking, positioning and placing the project on the site (all this involves the preliminary work before construction).
Prerequisite: Drafting 4.101, Print Reading 4.120.

4.124 Basic Drafting for Electronics 0 4 2
Basic drafting techniques and standards are stressed in this course. Includes use of materials and equipment, freehand lettering, orthographic projections, dimensioning practices and the graphic and symbolic language of drafting. Line work, lettering and the appearance of the finished drawing are stressed throughout.

4.126 *Drafting Room Computation 0 2 1
A course in the computation and presentation of technical data. The application of the engineering type calculator will be stressed. Typical problems from mechanical, civil, tool design and other related areas will be utilized in this course.
Prerequisite: Technical Mathematics 6.261 and Machine Drafting 4.221 or consent of instructor.

4.131 *Mapping and Platting 1 7 3
An introduction to basic components of maps, subdivisions and plats with particular emphasis on drafting skills and techniques.
Prerequisite: Plane Surveying 6.101 or approval of instructor.

4.135 *Project Graphics 0 4 2
The making of plot plans, working drawings and plotting field data which may be found in forestry and civil engineering. The problems used in this course are those which might be found in these fields as standard industrial applications.
Prerequisite: Drafting 4.101 or approval of instructor.

4.150 Welding 1 3 2
An introductory survey of welding technology correlating technical information with actual practice to provide an understanding of the composition of various metals and methods of fabrication used in construction, maintenance and repair. Includes set-up and operation of oxyacetylene and arc welding equipment, demonstrations and practice in welding and brazing and soldering ferrous and non-ferrous metals and their alloys.

4.152 *Oxy-acetylene For Drillers 1 4 2
The use and care of oxy-acetylene welding and cutting equipment with special applications for well drillers in maintenance and repair of equipment and tools.
Prerequisite: Current enrollment in the well drilling program or approval of welding department.

4.153 Welding 1 3 2
Fundamentals and application of arc welding, oxyacetylene welding, brazing and cutting pertaining to the automotive industry.

4.154 Intermediate Arc Welding for Drillers 2 6 4
A continuation of basic arc welding covering ferrous and nonferrous alloys and welding procedures.

4.155 Fabrication Practices I 2 3 3
Practices in the fabrication of metals and metal finishing including change of shape, change of physical characteristics and joining of metals.

4.156 *Fabrication Practices II 2 3 3
Study and application of fabricated metal technology. Recognition of pattern and job material and positioning of fabricated sections for rapid completion. Automated equipment can be utilized in the elimination of distortion problems.
Prerequisite: Fabrication Practices I or department chairman approval.

4.157 *Fabrication Practices III 1 4 3
A continuation of Fabrication Practices, with emphasis on fabrication and structural and ornamental iron machinery frames and bases.
Prerequisite: Fabrication Practices II or department chairman approval.

4.158 *Fabrication Practices IV 2 6 4
Instruction and experience in production type welding with the use of jigs, fixtures and positioners.
Prerequisite: Fabrication Practices III or department chairman approval.

4.159 Blueprint Reading for Construction 2 3 3
The relationship of various drawings in a set of plans to basic drawing principles, recognition of detail in job prints related to the construction industries, prints of construction jobs, large scale detailing of portions of construction and material take off, fabrication, construction and assembly. Commercial building and bridge or dam construction prints typify the type of plans used for study.

4.160 Electric Arc Welding 2 6 4
Fundamentals of electric arc welding. Includes machine setting and electrode manipulation.

4.161 Basic Oxy-acetylene Welding 2 6 4
Fundamentals of oxy-acetylene welding introducing brazing and cutting processes.

4.162 Electric Arc Welding II 2 9 5
A continuation of Electric Arc Welding 4.160. Provides the necessary class and laboratory time to allow the student to become proficient in all position welding, electrode selection and machine setting.

4.165 *Production Mig Welding 1 6 3
Students set up and weld under production situations. Instruction in the proper selection of the MIG process to use in different production instances.
Prerequisite: Advanced MIG Welding 4.252 or department chairman approval.

4.166 *Advanced Arc Welding 1 6 3
A laboratory course designed to train certified welders. Extensive practice on simulated tests required for certification in plate and pipe welding is followed by the test and certification by the state if the student qualifies. A study of welding procedures previously covered as they apply to heavy guage welding is included.
Prerequisite: Third term standing and successful completion of basic and intermediate welding course. Certification test fee is determined by the number of students involved and the type of test. The fee must be paid at least one week prior to the test date.

4.167 *Welding for Certification 1 9 4
A continued laboratory course designed to train certified welders. Extensive practice on simulated tests required for certification in plate and pipe welding is followed by the test and certification by the state if the student qualifies. A study of welding procedures, previously covered, as they apply to heavy guage welding is included.
Prerequisite: Successful completion of basic and intermediate welding courses. Certification test fee is determined by the number of students involved and the type of test. The fee must be paid at least one week prior to the test date.

4.168 *Fabrication Shop Problems 1 4 3
An application of drafting and math courses to problems in fabrication and structural members, bins, hoppers, pipe fittings, chutes, etc. Principles and practices of pattern development for typical shapes and fittings are included.
Prerequisite: Blueprint Reading and Sketching 4.244, Drafting 4.101, Mathematics 4.202 or approval of department chairman.

4.169 *Fabrication Problems 0 8 3
A continuation of Fabrication Shop Problems 4.168 with emphasis on quality control.
Prerequisite: Fabrication Shop Problems 4.168 or department chairman approval.

4.170 *Industrial Materials and Processes 2 4 3
An introduction to the materials used by modern industry to manufacture industrial products. The ferrous and non-ferrous metals and alloys are covered as well as a number of the newly developed "exotic" metals. Emphasis is placed on the non-metallic materials used in industry. Included in the course are the study of the processes and methods of utilizing these industrial materials.
Prerequisite: Machine Tool Processes 4.802 or approval of department chairman.

4.171 *Mechanical Systems 3 3 4
An introduction to the transfer of power methods used by industry and industrial products with relation to the basic laws of physics. Particular emphasis is placed on the general types of mechanical equipment used, the purpose of the components and the maintenance requirements of the equipment.
Prerequisite: Practical Physics 4.302, Mathematics 4.202 concurrently, or approval of department chairman.

4.172 *Power Systems 3 4 4
A study of the operation, maintenance and minor repair of two-cycle and four-cycle gasoline and diesel engines. Instruction includes proper procedures in making minor service adjustments and repairs to these units. Laboratory and classroom experience in the theory of operation and the component parts of these engines.
Prerequisite: Practical Physics or approval of department chairman.

4.173 *Hydraulic and Pneumatic Systems 2 3 3
Fundamental principles of hydraulic and pneumatic systems. Includes study of the basic components of hydraulic and pneumatic systems and how they are combined to build up various circuits and ultimate use of these circuits. Factors to be considered in the selection, installation and maintenance of hydraulic and pneumatic systems.
Prerequisite: Mathematics 4.202 or approval of department chairman.

4.174 *Metal Fabrication and Finishing 2 6 4
A course designed to develop the concept of the production sequence of a completed part or machine from the fabrication and assembly process to and including heat treating and final finishing. The student will perform the procedure step by step in proper sequence, utilizing knowledge acquired in previous courses.
Prerequisite: Drafting, Machine Tool Practices, Welding Practices, Industrial Materials and Processes.

4.175 *Industrial Control Systems 2 3 3
This course will stress the operation and function of control devices and systems. The lab applications will allow the student to become familiar with control devices and systems by actual work in the areas of hydraulic, pneumatic and electronic controls.
Prerequisite: Second-year standing in mechanical design or consent of intructor.

4.176 *Hydraulic and Pneumatic Systems II 2 3 3
A continuation of Hydraulic and Pneumatic Systems 4.173 with emphasis on applications of circuits, with electrical controls.
Prerequisite: Hydraulic and Pneumatic Systems 4.173 or departmental approval.

4.177 *Foundry and Metal Forming Applications* 2 3 3

Foundry, forging and related metal forming methods will be covered in this class. Emphasis will be placed on design to facilitate production in these fields. Modern methods along with new processes and materials will be stressed. The application of these production methods to modern mechanical design will be the major emphasis of this course. The lab time for the course will be devoted primarily to local and regional industrial field trips and group discussions of these industrial visitations.

4.178 *Industrial Control Systems Design Lab 0 8 3

The general design of industrial controls including hydraulic, pneumatic and electronic systems. The systems will be stressed as will the use of truth tables and logic diagrams.

Prerequisite: Industrial Control Systems 4.175 or consent of instructor.

4.190 Industrial Accident Prevention 3 0 3

An extensive study of accident causes and costs to employer and employee. A combination of reading, lecture and Workers' Compensation Board films teach accident prevention and safety awareness from the standpoint of employer and employee, examining the role of each in promoting safe work practices.

4.200 *Mathematics 2 2 3

A basic course in practical mathematics including the fundamentals of addition, subtraction, multiplication and division in problems involving the use of whole numbers, fractions, decimals, percentages and geometric measurements. Special emphasis is placed on the analysis and solution of problems encountered in vocational fields.

Prerequisite: Proficiency with whole number operations.

4.201 *Business Mathematics 3 0 3

A continuation and practical application of the business mathematics principles studied in Mathematics 4.200, including mathematics of payroll, depreciation, insurance, taxes, dividends and inventory.

Prerequisite: Mathematics 4.200 or consent of instructor.

4.202 *Mathematics 2 2 3

A course in basic algebra and geometry designed to introduce the student to practical algebraic and geometric techniques and applications. Includes signed numbers, elements of algebra, equations and formulas, ratio and proportion, geometric figures, basic geometric measures and occupational applications of these topics.

Prerequisite: Mathematics 4.200 or consent of instructor.

4.203 *Introduction to Programming With BASIC 2 2 3

The student will study concepts, commands and statements, of the language BASIC and will write programs suited to his/her curriculum. Emphasis will be on applications using a PDP 8 computer. The student will analyze a problem, flow chart, code, run and debug the program, and interpret the machine output. (See also Mth151.)

Prerequisite: Mathematics 4.202 or Mth010.

4.204 *Mathematics 2 2 3

A practical course in mathematics which is designed to introduce the student to further geometric techniques and basic trigonometry.. The following areas will be covered, the Pythagorean Theorem, similar triangles, right triangle trigonometry, some oblique triangle trigonometry, and occupational applications of these topics.

Prerequisite: Mathematics 4.202.

4.220 *Tool Design Lab II 0 8 3

A continuation of Tool Design Lab 4.231 including advanced problems from the area of jig and fixture design and detailing. The application of tooling materials and components is stressed and a brief introduction into die design is included. A study of the numerical control of machine tools will complete this course.

Prerequisite: Tool Design Lab 4.231 or consent of the instructor.

4.221 Machine Drafting 1 7 4

An introduction in the general area of machine drafting, lettering, the use of drafting machines and instruments and line quality are stressed in this course. Shape, description and elements of modern dimensioning are included through the applications of problems in the area of orthographic projections. Geometric construction methods are covered with practical applications.

4.222 *Machine Drafting 1 7 4

A continuation of Machine Drafting 4.221. Includes the application of precision dimensioning, geometric tolerancing, auxiliary and sectional views.

Prerequisite: Machine Drafting 4.221 or approval of instructor.

4.223 *Machine Drafting 1 6 3

A continuation of Machine Drafting 4.222. Includes assembly and production drawings, isometric drawing and related pictorial drawings.

Prerequisite: Machine Drafting 4.222 or approval of instructor.

4.224 *Piping & Flow Systems Drafting 0 8 3

The detailing of a variety of piping and industrial flow systems. Schematic diagrams and pictorial layouts are also covered. Applications from heating, etc., will be included in addition to normal pipe and flow system drawings. The elements of flow systems design will be discussed.

Prerequisite: Machine Drafting 4.222 and Tech. Math 6.262 or consent of instructor.

4.226 Architectural Drafting 0 8 3

A course emphasizing basic architectural drafting techniques and methods. Covers architectural lettering, layout, arrangement symbols and conventional construction methods used in residential or light commercial buildings.

4.227 *Architectural Drafting 0 8 3

The development of basic architectural drafting techniques, symbols and methods. Familiarizes the student with advance planning, detailing, design and the application of related resource materials. Laboratory time is devoted to working drawing detailing of projects completed in Architectural Drafting 4.226.

Prerequisite: Architectural Drafting 4.226.

4.228 *Technical Illustration 0 8 3

Includes methods of pictorial drawing, exploded view drawings with pencil and ink shading. The use of both freehand and template drawings is covered. Various color media and rendering techniques are introduced.

Prerequisite: Second-year standing in drafting or consent of instructor.

4.229 *Technical Illustration 0 8 3

A continuation of Technical Illustration 4.228. The illustration of more complex pictorial presentations, exploded views and charting methods. Use of a variety of media and techniques.

Prerequisite: Technical Illustration 4.228.

4.230 *Pattern Development 0 8 3

Covers the development of patterns for sheetmetal and similar applications. The principle of descriptive geometry will be utilized in the development of typical patterns by parallel line, radial line, triangulation and simplified triangulation methods.

Prerequisite: Machine Drafting 4.222, Descriptive Geometry 4.115 or consent of the instructor.

4.231 *Tool Design Lab I 0 8 3

An introductory course in modern principles of tool design. Major areas of study include gaging, locating, clamping, drill jigs and fixtures. Limit dimensioning and tolerancing will be stressed.

Prerequisite: Machine Drafting 4.222 and Machine Tool Processes 4.802 or consent of instructor.

4.232 *Machine Design Lab 0 8 3
Practical design situations as they relate to the drafting room. The design project(s) selected lead to a comprehensive study of parts relationships, materials application and product design. Duo dimensioning (English-metric), geometric tolerancing and welding applications are an integral part of this course.
Prerequisite: Machine Drafting 4.222 and Descriptive Geometry 4.115 or consent of instructor.

4.233 *Machine Design Lab 0 8 3
A continuation of Machine Design Lab 4.232. The team approach to a more complex design problem is utilized. The application of standard manufactured parts and components to an over-all design situation is stressed and mechanical power and control systems are introduced.
Prerequisite: Machine Design Lab 4.232 or consent of instructor.

4.234 *Architectural Design 0 8 3
A problem solving course dealing with the production of architectural design solutions for assigned program requirements.
Prerequisite: Architectural Drafting 4.226 and 4.227 or approval of instructor.

4.235 *Photogrammetry I 0 8 3
An introduction to mapping procedures using aerial photo interpretation skills. Map construction is developed using standard methods, equipment and symbols.
Prerequisite: Mapping and Platting 4.131 or consent of instructor.

4.236 *Civil Engineering Drafting 0 8 3
An introductory course in the typical drafting room problems of consulting engineering firms. Typical drawings from the areas of plan-profile sheets, construction details, piping details and standards will be studied in their relationship to an overall set of plans. The student will prepare selected drawings from a sewer system, a water system or similar project.
Prerequisite: Second-year technical drafting standing or consent of instructor.

4.237 *Photogrammetry II 0 8 3
A continuation of aerial photo interpretation methods. Topographic map construction skills using anaglyphic mapping equipment are developed.
Prerequisite: Photogrammetry I, 4.235 or consent of instructor.

4.238 *Advanced TIG Welding 1 3 2
A continuation of the basic course. Includes extensive welding on mild steel plate in all positions.
Prerequisite: TIG Welding 4.250 or department approval.

4.240 Basic Arc Welding 2 9 5
Arc welding equipment, materials and procedures used in industry. Designed to develop basic techniques in flat, horizontal, vertical and overhead welding by demonstration and supervised practice. Basic technical and related information concerning processes and metallurgy is included.

4.241 *Intermediate Arc Welding 2 12 6
A continuation of basic arc welding covering ferrous and non-ferrous alloys and welding procedures. Demonstration and supervised practice of techniques on various metals, applied in fabrication and repair concurrently with related information concerning the use and structure of these metals.
Prerequisite: Welding 4.240 or 4.150 or approval of department chairman.

4.242 *Oxygen-Acetylene Cutting 0 2 1
The use and care of oxy-acetylene cutting equipment.
Prerequisite: Current enrollment in the one-year welding curriculum or approval of department chairman.

4.243 *Fabrication Procedures 1 4 3
Instruction in methods and application in layout and template design for structural shapes and pipe.
Prerequisite: Blueprint Reading and Sketching 4.244 or department chairman approval.

4.244 Blueprint Reading and Sketching 1 3 2
Basic sketching techniques and reading of three-view drawings for welders. Includes dimensioning practices, scaling, line alphabet notes and symbols. Emphasis is placed on developing an ability in reading detail and weldment drawings.

4.245 Layout Practices 2 3 3
A study of layout tools and their use in fabricating structural members, bins, hoppers, pipe fittings, chutes, etc. Principles and practices of pattern development for typical forms and fitting will be included.

4.247 *Welding Metallurgy I 2 0 2
The fundamentals of metallurgy pertaining to welders. Covers identification of ferrous metals, distortion, stress relieving, flame straightening and hardening plus various metallurgical problems.
Prerequisite: Successful completion of term one of the one-year welding curriculum or approval of department chairman.

4.248 Welding Metallurgy II 2 0 2
A continuation of Welding Metallurgy I covering the common nonferrous metals and chromium alloys.

4.249 *Weld Shop Problems 2 12 6
A review and application of the welding, layout and fabrication processes covered during the year. Study and practice of production welding methods, electrode consumption and method selection are included. Fabrication and assembly projects are selected to present typical layout, fabrication and production problems.
Prerequisite: Satisfactory completion of first and second term welding.

4.250 *Basic MIG Welding 1 4 2
Basic skills in semiautomatic MIG welding processes. A study of the principles involved in the equipment, material and procedures is combined with demonstrations and supervised practical experience using standard industrial equipment. Solid and flux-cored wire will be used in typical industrial applications.
Prerequisite: Basic arc welding and oxy-acetylene courses or approval of department chairman.

4.251 *Basic TIG Welding 1 3 2
A practical course in the fundamentals of TIG welding processes, machine setting and application and development of inert gas welding skills. Includes welding of mild steel, aluminum, aluminum alloys, stainless steel metals and magnesium.
Prerequisite: Basic arc welding and basic oxy-acetylene courses or approval of department chairman.

4.252 *Advanced MIG Welding 1 6 3
A continuation of Basic MIG Welding 4.250. Study and practice includes mild steel, a basic arc welding covering ferrous and non-ferrous alloys and welding procedures. Demonstration and supervised practice of techniques on various metals, applied in fabrication and repair concurrently with related information concerning the use and structure of these metals.
Prerequisite: Welding 4.240 or 4.150 or approval of department chairman.

4.253 Shop Safety 1 0 1
A survey of principles of safety for industry. Includes the use of films and case studies to develop an awareness of hazards and positive attitudes toward prevention of accidents.

4.254 *Shop Projects 1 2 2
Practical experience in maintenance and repair of weld shop machines, accessories and fixtures. Selected fabrication and repair projects are used to develop resourcefulness and confidence in the application of skills and knowledge

developed in conccurrent courses.
Prerequisite: Concurrent registration as a full-time student in the welding program or approval of department chairman.

4.255 DC Theory and AC Theory 12 0 9
Basic principles of DC and AC theory. The principles of operation of the radio and television circuits and their components. Basic mathematics is coordinated with the theory as needed.

4.256 DC Theory and AC Theory Lab 0 6 2
Basic principles of soldering, wire connecting and the procedures to be used in the shop. Practical experiments using basic meters and other equipment.

4.257 Electronic Devices 6 0 5
The basic principles of solid state devices and vacuum tubes, mathematics and slide rule are coordinated with the theory principles as needed.

4.258 Electronic Devices Lab 0 6 2
The theories and principles of the electronic devices. The student sets up equipment to prove the theories and principles studied.

4.259 Transistors and Circuits Theory 3 6 5
A study of electronic theory, operation of the transistor, transistor characteristics, amplifiers, oscillators, radio and television circuits, new developments of transistors and servicing of transistor circuits. The laboratory section of this course is used to apply theories and materials covered in the theory section of this course.

4.260 Use of Instruments 2 0 2
A study of electronic instruments and their applications.

4.262 Exploratory Electronics 1 0 1
Introduces the student to the basic concepts, vocabulary, equipment and manipulative skills required for electronics. It will give the student a "feel" for the skills, knowledge, and type of work done by an electronics technician. Besides being an exploratory course, it would aid a pre-technical student in his transition into the electronics engineering technician program.

4.263 Electronic Principles 2 6 4
An introduction to the principles of television theory and circuits, the transmission and make-up of signals. Receiver circuits are traced and analyzed so that theory, troubleshooting and reading of schematics are emphasized.

4.266 Television Principles 3 6 5
An introduction to the principles of television theory and circuit. A study of underlying principles of television transmission, the makeup of the television signal and the receiver circuits. Each receiver circuit is analyzed individually as to the principle of operation and possible trouble causes.

4.268 Television Servicing 1 3 2
Circuits of the television receivers are analyzed within the receivers. Voltage readings, oscilloscope patterns, resistance readings and other testing procedures are used and the results analyzed. Troubles are installed within the TV receivers and practice gained by determining the trouble.

4.272 Solid State Servicing 3 3 4
A study of the principle of trouble shooting solid state circuits. The students circuit trace and trouble shoot solid state circuits. Commercial units are worked on with emphasis on how the circuits operate and the effects of problems within these circuits.

4.274 Logical Trouble Shooting 3 3 4
A course designed for the gaining of knowledge necessary to deal with a logical approach to trouble shooting. Emphasis is placed on the approach, finding and solving of problems. The use of equipment for servicing is stressed.

4.275 Electronic Management 2 0 2
A practical course for the service technician covering the areas of customer relations, business costs, inventories, shop planning and advertising methods. Discussion of the state licensing law.

4.280 Forest Products 3 3 4
A study of the major non-chemical wood products industries and a brief introduction to the pulp and paper industry. Emphasis is placed on the economic importance, properties, uses and manufacturing processes.

4.281 Pulp and Paper Technology 3 3 4
The fundamental processes of the pulp and paper industry. Mechanical and chemical pulping, refining, screening, filling, sizing and sheet formation are included along with cooking liquors, recovering chemicals, fiber recycling and testing of pulp and paper products.

4.282 Logging Practices 2 6 4
A study of the harvesting and transportation of logs.

4.283 Milling Practices 2 6 4
A study of sawmill machinery and operations. In addition, material flow concepts and material handling equipment used in major forest products industries will be studied.

4.286 *Wood Industry Economics 3 0 3
A basic review of economic principles applied to forestry and wood products industries including the allocation of forest lands, timber, human and industrial resources to optimal usage. Also includes an economic guide for timber production and an economic approach to products other than timber, such as recreation, water and wildlife, valuation topics, interest, taxes and capital and input-output analysis. Covers the wood industry in the Pacific and Rocky Mountain regions of the United States and production economics in lumber and other forest products industries.
Prerequisite: Basic Economic Principles Ec100.

4.287 Methods of Supervision 3 0 3
The basic techniques of supervision. Covers all aspects of supervision such as leadership, organization, communications, morale, job analysis, job training, accident prevention, planning time studies, cost analysis, etc.

4.290 Drilling Operations I 3 2 4
A comprehensive introduction to the water well drilling industry. A study of drilling methods, equipment, tools and terminology, through current literature, lecture, demonstration, practice and field trips. Includes an introduction to well construction standards, specifications, contracts and safety.

4.291 *Engine Theory and Maintenance 2 4 3
A continuation of power systems which involve the student in more detailed study of internal combustion engine performance. A study of diesel engines will be introduced including the operation and maintenance of such engines.
Prerequisite: Power Systems 4.172 or approval of department chairman.

4.292 *Drilling Operations II 2 4 3
Further development in drilling operations with emphasis on a variety of setups and operation under varied conditions providing an introduction to and practice in well design development, sampling operations and well sanitation.
Prerequisite: Third term standing in the well drilling program or approval of the department chairman.

4.293 State Drilling Standards and Record Keeping 3 0 3
State standards for the water well drilling industry in terms of health and sanitation, fair practices, ethics and standard drilling procedures. Required record keeping and record study is also included.

4.294 Hydrology for Drillers 3 2 4
A study of hydraulics pertaining to water wells, including water table studies, cones of depression and areas of incluence. Factors affecting quality flow and well size and development will also be studied.

4.295 *Drilling Operations III 3 6 5
A continuation of the drilling operations sequence, with review and application of previous subject matter with emphasis on sampling operations and well design and development.
Prerequisite: Drilling Operations II or approval of department chairman.

4.296 *Drilling Operations IV 3 6 5
A continuation of the drilling operations sequence with emphasis on maintenance and repair of drilling equipment and tools. Introduces water analysis and well rehabilitation. Troubleshooting and preventative maintenance are emphasized.
Prerequisite: Second year standing in the well drilling program or departmental approval.

4.297 *Drilling Operations V 5 12 8
The final course in the drilling operations sequence, summarizing and applying skills and knowledge developed. Emphasis is on development of the water supply with pump selection installation, testing, controls, seals and interpretation and reports of the results.
Prerequisite: Drilling Operations III and IV or departmental approval.

4.298 Well Drillers Operating Lab 0 4 1
A supplement to existing lab hours as needed, providing practical application of knowledge and skills learned in previous and current well drilling and related subjects. Included are drilling operations, well development, installation and maintenance and repair of equipment.

4.300 Practical Physics 3 2 4
Practical physics for skilled workers, covering heat, light and sound. Laboratory time is provided for demonstrations and experiments to help clarify the principles and procedures covered in class.

4.302 *Practical Physics 3 2 4
Practical physics for skilled workers covering matter, measurements, mechanics, machines and electricity. Laboratory time is provided for demonstrations and experiments to help clarify the principles and procedures.
Prerequisite: Practical Physics 4.300, Math 4.202 or equivalent, or consent of instructor.

4.305 Elementary Geology 3 2 4
A study of physical geology as it pertains to the drilling industry. Understanding and recognition of geological formations, topography and maps to better identify and locate satisfactory drilling sites.

4.321 Introduction to Drafting 0 3 1
Fundamentals of drafting designed to give the student a basic understanding of drawing techniques. Emphasis is placed on application of drafting instruments, standard orthographic projection, layout procedures and ASA-approved lettering techniques. Drawing techniques such as geometric construction, selection of views, sectional and auxiliary views, revolutions, heads and standard dimensioning practices are covered.

4.324 Architectural Drafting I 0 3 1
A problem-solving course dealing with the production of architectural design solutions for assigned program requirements.

4.325 Architectural Drafting II 0 3 1
Basic architectural drafting techniques and methods. Covers architectural lettering, layout, arrangement, symbols and conventional construction methods used in residential or light commercial buildings.

4.326 Architectural Drafting III 0 3 1
Development of basic architectural drafting techniques, symbols and methods. Familiarizes the student with advance planning, detailing, design and the application of related resource materials.

4.444 Pulp and Paper Technology II 1 4 3
Acquiring proficiency in laboratory techniques and solving mill problems will be emphasized. Specific objectives of the students will be met in cooperation with instructors from other disciplines and industry.

4.500 Employer-Employee Relations 3 0 3
A course dealing with the rights and responsibilities of labor and management and the roles played by them in relation to the individual, the community and the national economy. Areas covered include history, organization, laws, wage and hours, contracts and community responsibilities.

4.603 *Machine Design 3 8 6
A study of the traditional concepts of the fundamental practices and theories of machine design. Materials, manufacturing, stress analysis, failures, shafts, bearings, gearing, drives, brakes, etc. are covered. Problems are chosen to allow the student to draw from his/her background or related and major area classes.
Prerequisite: Sixth-term standing in the mechanical design curriculum or consent of the instructor.

4.605 Design Problems 2 6 4
Opportunities in advanced drafting room practice. The student applies his/her knowledge of mathematics, science and drawing to practical problems while designing complete machines or component parts machines. Includes analyzing the problem, gathering data, sketching ideas on paper, doing all necessary mathematical calculations, making working drawings and checking the work.

4.802 Machine Shop I 2 3 3
A basic machine shop operations course, introducing students to the principles involved and operations of basic machine tools work and procedures. Includes hand tools, measuring tools, layout tools, drill press (sensitive), grinder, saws, lathes and milling machine.

4.804 *Machine Shop II 2 3 3
A continuation of the basic course, machine tool processes, including machine set up and machining operations, radial drill press, lathe, milling machine and surface grinder.
Prerequisite: Machine Shop I 4.802 or departmental approval.

4.805 Machine Shop Operations Lab 0 3 1
A supplement to existing lab hours for first-year machine shop students, providing practical application of knowledge and skills learned in previous and current machine shop subjects. Included will be technical instruction on specific machinery.

4.807 Machine Tool Processes I 2 6 4
A basic machine shop operations course, introducing students to the principles involved and operations of basic machine tools work and procedures. Includes hand tools, measuring tools, layout tools, drill press (sensitive), grinder, saws, lathes and milling machines.

4.808 *Machine Tool Processes II 2 6 4
A continuation of the basic course, Machine Tool Processes I, including machine set up and machining operations, radial drill press, lathe, milling machine and surface grinder.
Prerequisite: Machine Tool Proc. I, 4.807, or departmental approval.

4.809 *Machine Tool Processes III 2 9 5
A continuation of the basic machine tool operation sequence introducing students to production methods, inspection and quality control. Includes metal spraying and the job shop type repair projects, generally increasing students' understanding of common industrial practices and an introduction to and application of carbide cutting tools. Habits and attitudes are emphasized as they relate to productivity, general housekeeping, tool care, safety and regard for fellow workers.
Prerequisite: Third-term standing in machine shop program or departmental approval.

4.810 Shop Drawings and Layout I 2 6 3
The first of two courses in development, interpretation and use of mechanical drawings and shop sketches. Covers fundamentals of mechanical drawing and sketching along with blueprint reading and layout principles and tools and practices. Included are drawing techniques such as geometric construction, selection of views, section and auxiliary views, dimensioning with blueprint reading and layout problems in the shop.

4.811 Shop Drawings and Layout II 1 3 2
A continuation of Shop Drawings and Layout I. Further development of mechanical drawing and geometric construction with applications in blueprint reading and layout problems. Limitations of general shop equipment are discussed.

4.820 Machine Shop Problems 3 0 3
An applied mathematics course. Typical machine shop problems are solved with the aid of mathematics. Sections covered include tables and practical applications, figuring tapers, tolerances and allowances, gearing problems and bearing fits.

4.824 *Machine Shop Automation 2 0 2
A study of theory and practice of automation. Mechanical numerical card and tape controls are studied. History, theories, trends and aplications of automated machines are given attention. Field trips are scheduled to supplement classroom activities.
Prerequisite: Mathematics 4.202, Machine Tool Processes 4.804 or approval of department chairman.

4.833 *Advanced Lathe Practices 2 6 4
A continuation of the machine tool series. Studies include internal boring, threading and taper turning, angular turning and machine reaming. Laboratory time is provided for student operation of equipment.
Prerequisite: Machine Shop Practices 4.841.

4.837 *Advanced Milling Machine Practices 2 4 3
A continuation of the machine tool series. Studies include straddle milling, rotary table work, dividing head construction and indexing, gear cutting and terminology and boring work on milling machines. Laboratory time is provided for student operation of equipment.
Prerequisite: Machine Shop Practices 4.841.

4.841 Machine Shop Practices 3 9 6
This course stresses the working conditions of a typical machine shop. Students are assigned projects that require the related technical information and shop skills previously acquired. Instruction will include advanced theory application and extended machine operations.

4.845 *Job Machining Practices 4 12 8
Typical job shop applications and sequence with emphasis on speed and quality of finished product.
Prerequisite: Advanced Lathe Practice 4.833, Advanced Milling Machine Practices 4.837, Metal Fabrication and Finishing 4.174.

4.847 *Tool and Fixture Design and Application 2 7 4
An overview of design and making of tool fixtures and jigs. Application of drill jigs, special work holding devices, indexing work holders and other applications. Class time devoted to designing and drawing jigs and fixtures.
Prerequisite: Advanced Lathe Practices 4.833, Advanced Milling Machine Practices 4.837, Metal Fabrication and Finishing 4.174.

4.849 Heat Treatment of Steel 2 3 3
A study of methods and procedures for improving the characteristics of steel by hardening and tempering. Processes of heat treating including furnace and flame hardening, case hardening, tempering, annealing and normalizing, and hardness and tensile testing. Laboratory time is provided for hardening, tempering and testing demonstrations and experiments.

5.100 Introduction to Fire Protection 3 0 3
Philosophy and history of fire protection. Trend toward increased education for fire fighters. Requirements for A.S. degree in fire protection. Career opportunities and requirements. History of loss of life and property by fire, role responsibility of the fire department in the community, organization and function of local, county, state, federal and private fire protection agencies and allied organizations, sources of professional literature, survey of professional career opportunities, development of resume.

5.101 Fundamentals of Fire Prevention 3 0 3
Philosophy and history of fire protection, review of life and property loss statistics, fire protection agencies, current and future fire protection problems, fire prevention programs, general public education, development and enforcement of fire prevention laws and regulations, responsibility of state fire marshals, local fire departments, property owners, fire safety, reporting fire prevention activities, drills, policies, public relations, DEQ regulations. Emphasis on "company inspections."

5.103 Elementary Science for Firefighters 3 2 4
A course in practical physics covering matter, measurements, machines and energy. Laboratory time is provided for demonstrations and experiments to help clarify the principles and procedures covered in class.

5.104 *Fire Service Hydraulics 3 2 4
Hydraulic laws and formulas as applied to the fire service. Includes a review of basic math and application of formulas and mental calculations to hydraulic problems. Fireground water supply problems and underwriter's requirements for pumps and accessories are also covered.
Prerequisite: Math 4.200 or equivalent.

5.105 *Fire Pump Construction and Operation 2 2 3
Theory of pump operation, types and features of various pumps, practical operation of fire pumps and accessories. Drafting, hydrant and tanker operations and rule of thumb fireground hydraulics calculations are included.
Prerequisite: 5.104 or opproval.

5.106 *Fire Protection Systems and Extinguishers 3 0 3
Portable extinguisher equipment, sprinkler system, protection systems for special hazards, fire alarm and detection systems, ventilating systems.
Prerequisite: Hazardous Materials 5.109 and Fire Science 6.966 or approval of instructor.

5.107 Fire Investigation 3 2 3
Study of burning characteristics of combustibles, interpreting clues, burn pattern leading to point of origin, identifying incendiary indications, sources of ignition and materials ignited and preservation of fire scene and evidence.

5.108 Hazardous Materials I 3 0 3
The chemistry of fire. Includes handling emergencies involving flammable liquids, gases and solids, cryogenics, combustible metals, plastics and oxidizing agents.

5.109 Hazardous Materials II 3 0 3
Handling of emergencies involving explosive and unstable materials, rocket propellants, water reactive materials, poisons, corrosives, combustion products and radioactive materials.

5.110 Fire Training Programs and Techniques 3 0 3
Purposes of fire service drills and training programs. The development and operation of the departmental training programs. Facilities and equipment necessary for modern training, selecting and training the instructional staff, lesson planning, training aids and other techniques of program training.

5.111 Fire Insurance Principles and Grading Schedules 3 0 3
Insurance grading schedules and principles of application.

Methods of analyzing fire hazards and the effects of fire hazards on fire insurance rates. The fundamentals of fire insurance rating methods, loss records and municipal grading.

5.112 *Fire Department Organization and Management 3 0 3
Fire company and department organization and management, duties and responsibilities, response to alarms, public relations, fire prevention, records and communications. Basics of why and how various functions of administration are carried out, authority and responsibilities of command officers, chiefs and elected officials.
Prerequisite: Introduction to Fire Protection, Fundamentals of Fire Prevention and Introduction to Psychology, or consent of instructor.

5.113 Fire Fighting Tactics and Strategy 3 0 3
Pre-fire survey and planning, response and size-up, fireground tactics, analysis and post-mortem.

5.116 *Fire Codes and Ordinances 3 0 3
A study of the uniform fire code, uniform building code, flammable liquid and other codes relating to fire prevention and life safety.
Prerequisite: Introduction to Fire Protection 5.100, Fundamentals of Fire Prevention 5.101 or approval of instructor.

5.117 Water Distribution Systems 3 0 3
Main systems—size, gridding, valves, hydrants, pumping stations and resevoirs, fire flow requirements for commercial and residential districts, storage tanks, cisterns and mobile supplies.

5.119 Blueprint Reading for Firemen 3 0 3
Fundamentals of blueprint reading including the interpretation and meaning of lines, views, elevations, conventions and symbols and the relationship of the various elements comprising architectural drawings and specifications.

5.120 Fire Service Rescue Practices 1 2 2
The use of rescue tools and related equipment, common rescue carries, search and rescue procedures, handling nets and lines, care of victim and transportation, excavation and electrical.

5.122-27 Fire Related Experience variable
Subject matter provides orientation on how the fire incident related experience courses operate, typical engine company organization, typical engine configuration, small tools and minor equipment carried, basic hose practices, basic hose lays, use of protective breathing apparatus, response district maps—phantom box areas, communication procedures, fire apparatus driving practices.

5.129 Emergency Medical Technology I 3 4 6
Basic skills in patient assessment, patient care, preparation of equipment, communications, extrication, patient transfer and patient transport. Successful completion prepares eligible students to sit for Oregon State Health Division examination for EMT-I certification.
Prerequisite: Age 18 required. Admission and eligibility for certification based on Oregon State Health Division priorities and regulations. Consent of associate director.

5.131 Building Construction for Fire Suppression 3 0 3
Designed to acquaint the firefighter with fire problems inherent in the structural elements of buildings. Knowledge gathered through interpretation of blueprints and inspections of various building types provide a basis for applying effective extinguishment practices, with adequate safeguards for personnel.

5.135 *Emergency Medical Technology I, Part A 1 2 2
Basic skills in patient assessment, patient care, preparation of equipment, communications, extrication, patient transfer and patient transport. Successful completion prepares eligible students to sit for Oregon State Health Division examination for EMT-I certification.
Prerequisite: Age 18 required, admission and eligibility for certification based on Oregon State Health Division priorities and regulations, consent of associate director.

5.136 *Emergency Medical Technology I, Part B 2 2 3
A continuation of 5.135.
Prerequisite: Satisfactory completion of 5.135 or consent of associate director.

5.137 *Emergency Medical Technology I, Part C 0 2 1
Continuation of 5.135 and 5.136. Ten hours of patient contact in selected emergency settings.
Prerequisite: Satisfactory completion of 5.136 or consent of associate director.

5.151 Natural Cover Fire Protection 3 2 4
The organization, methods, tactics and strategy of safely controlling and extinguishing grass, brush and forest fires, uses of hand tools, portable pumps, motorized apparatus, aircraft and helicopters, chemicals and other related equipment used in the suppression of natural cover fires. Also covers forest and wildland fire prevention techniques.

History and philosophy of fire prevention, review of life and property loss statistics, fire protection agencies, current and property loss statistics, fire protection agencies, current and future fire protection problems, fire prevention programs, general public education, development and enforcement of fire prevention laws and regulations, responsibility of state fire marshals, local fire departments, property owners, fire safety, reporting fire prevention activities, drills, policies, public relations, DEQ regulations.

5.161 Fire Prevention Inspection 3 0 3
Inspection, preparation, pre-approach information, inspector equipment, appearance, gaining admission, explanations, inspection tour, techniques, mapping, observation, note-taking, records, follow-up, persistence, consistency, advantages, purposes, records maintenance, in-service company inspections, types of inspections by rating bureaus and insurance companies, industrial complexes and home inspections, value of public relations, hazard identification and elimination, fire extinguisher and other installed fire protection equipment inspection.

5.162 Firefighters Law 2 0 2
Firefighters' legal responsibilities in driving, inspecting, alarms and communications, other fire protection activities, firefighters' rights, duties, liabilities and participation in legal activities including state and local fire marshal laws relating to fire protection.

5.163 Water Supplies 1 0 1
Mechanics of liquids, principles of the effect of pressure on liquids, pressure-static, operating, residual, flow, resistance, discharge, specific gravity, adequacy and degree of liability of various types of water systems, relative capacities of various sizes of mains, hydrant types, specifications, installation and maintenance, distribution, fire flow requirements, computing available water, fire flow tests, supplying installed fire protection equipment, pilot and pressure gauges and grid and dead end water main systems.

5.164 *Building Construction—Fire Protection 3 0 3
Classification of buildings, structural features affecting fire spread, effect of fire on structural strength, fire stops, ratings of materials, fire retardents, sanborne maps.
Prerequisite: Blueprint Reading for Firemen 5.119 or consent of instructor.

5.165 Industrial Fire Protection 3 0 3
Specific concerns and safeguards related to business and industrial fire brigade organization and development, fire prevention programs, hazardous situations and prevention methods, gaining cooperation between the public and fire

department organization, study of elementary industrial fire hazards in manufacturing plants.

5.166 Advanced Detection and Prevention Systems 3 0 3
Heat, flame, smoke, ion detectors, alarm transmitting and receiving equipment, system inspecting and servicing requirements, extinguisher system design and installation standards, sprinkler system valves, water supply, piping, and service testing, protection systems for special hazards.

5.167 Fire Insurance Fundamentals 3 0 3
The relationship between fire defenses, fire losses and insurance rates, basic insurance principles, fire loss experience, loss ratio, applying the ISO grading schedule and state regulations of fire insurance.

5.401 *Expanded Duties I 0 3 1
A presentation of the theory and practice of new procedural responsibiilties delegated to dental auxiliary personnel. Includes discussion and demonstration of fluoride application, rubber dam application, polishing of silver and preventative dentistry.
Prerequisite: Introductory Concepts of Dental Assisting 5.411 or equivalent.

5.402 *Expanded Duties II 0 3 1
A continuation of 5.401, including laboratory procedures with practical application of the topics covered in Expanded Duties I.
Prerequisite: Expanded Duties 5.401.

5.403 *Chairside Assisting and Basic Lab Procedure 2 11 6
Practical experience in chairside assisting at the University of Oregon Dental School. The lecture hour is utilized in review of experiences at the dental school.
Prerequisites: All courses listed for dental assisting curriculum, terms I and II.

5.405 Dental Anatomy and Physiology 3 3 4
A study of anatomical terminology, head anatomy including skeletal structure biood supply, innervation of the face, oral anatomy and physiology, muscles of mastication and paranasal sinuses.

5.407 Advanced Laboratory Procedures 3 3 4
Principles of full and partial denture prosthesis and the use of laboratory equipment. Instruction includes experience in investing and casting crowns and bridges and assisting in other advanced laboratory procedures.
Prerequisite: Dental Sciences II 5.416.

5.408 Principles & Basic Application of Dental Radiology I 2 3 4
Course designed to give the student a basic understanding of the principles of radiology as well as the practical application of these principles, such as film placement, cone angulation, machine manipulation, film processing and the use of safety precautions.

5.409 *Dental Office Practice 1 16 6
Practice and observation in a dental office.
Prerequisite: Satisfactory completion of all courses in dental assisting curriculum prior to spring term.

5.410 *Dental Office Management 2 2 3
A course designed to help the student with personal and vocational relationships, including the telephone, reception procedure, business office procedure, purchases, storage and care of supplies and maintenance of office and equipment.
Prerequisite: Introductory Concepts Dental Assiting 5.411.

5.411 *Introductory Concepts in Dental Assisting 4 6 6
A basic study of the dental assistant's role with reference to personal regimen, housekeeping, terminology, materials, instruments and equipment. Emphasis is placed on the qualifications necessary for success in the dental assistant field.
***Prerequisite:** Consent of associate director.*

5.413 Principles of Dental Radiology II 0 2 1
A continuation of Principles & Basic Application in Dental Radiology designed to develop further skills in producing diagnostic radiographs.

5.415 *Dental Sciences I 3 0 3
A study of the sciences associated with the practice of dentistry. The course includes such subjects as microbiology, oral pathology, sterilization, anesthesia, first aid and pharmacology.
Prerequisite: Basic Sciences for Health Occupations 5.601 or Physiology Fundamentals Bi120 or consent of associate director.

5.416 *Dental Sciences II 3 3 4
A study of the various fields of specialized dentistry recognized by the American Dental Association and the sciences associated with them. The course includes such subjects as diet and nutrition, as well as the dental disciplines of oral surgery, periodontics, pedodontics, endodontics, orthodontics and public health dentistry. Applied psychology is covered through role playing in simulated clinical situations.
Prerequisite: Dental Sciences I 5.415 or consent of associate director.

5.435 Nursing Assistant 5 25 14
A one-term course that prepares the individual for basic health care duties. Open to both men and women in satisfactory health as the nursing assistant works in close contact with patients. Students gain practical experience in nursing assistant methods, procedures and techniques. Students who successfully complete the nursing assistant program earn a basic certification.

5.436 *Survival in the Bureaucracy, HRT I 3 0 3
An introductory training course for human service workers with emphasis on awareness and acceptance of self and others, roles and functions of human service workers, professional ethics and basic communication and problem solving skills.
Prerequisite: Admission to program or consent of the associate director.

5.437 *Interviewing Skills, HRT II 3 0 3
Introduction to the theory and practice of interviewing. Didactic material couples with extensive role playing relating to student field placements. Students experience both professional and client roles. Basic purposes and techniques of observation, interviewing, summarizing, recording and communicating are discussed.
Prerequisite: 5.436, concurrent registration in Practium: HRT 5.443-8 or consent of associate director.

5.438 *Group Dynamics, HRT III 3 0 3
Introduction to theory of groups and group functioning. Styles of group leadership, roles played by various group members and supervisor-subordinate relationships are defined and discussed. A process is utilized in which the student observes him/herself as part of the group.
Prerequisite: 5.439, concurrent registration in Practium: HRT 5.443-8 or consent of associate director.

5.439 *Futures, HRT IV 3 0 3
Successful job finding techniques and the topic of termination by staff, students and clients.
Prerequisite: 5.438, concurrent registration in Practicum: HRT 5.443-8 or consent of associate director.

5.440 *Applied Personality Theory I, HRT V 3 0 3
This is the first of a two-term sequence covering the theoretical models used in our culture to describe mental health/illness and an overview of the treatment modalities

for each theory. This course also deals with the application of these theories in the local agencies. Reporting techniques, semantics, advocacy and application of intervention techniques are included. In addition, other topics such as testing and child abuse are presented.
Prerequisite: 5.439, concurrent registration in Practicum: HRT 5.443-8 or consent of associate director.

5.441 *Applied Personality Theory II, HRT VI 3 0 3
This is the second of a two-term sequence covering the theoretical models used in our culture to describe mental health/illness and an overview of the treatment modalities for each theory. This course also deals with the application of these theories in the local agencies. Reporting techniques, semantics, advocacy and application of intervention techniques are included. In addition, other topics such as eclecticism and moral development theory are presented.
Prerequisite: 5.440, concurrent registration in Practicum HRT 5.443-8 or consent of associate director.

5.442 Community Resources 3 0 3
A course designed to familiarize the student with the social service delivery system, both locally and historically.

5.443-48 *Practicum:Human Resources Technology variable
Practicum is literally instruction in the "field." Students learn to do through on-site clinical and community experience with a variety of human service organizations.
Prerequisite: Admission to the HRT program and concurrent enrollment in HRT Practicum Seminar or consent of associate director.

5.513 Multimedia First Aid 1 0 1
Fundamentals of first aid theories and procedures. Upon satisfactory completion, student will be issued American National Red Cross Multimedia First Aid card. Meets OSHA requirements.

5.525 Gerontology 3 0 3
The physical, mental and cultural dynamics of aging will be presented as a continuation of the human growth process. The material will be presented from an orientation of involvement of the aging with life rather than a preparation for death.

5.600 *Medical Terminology I 3 0 3
Analysis of anatomical terms, roots, prefixes and suffixes, as well as Greek and Latin verbs and adjectives in building a medical vocabulary. Examination of representative anatomical structures, diseases, operations, tumors and descriptive terms by simple analysis of a word.

5.601 Basic Sciences for Health Occupations 3 3 4
Introductory concepts of physics, chemistry and microbiology. Includes practical application of problem solving, scientific observation and measurement, use of equipment and basic laboratory techniques.

5.602 *Medical Assisting, Basic Procedures 2 2 3
A survey of the requirements and qualities for success as a medical assistant. Techniques, methods and procedures including assisting the physician with examinations, medical and surgical aseptic procedures, obtaining vital signs, care of equipment and supplies as well as drugs and solutions.
Prerequisite: Admission to medical assisting program.

5.603 *Medical Transcription 1 2 2
Introduction to the techniques of transcribing from the recorded voice to the typewriter. Operation of the transcriber and transcribing mailable copy with speed and efficiency. Practice includes transcribing letters, case histories, pathological reports and other medical records.
Prerequisite: Typing II SS122 and Medical Terminology I 5.600 or consent of associate director.

5.604 *Medical Office Procedures 3 3 4
Techniques and procedures used in the medical office, reception of patients, use of the telephone, appointment making, filing. Includes techniques, methods, procedures of processing medical and health records, forms, insurance claims, travel arrangements.
Prerequisite: Typing II SS112 or consent of associate director.

5.605 *Introduction to Medical Science 3 0 3
A survey of disease conditions, types of treatment and medical and surgical specialties.
Prerequisite: Consent of associate director.

5.606 *Medical Assisting, Advanced Procedures 2 2 3
Theory and practice of basic diagnostic and treatment procedures, collection, preparation and preservation of specimens for diagnostic studies.
Prerequisite: Medical Assisting Basic Procedures 5.602, Medical Terminology I 5.600 or consent of associate director.

5.607 *Medical Office Management 3 0 3
A course designed to prepare the medical assistant to handle finances and records with accuracy and efficiency and to provide an understanding of accounting, credits and collections that will facilitate working with accountants, auditors and collection agencies in maintenance of good records. It will also include training in the use of transcribing machines and practice in transcription of letters and medical reports.
Prerequisite: Basic Typing, Business Mathematics or consent of instructor.

5.609 *Medical Office Practice 1 16 6
Practice in clinical situations of medical assisting methods, procedures and techniques.
Prerequisite: Current enrollment in medical assisting program and satisfactory completion of all medical assisting courses before spring term or consent of associate director.

5.610 *Medical Terminology II 3 0 3
Analysis of anatomical roots, prefixes and suffixes, as well as Greek and Latin verbs and adjectives in building a medical vocabulary. Examination of representative anatomical structures, diseases, operations and descriptive terms by simple analysis of a word.

5.611 *Medical Law and Ethics 3 0 3
A survey of the manner in which the law affects the practice of medicine and the codes of behavior the medical profession has set for itself and an introduction to medical economics and the history of medicine.
Prerequisite: Consent of associate director.

5.615 Body Structure and Function I 3 0 3
An overview of the normal structure and function of the human body, chemical principles, characteristics of the cell as basis for life, organization of tissues, organs and systems and the structure and function of body systems. Must be taken in sequence.

5.616 *Body Structure and Function II 3 1 3
See 5.615.
Prerequisite: Body Structure and Function I, 5.615.

5.620 *Health Information System Procedures I 2 4 4
Health information systems and related skills and practice in admitting and bed control procedures. Includes basic health statistics, health record content and discharge procedures, transcribing doctors' orders, filing procedures, indexes and registers, scheduling and appointments and receptionist functions.
Prerequisite: Enrollment in health records option of either the medical asistant or medical secretary programs. Admission to this option requires skills in typing with proficiency of 35 wpm, basic mathematics and basic English usage.

5.621 *Health Information Systems Procedures II 3 4 5
Continuation of Health Information Systems Procedures I.

Prerequisite: Satisfactory completion of Health Information Systems Procedures I 5.620.

5.622 *Health Records Processing 0 20 5
Processing medical reports and records including basic histories and physicals, discharge summaries, operative reports, medical specialty reports and radiology, pathology and autopsy reports. A variety of problem sitautions in conclusion which include actual experiences in, or from, a variety of offices and settings. Evaluation in this course is achieved through demonstration by student of his/her proficiency in typing, transcription speed, accuracy and organization/processing of health record information. Projects will be graded continuously by instructor for immediate feedback to the student.
Prerequisite: Health Information System Procedures II 5.621, Body Structure and Function II 5.616 or Medical Terminology II 5.610, typing speed of 50 wpm on a five-minute timing and no more than five errors, or consent of associate director.

5.700 Health Occupations Overview 1 0 1
The study of concepts for organization of resources for health care and services, the role of the health worker as a member of the health team and the rights and responsibilities of the patient as a member of the health team.

5.705 Nursing V 4 15 9
Study of basic needs of children and adults with acute illness. Nursing V is a study of fluid and eletholyte imbalance in a variety of nursing situations dealing with acuity in illness. Theory and practice is correlated in appropriate areas.

5.706 Nursing VI 4 16 9
Study of basic needs of children and adults in more complex nursing situations including care for a group of children and adults with multiple problems, in crisis and in emergency situations.

6.101 *Plane Surveying 2 6 4
A beginning study of surveying techniques including fundamentals of taping and leveling, care and handling of surveying instruments and office procedures. Provision is made by appropriate field work for practical application of the techniques learned.
Prerequisite: Foresters - Math 4.202, Engineers - Math 6.261.

6.103 *Plane Surveying 2 6 4
A continuation of Plane Surveying 6.101. A study of distance and direction measurement, employing transits, theodolites, steel tapes, traversing and associated office computations, areas, stadia, circular curves and brief outline of public land surveys.
Prerequisite: Engineers - Surveying 6.101 and Mth 6.262, Foresters—Surveying 6.101 and Math 4.202.

6.105 *Strength of Materials I 2 3 3
A study of the stresses and strains that occur in bodies when subjected to tensile, compressive and shearing forces, including the common theory of beams. The distribution and magnitude of stresses are examined in welded and riveted joints, thin wall cylinders, torsional members and beams. Practice problems emphasize the materials studied.
Prerequisite: Applied Mechanics 6.109 and Technical Math 6.266 taken concurrently or equivalent.

6.109 *Applied Mechanics 2 3 3
A study of static forces and their effect upon rigid bodies at rest. This includes resolution of forces, equilibrium and resultants of force systems.
Prerequisite: Third term standing or approval of associate director.

6.110 *Construction Estimating 2 3 3
A course designed to develop skills in estimating the amount and cost of materials required and labor cost involved in various types of construction. An opportunity is provided for the application of these skills by making estimates of material and labor quantities and costs for representative types of construction.
Prerequisite: Second-year standing or approval of associate director.

6.111 Applied Mechanics 2 3 3
This course deals with the motion of rigid bodies and with the forces that produce or change their motion. The principles or rectilinear motion, curvilinear motion, rotation and plane motion are covered. Laboratory time is provided for the conducting of experiments to clarify the principles and procedures covered in class.

6.112 *Hydraulics 2 2 3
The first course in the study of hydraulics covers the fundamental properties of fluids, principles of hydrostatic pressure—including Pascal's law, the hydrostatic paradox, Archimedes principle—measurement by manometer and the measurement of fluid properties. The relationship of hydrostatic pressure and center of gravity and the effect of hydrostatic pressure exerted against plane surfaces will also be discussed. Time is provided for demonstrations and experiments to help clarify the principles and procedures covered in class.
Prerequisite: Fifth-term standing or approval of associate director.

6.113 Hydraulics 3 2 4
This course is a study of static and dynamic hydraulics. It solves the many problems associated with these concepts. Some experiments will be conducted to allow the student to visualize the reaction of water as a force.

6.114 *Hydraulics 2 2 3
A course consisting of the fundamentals of fluid flow, Bernoilli's theorem, flow profiles, stream restrictions (such as weirs, flumes and metering runs) distribution of energy in the stream, flow through pipe, Reynold's law, Newton's laws of hydrodynamics, hydraulic similitude and dimensional analysis. Time is provided for demonstrations and experiments to help clarify the principles and procedures covered in class.
Prerequisite: Hydraulics 6.112 or equivalent.

6.116 Building Code I 3 0 3
Thoroughly study and learn how to use portions of the uniform building code manual that relate to occupancy classification, and the detailed requirements that relate to types of construction and the physical location of buildings and building areas.

6.117 Applied Fluid Power 2 2 3
The fundamental principles of fluid power systems including the basic components of fluid power systems, how they are combined to build up circuits and the uses of these circuits. The basics of design and use of fluid power systems and various components in these circuits are also covered. Laboratory time is provided to illustrate and amplify the classroom learning.

6.118 *Contracts and Specifications 3 0 3
A course designed to acquaint the student with common usage and practice in the preparation of contracts and attendant specifications. Examination of existing contracts covering current jobs will be used whenever possible with practical problems designed to teach the application of theory learned.
Prerequisite: Second-year standing or approval of associate director.

6.119 *Building Code II 3 0 3
Additional building code study concerning areas that present hazards in building construction, such as vertical shafts, treatment of exterior and interior surfaces, detailed exit requirements, fire protection systems, public property and weather protection.
Prerequisite: Building Code I.

6.120 Building Codes & UBC 3 0 3
An introduction to the state building code and building inspection certification requirements. Course content is based on the needs of inspectors, contractors and suppliers.

6.112 *Soild Mechanic Fundamentals 2 3 3
A study of various soil classifications, and their use as a decision-making tool in construction. Investigations of strengths of soils, consolidation of soils in fills and on construction sites, and the study of soil properties, such as particle size, structure and physical properties.
Prerequisite: Third-term standing or consent of the head of department.

6.123 *Concrete Construction and Design 2 3 3
Theory and design of reinforced concrete structural members and the design and control of concrete mixtures. A study of construction inspection and field and laboratory testing procedures.
Prerequisite: Sixth-term standing or approval of associate director.

6.124 *Soil Mechanics 2 3 3
A study of the properties of soils including soil index properties, strength, compaction, permeability and lateral pressures. Laboratory experiments cover each phase of study.
Prerequisite: Second-year standing or approval of associate director.

6.125 *Timber and Steel Construction 3 3 4
A study of steel and wood fasteners and connections, timber beams and columns. Structural members will be analyzed for design features. Field trips will be used to visualize application.
Prerequisite: Strength of Materials 6.120.

6.127 Practical Descriptive Geometry 1 2 2
The use of graphic principles in the solution of simple and complex mathematical problems involving space, angular and geometric relationships. The use of the auxiliary view in point, line and plane problems is stressed.

6.128 Strength of Materials II 2 3 3
A study of the stresses and strains that occur in bodies when subjected to tensile, compressive and shearing forces.
Prerequisite: Strength of Materials 6.105 or equivalent.

6.130 *Structural Analysis and Design 1 3 2
The determination of stresses induced by loads on simple and framed structures. Analysis and design of simple and continuous beams utilizing moment distribution, influence lines and the three moment equation. Analysis and design of frames subjected to lateral forces and a review of truss is also included.
Prerequisite: Applied Mechanics 6.109 and Strength of Materials 6.105 or equivalent.

6.132 Survey Law 3 0 3
A study of the obligations, liabilities and legal responsibilities of the land surveyor, and the basic princples of land survey law as evolved in the courts.

6.134 *Public Land Survey 3 0 3
A study of the laws and procedures for the surveying and subdivision of the public lands of the United States, and for relocation of lost and obliterated boundaries. Fundamental knowledge for land surveyors.
Prerequisite: Plane Surveying 6.101 and 6.103, Project Graphics 4.135.

6.136 *Engineering Technician Orientation 1 2 2
A course developed to teach programming of engineering calculators, FORTRAN programming for large computers and basic programming using remote terminal equipment. Engineering type problems will be used to familiarize the students with this type of work as well as to give them experience with recognized engineering format.
Prerequisite: One year of high school algebra or the consent of the department chairman.

6.138 *Engineering Problems 0 2 1
A study of the presentation of technical data and computations. The procedures for dimensional analysis, recognition and usage of unit systems, preparation and usage of graphs and curves and practical applications of such skills are emphasized.
Prerequisite: Introduction to Engineering Calculators 6.192 or consent of instructor..

6.139 Environmental Quality Control 2 3 3
A course covering the major aspects of air and water pollution, their causes, the harmful effect to the environment and ways and methods of prevention and treatment. Water storage, treatment and distribution are also studied and discussed.

6.140 Sanitary Engineering 2 2 3
A study of domestic and industrial water supply and waste disposal, collection, storage and treatment facilities.

6.150 Observing Chemical Laboratories 0 3 1
An observation course with visits to various laboratories and operations to illustrate the type of opportunities open to chemical technicians. The student will also be able to see the type of work that the chemical technician does in various industries.

6.151 Chemical Problems 0 2 1
A study of the presentation of technical data and computations. The procedures for statistical analysis of data, experiment design graphing of linear functions and algebraic operations in solving chemical problems will be emphasized. Practical applications utilize diagrams, charts, graphs calculator.

6.163 *Basic Technical Photography 3 6 5
Basic fundamentals and technical aspects of photography including types of cameras, f/systems, shutter speeds, film types and specification, developing, basic enlarging, composition, familiarity with basic materials and processing, career opportunities, vocabulary, equipment and display techniques. Intended for students interested in photographic carers. Directed photographic assignments and photo lab work are included.
Prerequisite: Acceptance into program.

6.164 *Intermediate Technical Photography 2 9 6
A mixture of professional and graphic arts photography which incorporates light measuring, gamma, densitometry, sensitometry, interpretation and uses of technical data, technical aspects of photographic design, microfilm, color processing and career opportunities. Technical mastery of the photographic processes is intended so the student may then use photography as a communication design tool. Students will use color analysers and densitometers.
Prerequisite: Basic Technical Photography 6.163.

6.166 *Graphic Design and Character Generation 3 6 5
Graphic arts topics such as paste-up, character generation, art techniques, design principles, layout, proof reading, copy classification, photo composition and typography.
Prerequisite: Acceptance into program.

6.167 *Advanced Graphic Design 3 9 6
Practice and experience in visual communication and graphic technology relating to information design, multiple paste-up, register controls and systems, typographic design, display and tabular composition, proofing procedures, career opportunities, symbology and audience analysis.
Prerequisite: Graphic Design 6.166.

6.168 *Process Photography, Stripping and Platemaking 3 9 6
Technical competency will be developed in production methods and knowledge of process photography, line copy, halftones, development methods, stripping (including multiple exposures), scribing, register systems, exposure computers, platemaking and elementary densitometry. Consideration is given to practical applications of the theoretical basis of process photography.
Prerequisite: Acceptance into the program.

6.169 *Image Conversion and Image Carriers for Offset Lithography 3 9 6

Image conversion, posterization, knockouts, chokes, spreads, duotones, densitometry, multiple color stripping, specialized films, photographic materials, plates and other image carriers, quality controls including graphic design, design element conversion into reproducible elements, assembly of the reproducible elements into an image carrier and transfer of the image carrier to a transport.

Prerequisite: Process Photography 6.168.

6.170 *Press Work and Reproduction Systems 3 12 7

Image transfer systems, press designs, feeders, printing units, dampening units, inking systems, delivery systems, office duplication, pH control and career opportunities.

Prerequisite: Acceptance into program.

6.171 *Advanced Presswork 3 9 6

Practical experience relating to papers and inks, rollers and cylinder adjustments, multiple color runs, registration controls, pH control and outside plant observations.

Prerequisite: Presswork 6.170.

6.172-5 *Special Problems in Graphic Communication 1-4-3/2-6-5/2-8-6/3-8-7

A communication problem is identified and a contract written by student-instructor. The contract sets forth a proposal to solve the problem and identified objectives, procedures and equipment needed, together with key check points for student-instructor conferences. This is intended as a "final" course for students in both graphic arts and photography. Potential areas of consideration also include color separation, plant management and quality control. Consideration and encouragement will be given for an interdisciplinary team of students working on a common problem. (Variable amounts of credit, ranging from three term units to seven term units, are available.)

Prerequisite: Departmental approval.

6.185 Applied Mechanics 2 1 2

A course dealing with the forces acting upon rigid bodies at rest including resolutions of forces, equilibrium and resultants of force systems, friction and centroids. Laboratory time is provided for conducting experiments to clarify the principles and procedures covered in class.

6.192 Introduction to Engineering Calculators 0 2 1

A lab course giving students hands-on experience with a variety of calculators to solve engineering and surveying problems.

6.194 Engineering Orientation 0 2 1

An introduction to electronic engineering. Emphasis is placed on calculations, scientific notation, formula manipulation, and use of the calculator in solving problems associated with electronics.

6.195 Properties of Materials 2 3 3

A study of the properties of various materials and the effects of stresses and strain on these materials, methods of measuring the stress and strain are also covered.

6.196 Fluid Systems 2 3 3

A study of basic principles of fluid flows, circuits and controls. Laboratory experiments demonstrate hydraulic and pneumatic devices and applications.

6.200 Electrical Theory DC 3 3 4

An introduction to electronics on the basis of direct currents with an emphasis on contemporary techniques as a supplement to basic concepts. Covers the principles of electron physics, unidirectional current and factors affecting its magnitude, series circuit analysis, parallel-circuit analysis, complex unidirectional-current circuits and the phenomena of magnetism.

6.202 Electrical Theory AC 3 3 4

A continuation of Electrical Theory 6.200. It covers the principles of electron physics, bi-directional circuit analysis, the phenomena of magnetism and electromagnetism and the characteristics of inductance and capacitance.

6.205 Applied Electronic Calculations 3 6 5

A math course designed for the student entering into the field of electronic servicing. A reasonable background in arithmetic is assumed. The course covers mathematics necessary to handle the problems and theories of electronics with practical application of the mathematics when possible.

6.206 Electrical Circuits 3 3 4

A continuation of electrical theory with an emphasis on the analysis of the characteristics of complex wave form circuits. Covers passive filter networks, bidirectional wave forms, complex waveform analysis of simple circuits, waveform analysis of combined networks, series resonance, parallel resonance and power.

6.207 Radio Circuits 2 6 4

A study of the overall circuits of radios and some of the problems of these circuits.

6.208 Electricity 3 2 4

An introduction to electrical circuitry and equipment with emphasis on the concepts of electrical physics. Includes electricity and magnetism, circuits and components, currents, power, basic electronics and motors and controls.

6.209 Introduction to IC's 3 3 4

An introductory course in TV, digital and linear amplifiers. The principles and operation of the devices are studied. The student learns to handle these devices by building and checking circuits in the laboratory.

6.210 *Transistor Fundamentals 3 3 4

Fundamentals of semiconductor physics presenting the junction diode and its construction, operation and applications as a bridge to understanding transistors. The structure of transistors and their operation in basic common-base, common-emitter and common-collector circuits comprise the second half of the course. Laboratory experiments illustrate diode and transistor theory and operations.

Prerequisite: Electrical Theory DC 6.200 and Technical Mathematics 6.261, or approval of associate director.

6.211 *Transistor Circuits 3 6 5

A continuation of Transistor Fundamentals 6.210. Applying the theory of transistor operation to practical amplifier circuits. Methods of biasing, effects of inverse feedback, temperature stability, frequency response and cascaded stages are studied and tested in the laboratory.

Prerequisite: Transistor Fundamentals 6.210 or approval of associate director.

6.212 Electronic Circuit Concepts 2 6 4

A study using the basic circuits and components of electronics with emphasis on designing and proving of the design concepts. Areas covered are solid state amplifiers, oscillators and power supplies. Circuits are designed in the theory section and proven in the laboratory section.

6.213 Pulse Fundamentals 2 3 3

A study and application of pulse and wave shaping circuits. The student learns how to shape wave forms and convert wave forms. Devices and circuits are studied on the shaping and converting of wave forms. These same circuits may be constructed in the laboratory exercises to solve the circuits studied.

6.214 Electronic Circuit Practices 2 6 4

A study of the basic circuits of electronics with emphasis on the circuit operation and what effect component failure will have on the circuit. In the laboratory portion of the course, the theories discussed will be put into practice. Typical questions used in FCC license testing are gone over to prepare for the FCC examination.

6.215 Digital and Analog Circuits 0 3 4

The use of digital and analog devices in circuits. The discussion and application of these devices in circuits will

demonstrate principles and capabilities of circuits based on as they apply to industrial uses.

6.216 Advanced Electronic Circuits 1 3 2
The use of operational amplifiers in circuits. The circuits are analyzed and constructed by the student, giving hands-on practical application of the devices and how they operate in the circuit.

6.218 Industrial Electronics 3 3 4
An introductory class and laboratory covering the principles and applications of electronic building-block circuits to simple control problems. Industrial component and control symbols and the operating principles of temperature, pressure, light and related transducers are emphasized.

6.220 Electronic Instruments 2 2 3
Application of equipment and some circuits that could be used in instruments are studied. Lab work uses the IC's in instrument type circuits giving the principles of the individual circuits operations.

6.221 Mechanical and Electrical Measuring Principles 2 2 3
A study of the theory and operation of measuring units and devices. Uses of instruments in analysis, circuit evaluation and instrument limiting factors. The laboratory experiments are used to prove the theories studied.

6.222 Television Circuits 2 3 3
A continuation of televison principles. A study of televison circuits including the color circuits, their operation and problems. Circuits are analyzed and their effects on other circuits of the receiver are studied and traced in the laboratory projects. Problems are introduced into television receivers and solved by the students.

6.223 Stereo/Hi-Fi 2 3 3
A study of the principles of stereo receivers and their operation. The testing of receiver circuits, measurements of distortion and gain of the receivers. Multiplexing circuits analyzed and their operation checked. Service problems are installed in units and the problems found by the students.

6.224 Changers and Recorders 2 3 3
Record changers and tape recorders are set up, serviced and lubricated and the cartridges studied and the units checked out. Tape heads are checked and demagnetized and the electronic circuits of the tape units checked and set up. Problems may be installed within the units for the student to locate.

6.225 Advanced Televison Servicing 3 6 5
A continuation of television servicing with the service problems becoming increasingly harder with conditions as close as possible to an actual shop. IF and color alignment will be practiced.

6.226 Introduction to Communications 3 0 3
A course for the introduction of communication systems. The principles, operation and life of the following are studied, types of systems, noise factors, filter systems, amplitude modulation, frequency modulation and single sideband techniques.

6.227 Transmitters and Receivers 3 3 4
Analyzing the transmitter and receiver circuits and how they are joined together as a working unit. Basic circuits are constructed and their operation analyzed. Both AM and FM circuits are included.

6.228 Industrial Television 3 3 4
A theory and lab course designed for circuit analysis of television systems, including each individual section and its circuits. Circuit faults are inserted to help students develop methods of problem solving and a practical approach in using test equipment.

6.229 FCC License Preparation 3 0 3
This course reviews electronic circuits and discusses the FCC rules and regulations. Servicing techniques, procedures and case histories are studied. The laboratory work gives practice and application of the techniques studied.

6.230 Network Analysis 2 0 2
A basic introductory course into the area of IC's with emphasis on the operatonal amplifiers.

6.231 Antennas and Transmission Lines 2 0 2
Practical and theoretical aspects of transmission lines and antennas. Basic theory of antenna design, radiation patterns, phasing and coupling networks are studied. Coaxial and open-wire transmission line studies are emphasized for all frequencies.

6.232 Two-Way Radio Servicing 2 6 4
This course includes going over the circuits of the two-way radio. It permits practice on both citizen band and standard mobile business band units as a class. Such things as alignment and frequency checks are done by the students as well as circuit trouble-shooting.

6.233 Introduction to Audio-Visual Equipment 2 3 3
The correct setup and adjustment of audio-visual equipment is essential to good operation. The student will become familiar with the types of equipment and be able to make minor adjustments to give the equipment optimum operation.

6.234 Wave Generation and Shaping 2 3 3
A class and laboratory introduction to pulse techniques. Begins with an introduction to pulses, giving their historical development, typical applications, nomenclature, importance of pulse shapes and responses of frequency-selective circuits to pulses. Includes theory and operation of limiter and clipper circuits, differentiating and integrating circuts and DC restoration. Various multi-vibrator circuits, synchronization circuits and applications of multivibrators are studied.

6.235 Closed Circuit Systems 3 3 4
A theory and lab course designed to cover closed circuit television and sound systems, picture transmissions, scanning process and composite signal, camera tubes and circuits, camera video amplifier systems, camera sync and deflection generators and seveal types of commercial industrial cameras, video and film projection systems, signal processers, time base correctors, switchers, special effects generators, RF modulators, RF and video monitors, video and audio dubbers, video recording of films and slides, the use of studio, remote and portable equipment, P. A. systems, microphones, sound mixers, frequency filters, with emphasis on circuit analysis, set up procedures operation and adjustment.

6.236 Projector Maintenance 2 6 4
Operation and maintenance of 16 mm projectors. Students will learn to disassemble and reassemble the projectors and check out for proper operation.

6.237 Semiconductors 2 3 3
A survey class and laboratory covering the operating principles of solid-state devices such as the uninjunction transistor silicon-controlled rectifier, thyristors, field effect transistor and photoconductors and their basic circuits and application.

6.238 *Solid State Devices 2 3 3
The physical principles underlying the behavior of semiconductors, transistors and other solid state devices as well as their application to various electronic circuits. The physics pertinent to transistors and semi-conductors are discussed as are characteristics and ways in which they operate. The use of semi-conductor devices in various amplifiers, oscillators and switching circuits is covered with emphasis on developing concepts and knowledge basic to transistor and semi-conductor theory.
Prerequisite: Transistor circuits 6.211 or approval of

associate director-department chairman.

6.239 Audio-Visual Maintenance 2 6 4
The student will work in the AV area servicing various types of AV equipment to gain a broad background of types and models.

6.240 Electronic Data Processing 2 2 3
An introduction to the principles of electronic digital computers. Covers the application and programming of computers in business, industrial and scientific organizations. Reviews numbering systems as they relate to computers., analyzes computer circuitry with emphasis upon solid-state switches, presents the fundamentals of logic design with an introduction to Boolean algebra and analyzes the major divisions of a digital computer with block diagrams.

6.241 Data Communications 2 2 3
Modern analog and digital communicaton systems with emphasis on telemetry and remote instrumentation and control. Communication theory, applications, circuitry and systems are presented.

6.242 Microwaves 2 2 3
A theory and lab course designed as a theoretical plus practical introduction to the field of microwaves. Microwave power sources, transmission and receivers, and propagation and location of sites are studied.

6.243 *Electromechanical Devices I 1 2 2
An introduction to mechanical electromechanical devices. Included is the study of gears, belt and chain drives, clutches, lubrication and bearings. The student will learn the considerations used in the design, installation and operation of basic mechanical devices.
Prerequisite: Technical Mathematics 6.261, Applied Physics 6.371.

6.244 Electromechanical Shop Practice 1 3 2
The use of hand tools and various types of machine tools. Projects are designed to include the interpretation and construction of designs from blueprint.

6.245 Electromechanical Fabrication 1 3 2
The characteristics and methods of fabricating materials. The processes of gas and electric welding will be praticed. A study is made of ferrous and non-ferrous material and their application to industrial products. Small sub-assembly units will be constructed as part of the laboratory work.

6.246 Electromechanical Maintenance Procedures 2 3 3
A study of the proper approach and procedures needed to keep industrial equipment operating. Preventative maintenance and troubleshooting of mechanical and electrical problems are given. The hows and whys of lubrication and cleaning of equipment including the use of chemical and ultrasonic cleaners are discussed and practiced.

6.247 Rotating Machines 3 3 4
A study of the different types of D.C. and A.C. machines and their applications. Both single-phase and three-phase machines are included. Laboratory experiments support the theory portion of the course.

6.248 Advanced Industrial Electronics 2 3 3
A continuation of industrial electronics with emphasis on combining control functions into larger systems. Application of various transducers and simple servo systems. Magnetic amplifiers, small motor controls, light-operated controls and interpretation of control diagrams.

6.253 *Industrial Instrumentation 2 3 3*
A study dealing with pneumatic, hydraulic and electronic instruments and measurements for temperature, pressure flow and related phenomena. Employs many principles and laws of physics. The laboratory classes demonstrate ideas brought forth in theory sessions.

6.254 Industrial Instrumentation 2 3 3
A further study of pneumatic, hydraulic and electrical instruments and measuring devices as they apply to process and control systems. The laboratory classes demonstrate and apply the ideas brought forth in theory sessions.

6.255 Electrical Control Systems 2 3 3
An investigation of various control systems commonly used in industry. These circuits are then used in systems and various methods of systems analysis are used to predict performance of a complete system.

6.256 Servo and Regulation Systems 2 3 3
The principles of open- and closed-loop control systems, servos, regulators and valves. Includes performance evaluation. Types and application of various types of these devices are given and the reasons for the choice of a specified type for a particular system. Laboratory work consists of using and testing of the devices studied in theory sessions.

6.257 Electrical/Electronic *Troubleshooting* 2 3 3
Troubleshooting methods and applications as they pertain to electrical and electronic equipment. The laboratory sessions are practical applications of the studied methods.

6.261 *Technical Mathematics 4 0 4
This course covers the basic algebraic operations. This includes the study of monomials and polynomials, linear equations and systems of equations, quadratic equations, the set-up and solution of story problems, graphs and slope of linear equations and basic right triangle trigonometry.

6.262 *Technical Mathematics 4 0 4
The study of the definitions of trig functions and the relationships between them, the solution of right and oblique triangle problems, powers and radicals, complex numbers and vectors, the definition of the log function and computations utilizing it, algebraic fractions, factoring and solution of fractional equations.

6.266 *Technical Mathematics 4 0 4
An applied course in mathematics on the technical level involving the use of calculus. Covered are plane analytical geometry differentiation with applications, integration with applications and the differentiation and integration of transcendental functions.

6.267 Digital Applications 2 2 3
An introduction for work in logic, digital and computer areas. Topics include binary, octal and hexadecimal number systems with conversion to decimal, non-decimal arithmetic binary number codes, Boolean algebra principles and logic circuits with emphasis on hardware and simplification. The laboratory work in related electronics classes applies the topics studied in class with hands-on experience.

6.268 Digital Control System 3 2 4
Input-output units, numerical control units and other digital readout devices. A study of the theory, operation and maintenance procedures of these units. The laboratory work will give hands-on practical applications, working with and maintaining the equipment studied.

6.269 Computer Programming 2 2 3
An application of programming using basic and assembly languages related to control systems and industrial applications.

6.272 You and Your Environment 3 0 3
An inquiring course for everyone interested in studying the affects of pollution on our environment. The course will attempt to identify and study the sources, causes, and effects of the problems of the pollution of our environment and possible ways to eliminate environmental pollution.

6.275 Introductory Chemistry 3 2 4
The fundamentals of modern chemistry for students who have had little or no previous training in chemistry. Covers

the basic principles of chemistry with emphasis on industrial application.

6.279 Wood Adhesives, Coatings and Plastics 3 2 4
The basic physical and chemical nature of wood, wood finishing, synthetic resins, plastics, adhesion principles and coating techniques. Quality practices in paint, furniture and glue manufacturing plants and laboratories.

6.280 Wood Structure and Identification 1 6 3
A study of basic wood structure and the gross features of wood. Includes the study of the identification of common softwood and hardwood species.

6.281 Building Materials 2 3 3
Wood as an engineering material, lumber merchandising, basic methods in residential building construction, codes and grading rules. Elementary knowledge of building materials other than wood.

6.282 Wood Preservation and Drying 3 2 4
The various methods of preserving wood against insects, decay, fire and weathering. Includes a familiarization with wood preservatives, pressure and non-pressure treatments, preparation of material for treatment and properties of treated wood. Explains the methods of air seasoning and kiln drying, developing kiln schedules, drying defects, type of equipment to use, shrinkage, swelling, dimensional stabilization of wood and drying of specialty products.

6.285 Plywood, Composite and Laminated Wood Products 2 4 3
Manufacturing, properties, uses and testing of plywood, particleboard, insulation board and lumber laminates, plastic overlays and veneers. Commercial requirements, specifications and quality, log allocation and optimum recovery.

6.287 Industrial Quality Control 2 2 3
Simple quality charts and calculations applied to mass produced items. Methods in testing and controlling effluents, industrial waste, sound and air and water quality. Also includes selective topics in quality control of specific interest to individual students.

6.300 *Forest Mensuration I 3 4 4
The first of two courses in measurement and appraisal of individual trees, timber stands and certain forest products. The course includes theory and field work in the strip and fixed-plot cruising methods. It introduces variable-plot cruising techniques.
Prerequisite: Math 4.204, Tree Identification 3.610 and Plane Surveying 6.101

6.301 *Forest Mensuration II 3 4 4
This is the second of two mensuration courses. It reviews subjects covered in 6.300. This course covers variable-plot and 3-P cruising methods in detail. It also introduces regeneration surveys, stand inventory methods, growth and yield, stumpage valuation and metric conversion.
Prerequisite: Forest Mensuration I, 6.300.

6.320 Chemistry for Technicians 3 9 6
An introduction to science and techniques of chemistry. The nature and characterization of matter, states of matter, gas laws, paper and gas chromatography, liquids and solutions, bonding, periodicity of the elements and nomenclature of inorganic chemicals will be emphasized. The study of the chemical equations as a quantitative tool will be initiated. Class and laboratory activities will be coordinated.

6.321 *Chemistry for Technicians 3 9 6
A course dealing with quantitative principles and techniques. Included are sample preparation, pH measurements, gas, gravimetric and titrimetric analysis, oxidation reduction, common metals and non metals and an introduction to organic nomenclature. Coordination of class and laboratory is continued.
Prerequisite: 6.320.

6.322 *Chemistry for Technicians 3 9 6
An introduction to the principles and techniques of organic chemistry. Characterization and separation of organic compounds, infrared spectroscopy and reactivity and preparation of compounds will be emphsized and organic nomenclature will be expanded. Coordination of class and laboratory is continued.
Prerequisite: 6.321.

6.323 *Chemistry for Technicians 3 9 6
An introduction to techniques and principles of physical chemistry with emphasis on equilibium and rates of reactions, spectroscope and atomic absorption spectrophotometry. Selective biochemical compounds and synthetic polymers will also be considered. Coordination of class and laboratory is continued.
Prerequisite: 6.322.

6.324 *Chemistry for Technicians 3 9 6
A course emphasizing special techniques of chromatography, nuclear chemistry and electrochemistry. Coordination of class and laboratory is continued.
Prerequisite: 6.323.

6.325 *Chemistry for Technicians 3 9 6
A course covering thermal methods of analysis, nuclear magnetic resonance spectroscopy and mass spectrometry. The student will be assigned a short individual project based on interests and future plans. Job interviewing and types of positions will be discussed. Coordination of class and laboratory is continued.
Prerequisite: 6.324.

6.326 *Quantitative Analysis for Technicians 1 3 2
An extension of the analytical procedures and techniques covered in Chemistry 6.320-6.325. A variety of procedures and techniques using official methods will offer a more in-depth experience. Modern methods using instrumental analysis will be emphasized. Class and laboratories are coordinated.
Prerequisite: 6.325.

6.335 Land Division and Mapping 2 4 3
This course is designed to introduce the student to basic principles of map layout, methods of platting and photogrammetric procedures.

6.339 Glass Blowing 0 3 1
A laboratory course dealing with the elementary techniques of glass blowing, different types of glass and the various uses. Laboratory time will be spent on learning how to work glass to make useful laboratory equipment.

6.345 Radiation Measurement 2 3 3
Basic theories of nuclear chemistry. The problems of safety in handling, storage and other aspects of radioactive materials are studied in detail. Laboratory time will be used to allow the student to become familiar with instrument and laboratory techniques dealing with radionuclides.

6.366 Applied Physics 3 2 4
A course in applied physics covering magnetism and electrcity on the post-high school level. Basic electric currents, sources and effects of electric current, alternating current, generators, motors, distribution of electric power and introduction to electronics and atomic energy in industry are covered. Laboratory time is provided for demonstration and experiments to help clarify principles and procedures covered in class.

6.370 Applied Physics 3 2 4
The fundamental principles, concepts and applications of work energy and power, basic machines and straight line and rotary motion. Problems are analyzed and solved through the use of vectors.

6.371 Applied Physics 3 2 4
Applied physics on the post-high school level covering mechanics of measurement, structure of matter, heat

energy, heat engines, sound and light. Laboratory time is provided for demonstrations and experiments to clarify principles and procedures covered in lecture.

6.372 Physical Science 3 2 4
A survey of scientific methods, numbers and number systems, make-up of matter, heat energy, light energy and geology basics. Laboratory time is provided as are field trips to investigate the principles and concepts of these areas.

6.373 Physical Science 3 2 4
A study of electricity, chemistry and nuclear energy. Electricity includes sources, transportation and use in such appliances as meters, motors, solenoids, radio and televison heating and lighting. Chemistry includes chemical properties and bonds, crystals, ions, solutions and reactions as they relate to organic and biochemistry. Nuclear energy studies include radioactivity, radioactive decay, fusion and fission, atomic pile and critical mass, waste disposal problems and possible pollution such as leaking or radioactive materials and heat pollution. This is a survey course and the above topics are not treated in depth. The subjects will relate to man and man's environment and there will be laboratory time to enhance the lecture ideas.

6.374 Physical Science 3 2 4
An overview of meteorology, ecology, mechanics and astronomy. Ecology includes sources of pollution, types of pollution, what technology is doing to combat pollution and what people can do. Meteorology looks at the effect of air, ocean, land forms, water forms and geographic locations on weather and principles of forecasting weather. Astronomy covers the solar system, our galaxy, life and death of stars and the universe. Mechanics deals with force, motion, mass, acceleration, velocity, centrifugal and centripetal forces, gavity and simple machines.

6.405 Plumbing Code 3 0 3
An in-depth study of plumbing code requirements related to drain, waste and ventilation systems, water and gas supply systems, sizing systems, fitting and fixture requirements.

6.410 *Plans Examiner Techniques (Fire and Life Safety) 1 4 3
The course is designed to teach a student how to check and examine plans (except structural) and be able to recognize necessary corrections and additions to fulfill code requiements.
Prerequisite: Building Code I and Building Code II.

6.411 *Plans Examiner Techniques II 1 4 3
The student will be working with structural plans, reviewing them for structural considerations as they relate to the structural code requirements, which include plumbing code and mechanical code correlation. Seismic and wind loading problems will be studied.
Prerequisite: Plans Examiner Techniques I.

6.415 Masonry Construction 3 0 3
This course will cover specific code requirements for all types of masonry construction, both structural and non-structural applications of masonry units. The course will include an introduction for fireplace construction.

6.420 Techniques of Inspection I 2 3 3
This course will prepare the students for a 'hands-on' experience of inspection through the use of audiovisual materials, class discussions and field trips.

6.421 *Techniques of Inspection II 0 8 3
On-the-job training, under the supervision of an instructor or inspector. Various day long field trips will be scheduled to allow the student to participate in the inspection of buildings under construction. Many discussion periods will be held during the inspection trips.
Prerequisite: Techniques of Inspection I.

6.425 Electrical Safety 3 0 3
A study of the various wiring methods and basic installation standards. Recognizing the numerous hazards in new construction as well as in existing construction will be emphasized. Safety procedures will be studied for all phases of construction.

6.430 Oregon Law and Department Administration 3 0 3
An introduction to the law of Oregon and how it relates to the building code. Problems in administering the code, under the law, are discussed. Enforcement of the law and legal remedies are studied. Case histories will be studied in detail.

6.500 Survey Computations 1 6 3
A study of trigonometric and geometric formulas, mechanical computers and integrating instruments, area computations, traverse calculations, leveling and plotting surveys, simple curves, intercepts of straight lines, solar observatons, state plane coordinates and spiral curves.

6.507 *Route Surveying I 1 6 3
The location and selection of a route for current modes of transportation. The student will use the transit and machine calculators to lay out a route on the ground and do the necessary computations.
Prerequisite: Survey Computation 6.500 or approval of associate director.

6.510 *Forest Road Surveying 2 6 3
A study of the principles of forest road design and layout, including circular curves, grades, cross sections, profiles and eath computations. Other topics included are solar observations, computation of areas of land and balancing of survey coordinates.
Prerequisite: Plane Surveying 6.103, Math 4.204, Technical Math 6.262 or second year standing and the approval of the associate director.

6.528 Earthwork Computations and Estimates 1 3 2
Problems in computing cuts and fills in highway work, mass diagrams and borrow pits are worked out in detail. Estimating is limited to computations of quantitites and costs on highway, bridge and heavy construction work.

6.600 *Elements of Metallurgy 3 0 3
A continuation of heat treatment with emphasis on non-ferrous and stainless. Special attention will be given to the specifications for welding exotic metals (zirconium, titanium, etc.).
Prerequisite: Heat Treatment of Steel 4.849 or department chairman approval.

6.602 *Metallurgy 2 2 3
Principles relating to metals, structures and physical properties. The uses, heat treatments and testing of various metals are explored. Laboratory time is provided for demonstrations and experiments to aid classroom studies.
Prerequisite: Introductory Chemistry 6.275 or equivalent.

6.606 Manufacturing Process 2 3 3
Manufacturing materials and fundamental types of manufacturing methods as employed in cold working process. Through lecture, demonstration and practical applications the student is given the opportunity to become familiar with the various types of machine tools, tooling, measuring and inspection procedures. Automation is introduced and information is presented to acquaint the student with modern practices of numerical control for machine tools.

6.612 *Electromechanical Devices II 3 3 4
Basic electromechanical devices will be introduced. These devices will be combined with units studied in Electromechanical Devices I and Rotating Machines into basic control systems. The effects of alignment, loading and system response will be studied. Design and faults will be analyzed.
Prerequisite: Rotating Machines 6.247, Electromechananical Devices I 6.243.

6.918 *Applied Business Math 3 0 3
Applications of arithmetic to the world of business and

commerce. Included are problems from fields such as insurance, depreciation, taxes, stock and bonds.
Prerequisite: Mathematics 4.201

6.923 *Accounting Procedures I 4 0 4
The study of business accounting, including basic procedures using the double-entry system, accounting for cash, payroll accounting, accounting for personal service firms, accounting for merchandise, accrual accounting, end-of-period work sheet and financial statements. Designed for students who do not plan to attend a four-year college and/or who are not enrolled in Chemeketa's two-year accounting curriculum.
Prerequisite: Business Math 4.201 or consent of instructor.

6.924 *Accounting Procedures II 4 0 4
The study of accounting for notes and interest, purchases, sales, inventory and prepaid expenses, tangible long-lived assets, owner's equity, and accrual accounting for a wholesale concern. Students work through a practice set for a retail business. Designed for students who do not plan to attend a four-year college and/or who are not enrolled in Chemeketa's accounting curriculum.
Prerequisite: Math 4.201 and 6.923 or consent of instructor.

6.925 *Accounting Procedures III 4 0 4
The study of accounting for partnerships, corporations, capital stock, corporate earnings, corporate bonds, investments, intangible long-lived assets, annual reports, manufacturing business and cost accounting. Designed for students who do not plan to attend a four-year college and/or who are not enrolled in Chemeketa's accounting curriculum.
Prerequisite: 6.924 and Math 6.918 or equivalent, or consent of instructor.

6.929 Computer Problems for Engineering Technicians 2 2 3
Solving various problems that involve engineering computations with the aid of the computer. The student will write programs in computer language, key punch the cards for the computer and debug programs as required.

6.941 Data Processing Mathematics 4 0 4
An introduction to the field of mathematics used in data processing. Covers binary numbering systems, numerical methods, boolean algebra, logic and set theory.

6.944 Intro. to Systems Procedures 3 0 3
Use of procedures as a basic administrative technique. The principles of organizing, planning and administering a procedure program. Methods of carrying out individual systems and procedure studies.

6.945 Applied Systems and Procedures 3 0 3
Fundamentals of automated data systems and procedures. Techniques and principles of systems analysis, forms design and control, systems economics, feasibility studies and the installation of electronic data processing systems.

6.946 Data Processing Management 3 3 4
An introduction to the fundamentals of management and coordination of a data center.

6.947 Computer Center Lab I 3 0 3
Computer center operations is learned while providing computer services. Comprehensive instruction is provided through operation of an IBM 360 Computer. Computer Center Operations 6.951 must be taken concurrently with this course.

6.948 Fundamentals of Computer Programming 3 0 3
This course covers such techniques and tools as decision tables and flow charts, the use of computer components and programming systems, solving problems and providing adequate documentation for solutions. Provides an introduction to programming techniques such as loops, switching routines, branches and indexing.

6.949 System 370 DOS/VS Job Control 4 0 4
An advanced study of DOS/VS Job Control. Emphasis includes linkage editors statements, disk and tape label statements and utilization of the librarian programs for affecting the system libraries.

6.950 Computer Center Operation I 3 8 5
An introduction to the operation of a computer center.

6.951 *Computer Center Operations II 3 0 3
An intermediate course in the operation of a computer center using the IBM/370 Model 125 computing system. Emphasis is placed on introducing operator commands, computer center standards and procedures, recovery procedures, scheduling considerations and the physical organization of disk and tape. Designed to be taken concurrently with either Computer Center Lab II 6.993 or 6.991.
Prerequisite: Computer Center Operations 6.950 and Introduction to Data Processing 6.940 (or BA131) or consent of instructor.

6.952 *Computer Center Operations III 3 0 3
Continuation of Computer Center Operations 6.951.

6.956 System 370 Concepts and Facilities 3 0 3
A study of the hardware and software components of the IBM System/370 Model 125 DOS/VS computing system as well as an introduction to job control.

6.961 COBOL I 3 6 5
An introduction to ANS COBOL. Simple business-oriented programs are coded and documented with emphasis placed on language structure, data formats, card and sequential disk files, table processing, problem statements and documentations. Equivalent to BA231.

6.963 COBOL II 3 6 5
An intermediate course in ANS COBOL. Business-oriented programs are coded and documented. Emphasis includes table processing and indexing, sort feature, subprograms, segmentation and sequential and indexed sequential files.

6.964 *COBOL III 3 6 5
An advanced course in ANS COBOL. Complete business application packages are coded and documented. Emphasis includes efficiency coding, file backup and restore procedures, systems planning, modular programming, VSAM files, systems documentaiton, data management techniques, independent research and problem solving.
Prerequisite: COBOL II 6.963.

6.969 Assembler I 3 6 5
An introduction to assembler language. Simple programs are coded using the standard and decimal instruction set and linked to precoded I-O routines.

6.970 Assembler II 3 6 5
A programming option for students interested in becoming systems programmers. Subprogram modules and macros are written, linked and tested.

6.971 OS Concepts and Facilities 3 0 3
A study of the concepts and facilities of the IBM OS/VS1 operating system. Includes is an introduction to IBM OS job control language. Students run exercises on the IBM System 370, Model 125, located in the college computer center.

6.973 System Generation 3 0 3
A study and generation of the disk operating system.

6.975 *DOS/VS Utility and and Librarian Programs 3 0 3
Students use utility programs to create and modify files as well as dumping files to the printer. Special purpose utilities also are used to copy and restore disk packs and initialize disk packs with label information. Librarian programs are used to manage and update all system libraries. Designed for computer operations students.
Prerequisite: System 370 Concepts and Facilities 6.956 or consent of instructor.

6.976 Data Communications 2 0 2
Concepts of data communication and real time data collec-

tion. Systems are covered and related to programming and operations management.

6.979 *Keypunch I 1 4 3
Keypunch machine operation including the preparation and use of drum cards and extensive practice using keypunch.
Prerequisite: Typing 2.606 or consent of instructor.

6.980 *Keypunch II 1 4 3
A continuation of Keypunch I with emphasis on speed building and accuracy.
Prerequisite: Keypunch I or consent of instructor.

6.982 *Forms Design and Procedures Writing 1 3 2
A concentrated course on two aspects of system analysis, design and control of forms and writing procedures. Assignments include generating and analyzing various types of forms and different styles of procedure writing. Emphasis is placed on total systems considerations for determining the criteria used in selecting appropriate forms and procedure formats.
Prerequisite: Introduction to Systems and Procedures 6.944 or consent of instructor.

6.983 RJE Operation 3 0 3
An introduction to the concepts and applications of the use of remote terminals for file inquiry and update and program processing. The characteristics of a number of diffrent terminals also studied during operation.

6.985 *OS Utilities and Data Management 1 3 2
A study of various file organization methods as well as the criteria for selecting one organization method over another. OS/VSI utility and sort programs are also used to generate and manipulate data files. Exercises involve designing and creating data files, given various manual systems for controlling business records.
Prerequisite: OS Concepts and Facilities 6.971 or consent of instructor.

6.988 RPG forProgrammers 2 2 3
This course consists of a study of the features of the RPG II language. The student will write a number of computer programs, using RPG II that print reports and build and maintain files.

6.991 *Computer Center Lab II 0 9 3
This laboratory course is taken concurrently with Computer Center Operation II 6.951. Hands-on experience is gained in the college computer center using and IBM/370 Model 125 computing system.
Prerequisite: Computer Center Operation I 6.950 or consent of instructor.

6.992 *Computer Center Lab II 0 9 3
This laboratory course is taken concurrently with Computer Center Operation III 6.952. Hands-on experience is gained in the college computer center using an IBM/370 Model 125 computing system.
Prerequisite: Computer Center Operation II 6.951, Computer Center Lab II 6.993 (or 6.991) and System 370 Concepts and Facilities 6.956.

6.993 *Computer Center Lab II 0 18 6
See 6.992.

6.995 *Fire Science 3 2 4
The physical and chemical properties of substances; chemical bonds and reactions; ionization; covalent substances. Laboratory time is provided for clarifying demonstrations and experiments. Must be taken in sequence.
Prerequisite: 5.103.

6.996 Fire Science 3 2 4
Characteristics and behavior of fire, fundamentals of physical laws and chemical reactions occurring in fire and fire suppression, analysis of factors contributing to fire—its cause, rate of burning, heat generation and travel, by-products of combustion and to its confinement, control and extinguishment.

7.113 *Administration of Childhood Care Centers 3 0 3
An exploration of areas of administrative responsibility in child care centers, finances, budget, sources of income, standards and regulatory agencies, local, state, federal, personnel, philosophy, staffing patterns, job descriptions, interviewing, evaluation, in-service training, over-all program planning, parent/community attitudes and relationships.
Prerequisite: Second year standing in early childhood education, or consent of instructor.

7.114 Basic Design 2 2 3
Introductory course in visual arts, including structural elements and design principles—color, texture, form, line, space—and some art appreciation. Laboratory includes practices in the organization of visual ideas. This course is of value in the development of a basic background, regardless of the student's major interest.

7.115 Child Nutrition 3 0 3
Functional knowledge of human nutrition, with emphasis on the needs of the young child. Includes development of sound attitudes and habits toward food and planning adequate meals and snacks for preschool.

7.117 Children's Literature 3 0 3
Introduction to literature for the preschool child, picture books, stories, poetry, both classics and current literature. Includes value of types of books, evaluating and choosing books. Ways to share books with young children.

7.118 Concerns of Parenthood
An introductory class of a seminar nature utilizing a variety of books, materials and resource persons with emphasis on early childhood. Planned for parents and those interested in preschool programs. Topics include communication, philosophies of love, theories of child rearing, stresses and crises affecting the modern family.

7.119 Development in Childhood I 3 0 3
Basic principles of growth and development, prenatal through age two. Emphasis will be on physical, intellectual, emotional and social development in children.

7.120 *Development in Childhood II 3 0 3
A continuation of Development in Childhood I. Basic principles of growth and development, ages three though eleven. Emphasis will be on physical, intellectual, emotional and social development in preschool children.
Prerequisite: 7.119 Developmnt in Childhood I.

7.121 *Directed Participation I 3 12 7
Supervised teaching of children in nursery school, kindergarten, day care center or child development center.
Prerequisite: Second-year standing and Supervised Field Experience II, 7.135.

7.122 *Directed Participation II 3 15 8
A continuation of Directed Participation I.
Prerequisite: Second-year standing and Directed Participation I.

7.123 *Environments for Young Children 3 0 3
Planning and evaluating environments for preschool children. It includes play, room arrangement, outdoor areas, equipment selection and sources, children's furniture, and "scrounging" for materials useable in the preschool environment.
Prerequisite: Second-year standing in early childhood education of comparable work experience as an aide, teacher or volunteer.

7.124 *Learning Experiences for Young Children 3 0 3
Developing, presenting and evaluating various concepts and activities for preschool children, science, creative expression, nature study, language arts (stories, books, finger

plays, dramatic play), numbers, space and time, field trips and visitors and sensory perception.
Prerequisite: 7.123 Environments for Young Children.

7.125 *The Exceptional Child 3 0 3
Understanding the characteristics and "world" of the preschool child who deviates from the average or normal in mental characteristics, sensory abilities, neuromuscular or physical characteristics, social or emotional behavior, communication abilities, multiple handicaps and cultural or economic differences. Includes community resources, curriculum considerations and parent involvement.
Prerequisite: Development in Childhood I, 7.119 and Development in Childhood II, 7.120 or consent of instructor.

7.126 *Home, School, Community 3 0 3
Establishing and maintaining school and community programs for parent education. Learning techniques and skills for developing rapport and communication with parents and families. Using conferences, meetings and community resources as tools for fostering parent-child relations.
Prerequisite: Supervised Field Experience I, 7.134 and second-year standing in early childhood education.

7.127 Family Living 3 0 3
Patterns of family living in modern society, including the varying roles and interaction of family members and factors affecting family life.

7.129 Introduction to Early Childhood Education 2 2 3
A beginning course in early childhood education focusing on its historical development, basic philosophies and types of programs for children and career possibilities in the field. Field trips include observations of prechools, nursery schools, kindergartens, day care centers, Headstart and parent cooperatives.

7.130 Music for Young Children 3 0 3
An introduction to music and related activities appropriate to the pre-school child. Includes rhythm and dance, songs and games, use of instruments, use of music for concept formation, enjoyment and appreciation.

7.131 Observing and Recording in the Preschool 2 2 3
A beginning course focusing on the value and use of observations as a teaching tool. Self-awareness as it relates to the study of children is emphasized. Includes weekly lecture-discussions, and weekly observations at child development centers.

7.132 *Observing and Guiding Behavior 2 2 3
A continuation of the experiences gained in observing and recording in the preschool. Emphasis will be on the role of the teacher, guidance and classroom management techniques and improving and utilizing recording and reporting. Includes weekly observations at child development centers.
Prerequisite: Observing and Recording in the Preschool, 7.131.

7.134 *Supervised Field Experience I 1 6 3
Working with young children in an organized setting and assisting with supervision of the various daily activities in a preschool program.
Prerequisite: Observing and Recording in the Preschool, 7.131 and Observing and Guiding Behavior, 7.132.

7.135 *Supervised Field Experience II 1 9 4
Continuation of Supervised Field Experience I. Includes some planning, executing and evaluating of curriculum materials appropriate for the child.
Prerequisite: Supervised Field Experience I.

7.136 *Creative Activities 2 2 3
Examination of and experience with various media and activities that promote creative growth in young children. Includes understanding the value of various activities, experiencing them in laboratory, how to present them to children and appropriate selection and timing of activities. Encompasses art activities and materials, puppets, finger plays, flannel boards and the use of nature.
Prerequisite: Development in Childhood I, 7.119, Development in Childhood II, 7.120 or consent of instructor.

7.137 Personal Dynamics 3 0 3
Principles and techniques for establishing and maintaining effective human relationships, to include fundamentals of relationships, listening skills, ways to communicate feeling verbal and nonverbal communication, problem solving, handling conflicts and creating a healthy emotional climate.

7.138 Marriage in a Changing Society 3 0 3
Discussions.

7.139 Child Abuse and Neglect 3 0 3
Abnormal child rearing practices, including physical injury, child neglect, fajlure to thrive and emotional abuse. Emphasis on "how to" and "what to do" in dealing with problems relating to child abuse. Treatment alternatives for abusive parents or custodians to be included.

7.140 Kindergarten Education 3 0 3
Focus will be on the kindergarten child and how she/he learns. Developing, planning, and implementing an appropriate kindergarten cirriculum. Includes evaluation of materials and methods of kindergarten, current issues of kindergarten education, and making the transition to elementary school.

7.145 STEP—Systematic Training for Effective Parenting 3 0 3
STEP is a realistic approach to parent-child relationships. Students share experiences of common concern, identify typical responses to family problem situations and learn to practice specific child-training principles and techniques.

9.251 Marketing for Bankers 3 0 3
A course dealing with fundamental concepts and philosophy of marketing, marketing information and research, product distribution, promotion and pricing strategies and marketing planning.

9.253 Money and Banking 3 0 3
A look at money and banking including financial institutions, characteristics of money, structure of the commercial banking system, creating of bank deposits, cash assets of banks, secondary reserves, earning assets, banking in the United States prior to 1913, the federal reserve system, federal reserve credit, sources and uses of member bank reserves, the money market, interest rates and liquidity.

9.254 Principles of Bank Operations 3 0 3
This course presents the fundamentals of bank functions in a descriptive fashion so that the beginning banker may view his chosen profession in a broad (operational) perspective.

9.255 Credit Administration 3 0 3
A discussion of factors influencing and determining loan policy. Methods of credit investigation and analysis, credit techniques, specific credit problems and regular as well as unusual types of loans.

9.258 Home Mortgage Lending 3 0 3
An introduction to mortgage credit in the United States. Covers structure of the mortgage market, development of a mortgage portfolio, determining mortgage plans, loan application and processing, residential construction lending—policies and practices, appraisal of property, credit analysis of the borrower, FHA-insured loans, guaranteed loan for veterans, legal aspects, closing mortgage loans, servicing mortgage loans, management of foreclosed real estate and management considerations in mortgage lending.

9.259 Bank Investments 3 0 3
An introduction to the economic background of investments. Covers federal government securities, federal agency securities, municipal securities, general obligation

bonds, reserve bonds, markets for treasury and municipal securities, general nature of bank liquidity, primary reserve, secondary reserves, security prices and rules, yield curves and their uses, safety considerations, tax and related considerations and investment policies.

9.260 Trust Department Services 3 0 3
This course presents a complete picture of the services rendered by institutions engaged in trust business. An introduction to the services and duties involved in trust operations, the course is intended for all bankers, not only those who are engaged in trust business. It endeavors to keep clear the distinction between business and legal aspects of trust functions.

9.261 Bank Management 3 0 3
The study and application of new trends in the philosophy and practice of management covered in this course provides new and experienced bankers with a working knowledge of bank management. Case studies are also introduced.

9.262 Law and Banking 3 0 3
An introduction to basic American law, presenting the rules of law which underlie banking. Emphasis is on the uniform commercial code.

9.263 Agriculture Finance 3 0 3
A course covering the dynamics of agriculture, capital structure and credit needs of agriculture, the role of bank policy, loan analysis, legal instruments, livestock and poultry financing, crop financing, capital loans, agribusiness, sources of credit, management of the farm loan portfolio, public relations, business development and sources and use of agricultural information.

9.265 Installment Credit 3 0 3
A course dealing with the techniques of installment lending. Emphasis is placed on establishing the credit, obtaining and checking information, servicing the loan and collecting the amounts due. Each phase of bank's installment credit operation is studied. Other topics include inventory financing, special loan programs, buisness development and advertising and the public relations aspect of installment lending.

9.266 Accounting I—AIB 3 0 3
A basic course in accounting principles and procedures. Coverage includes analysis of transactions, the accounting cycle-service sole proprietorship, special journals and ledgers, end-of-cycle procedures—trading business, payroll and control systems, payables and receivables, valuation of other assets, taxes and completion of cycle-partnership, accrual basis. An individualized performance guide is provided for each student.

9.267 Accounting II—AIB 3 0 4
This course builds upon the foundation development in Accounting I. The student learns more advanced concepts and techniques including departmentalized accounting, the partnership accounting cycle, branch and home office accounting, corporation accounting, manufacturing and cost accounting, budgeting, reporting and statement analysis. A final review of basic concepts and an overview of data processing systems complete the course.

9.273 International Banking 3 0 3
This course presents the basic framework and fundamentals of international banking including how money is transferred from one country to another, how trade is financed, what the international agencies are and how they supplement the work of commercial banks and how money is changed from one currency to another.

9.276 Savings and Time Deposit Banks 3 0 3
This course includes the historical development of savings institutions and the basic economic function of the savings process. Designed to facilitate an understanding of the current operations and policies of these institutions.

9.277 Management of Commercial Bank Funds 3 0 3
This course deals with the philosophy of funds management. The importance of funds management as the catalyst that brings together policies in the areas of loans, deposits, investments and capital, and their relation to each other is stressed.

9.289 Fundamentals of Data Processing 3 0 3
This course provides a nontechnical explanation of electronic data processing as applied to banks. It is geared to the fundamental principles, concepts and functions of bank data processing. A practical approach to the automation of banking systems.

9.298 *Small Business Management—Inservice 2 7 0
A program designed to teach basic economic principles and make practical application of these principles in each cooperating family's business operation.
Prerequisite: Admission to small business management program.

9.298A Small Business Management II 2 7 0
The second year of a program to teach basic economic and management principles and make practical application of these principles in each cooperating family's business operation.

9.298B Small Business Management III 2 7 0
The third year of a program to teach basic economic management principles and make practical application of these principles in each cooperating family's business operation.

9.513 Personnel Management 3 0 3
A course on working effectively with employees. How to solve absenteeism or other discipline problems, why and how to motivate employees, enrich their job and reward their efforts. Other topics will include safety, unions, increasing demands of government, employment, collective bargaining, training, work performance measurement and evaluation, job development, organizational planning, promotions and transfers and grievances.

9.528 Management by Objectives and Results 3 0 3
A seminar designed to help participants develop an understanding for the MBO/R process and provide them with sufficient guided practice in its application to ensure effective post-class implementation.

9.540 Individual Life and Health Insurance (CLU) 4 0 4
The role of life and health insurance in meeting economic security needs, types of individual and special life and annuity contracts, individual health insurance contracts and the mathematics of life insurance as related to premiums, reserves, nonforfeiture values, surplus and dividends.

9.541 Life Insurance Law and Company Operations (CLU) 4 0 4
Legal aspects of contract formation, policy provisions, assignments, ownership rights, creditor rights, beneficiary designations, disposition of life insurance proceeds and settlement options. Covers types of insurers, risk selection, company investments, financial statements and regulation and taxation of companies.

9.542 Group Insurance and Social Insurance (CLU) 4 0 4
Analysis of group life and group health insurance, including products, marketing, underwriting, reinsurance, premiums and reserves. Socio-economic problems related to death, old age, unemployment and disability are also discussed.

9.543 Pension Planning (CLU) 4 0 4
Basic features of pension plans including cost factors, funding instruments and tax considerations involved in private pensions, profit-sharing plans and tax-deferred annuities.

Also covered are thrift and savings plans and plans for the self-employed.

9.544 Income Taxation 4 0 4
The federal income tax system with particular reference to the taxation of life insurance and annuities. The income taxation of individuals, sole proprietorships, partnerships, corporations, trusts and estates. Also included is the income taxation of transactions involving annuities and life and health insurance.

9.545 Investments and Family Financial Management 4 0 4
Various aspects of investment principles and their application to family management. Includes yields, limited income securities, growth factors, analysis of financial statements, family budgeting, property insurance, mutual funds, variable annuities and aspects of other investment media.

9.546 Accounting and Finance 4 0 4
Basic accounting principles including data accumulation systems, income measurement, valuation of assets and liabilities and financial analysis. The accounting process from the recording of a business transaction in the books of account to the final preparation of financial statements. Various sources of short-term, intermediate-term and long-term funds available to a business enterprise.

9.548 Business Insurance 4 0 4
Business uses of life and health insurance, including proprietorship, partnership and corporation continuation problems and their solutions through the use of buy-sell agreements properly funded to preserve and distribute business values. Includes other business uses of life and health insurance, such as key man insurance, non-qualified deferred compensation plans and split-dollar plans. Human behavior and ethics in business are also discussed.

9.549 Estate Planning and Taxation 4 0 4
Estate and tax planning, emphasizing the nature, valuation, disposition, administration and taxation of property. The use of revocable and irrevocable trusts, testamentary trusts, life insurance, powers of appointment, wills, lifetime gifts and the marital deduction. The role of life insurance in minimizing the financial problems of the estate owner.

9.746 Office Occupations 0 0 0
A class for persons who want to develop or brush up on clerical skills in order to get into office work. Basic skills necessary for jobs as receptionists, file clerks, stenographers, typists or general office clerks. Independent study and individualized instruction are used. A comprehensive review is available in typing, shorthand skill building/machine transcription, filing, business English, records management and office machines. Students may enroll on any Monday when vacancies are available.

9.820 *Farm Business Management I 8 0 8
A program for farm operators designed to teach basic economic principles and assist in establishing a complete record keeping system which includes enterprise accounting.
Prerequisite: Admission to farm business management program.

9.821 *Farm Business Management II 8 0 8
Making application of economic principles and analysis of previous years' farm records to make sound management decisions. Enterprise records are used to assist in making marketing decisions. Classes cover a variety of management related topics.
Prerequisite: 9.820.

9.822 *Farm Business Management III 8 0 8
Continuation of records analysis including enterprise analysis and cost of production. Cooperating farm families are assisted in farm business reorganization based on previous years' records. Estate planning is included to assist in the reorganization and future transfer of operation.
Prerequisite: 9.821.

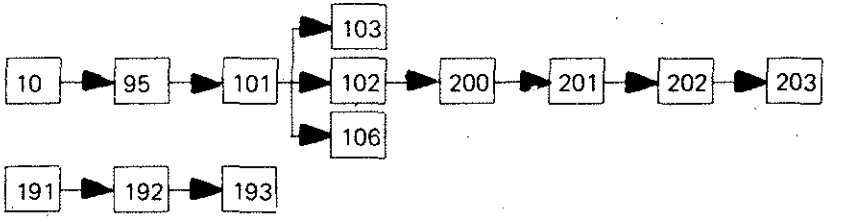
Selection of Courses in Transfer Mathematics

Mathematics Completed	Quality of Work in High School Mathematics: High	Better than Average	Average	Low
One year of general math	Mth 10	Mth 10	Mth 10	Mth 10
One year of college-prep *algebra*	Mth 95	Mth 95	Mth 10 or 95	Mth 10
Two years of college-prep algebra (with or without geometry)	Mth 101	Mth 101	Mth 95 or 101	Mth 95
Four years of college-prep math (not including *trigonometry*)	Mth 102	Mth 102	Mth 101 or 102	Mth 101
Four years of college-prep math (with ½ year of trigonometry)	Mth 200	Mth 200	Mth 101 or 102	Mth 101

Students transferring for a four-year degree in a business, life science, social science, humanities or liberal arts area should be encouraged to take Mth 101, 103 and 106.

Students transferring for a four-year degree in engineering, pre-medical, science or mathematics should be encouraged to take Mth 200-203.

Flow Chart For Lower Division Courses In Mathematics



Instead of these required Math sequences:	You may elect to substitute these or higher math sequences:	
Business Math Sequence		
4.200	Mth 95	
4.201	(Only one LDC	
6.918	course required)	
Vocational Math Sequence		
4.200	Mth 10	
4.202	Mth 95	(as many courses
4.204	Mth 101	as required)
Tech Math Sequence		
6.261	Mth 95	
6.262	Mth101	
6.266	Mth 102 or 106	
Drafting Curriculum		
4.202	Mth 95	
6.261	Mth 101	
6.262	Mth 102	

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*Term expires June 30, 1978
**Term begins July 1, 1978

COLLEGE STAFF

Adams, Ruth	Instructor, Science
Adelman, Richard	Articulation Counselor
Anderson, Frank	Campus Coordinator, Metro Department
Anderson, Robert	Director, Automated Management Information
Anderson, Ronald	Instructor, ABE/GED
Asher, Gregory	Instructor, Social Science
Barnes, Nancy	Diagnostician, Counseling
Barrett, Arthur	Instructor, Electronics/Radio TV
Bates, Mary	Counselor
Bay, Brian	Instructor, Fire Service
Beckerman, Cecile	Instructor, Secretarial/Clerical
Beebe, Janell	Instructor, Secretarial/Clerical
Bennett, Earl	Associate Director, Welding, Machine Mechanical, Automotive, Well Drilling
Benson, June	Instructor, Study Skills
Berg, Betty	Cluster Director, Business & Management
Berger, Gerald	Dean, Student Personnel Services
Berman, Arthur	Associate Director, Insurance, Accounting/Management, Real Estate
Betterton, Roe	Instructor, Real Estate
Bibler, Robert	Instructor, English & Humanities
Binnie, Arthur	President
Blank, Frank	Registrar/Director of Admissions
Blodget, James	Videomedia Specialist
Blodget, Kristine	Instructor, Science
Bodtker, Diana	Instructor, Science
Bodtker, Egon	Cluter Director, Community & Social Services
Bothwell, Bruce	Instructor, Electronics/Radio TV
Boyington, Gary	Instructor, Electronics/Radio TV
Briedwell, John	Director, Outreach Programs
Briggs, Frances	Instructor, Nursing
Brooks, Bobbie	Associate Director, Secretarial/Clerical
Brooks, W. David	Instructor, Accounting/Management
Brown, June	Instructor, Office Skills
Bunch, A. Ray	Instructor, Data Processing
Buttles, George	Instructor, Human Resource Technology
Byers, Maxine	Instructor, Study Skills
Canfield, Edith	Instructor, Farm Management
Caughran, Clarence	Coordinator, Community Development
China, Cheryl	Counselor
Circle, Mel	Instructor, Electronics/Radio TV
Close, Jimmie	Instructor, Accounting/Management
Cochrane, Edward	Instructor, Social Science
Cockrell, Barbara	Instructor, Secretarial/Clerical
Cockrell, James	Instructor, Insurance
Cole, Tom	Cluster Director, Trade & Industry
Connor, Marilyn	nstructor, Communication Skills
Cooter, Stephan	Instructor, Social Science
Coskey, Jack	Instructor, Cadastral Surveying/Forestry
Couse, Lyle	Instructor, Accounting/Management
Cox, Drexel	Director, Personnel Services
Cresser, Rawland	Director, Learning Resource Center
Davey, Don	Instructor, Civil Engineering
Davey, Stan	Director, Facilities Operations & Development
Davies, Henry	Instructor, Forestry

Davis, L. Anne ..... Counselor
Desmet, Karen ..... Instructor, Early Childhood Education
Dethloff, Ralph ..... *Instructor, Automotive*
Dill, Cecil ..... Associate Director, Fire Science
Dixon, Robert ..... Instructor, Welding/Machine Mechanical
Dodge, Thomas ..... Instructor, Welding/Machine Mechanical
Dobay, Deborah ..... Instructor, Early Childhood Education
Doeneka, Molly ..... Instructor, Social Science
Durinski, Fred ..... Manager, Commercial Food Production
Ekeruo, Jeannette ..... Associate Director, Social Sciences, Early Childhood Education
Eldred, Carolyn ..... Counselor
Elling, Kay ..... Instructor, Science
Emerson, Willard ..... Instructor, Fire Science
Eppstein, Robert ..... Instructor, Building Inspector
Erovick, Joyce ..... *Instructor, Nursing*
Faust, Dorothy ..... Instructor, Mathematics
Fenske, Helen ..... Instructor, Human Resource
Ferguson, Ernest ..... Instructor, Cadastral Surveying
Field, David ..... Instructor, Welding/Machine Mechanical
Fishfader, Randy ..... Instructor, Early Childhood Education
Fitzgerald, George ..... Instructor, Science
Ford, Ed ..... Instructor, Physical Education
Ford, Lowell ..... Director, Student Activities & Services
Forest, Jacques ..... Instructor, Accounting/Managemen
Foster, Charles ..... Associate Director, Criminal Justice
Foster, Selma ..... Instructor, Civil Engineering
French, Marjorie ..... Instructor, ESL
Galbraith, Joan ..... *Coordinator, Senior Programs*
Gilbert, Jeremy ..... Instructor, Social Science
Gill, Tom ..... Associate Director, English, Communication Skills and Humanities
Gillette, David ..... Instructor, Mathematics
Gollersrud, David ..... Instructor, Well Drilling
Grant, Linda ..... Instructor, Early Childhood Education
Green, Constance ..... Cooperative Work Experience
Greenbaum, Ken ..... Instructor, Dental Assisting
Gustafson, Jean ..... Head Librarian
Guthrie, Paul ..... Instructor, Forestry
Hale, Robert ..... Instructor, Physical Education
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Harris, Ralph ..... Instructor, Mathematics
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Heater, Charles ..... Instructor, Welding/Machine Mechanical
Held, Leonard ..... Instructor, English & Humanities
Hellerman, James ..... Instructor, Small Business Management
Henry, Max ..... Cluster Director,Science & Mathematics
Hessman, Bob ..... Plant Supervisor
Hickok, Nell ..... Instructor, Nursing
Hodges, Gary ..... Instructor, Automotive
Hofmann, Ron ..... Director, Metro Department
Hoobler, James ..... Instructor, Science
Houck-Lowery, Midge ..... Director, Work Related Experience
Jackson, Lynn ..... Instructor, Machine Mechanical
Jaworsky, John ..... Instructor, Forestry
Jepsen, Leland ..... Instructor, Mathematics
Johnson, Donald ..... Instructor, Drafting & Graphics
Johnson, Linda ..... Catalog Librarian
Jolly, Dale ..... Instructor, Social Science
Jones, Ben ..... Counselor
Jones, Lee ..... Instructor, Mathematics
Judd, Connie ..... Instructor, ABE/GED
Judd, Roger ..... Associate Director, Mathematics
Keesee, Raymond ..... Instructor, Automotive
Kelley, Janette ..... Counselor
Kelly, Randal ..... Instructor, Human Resource Technology
Kimmel, Fred ..... Instructor, Drafting & Graphics
King, James ..... Instructor, Education Aide and Human Resource Technology
Kirk, Barbara ..... Instructor, Science
Kizziah, John ..... Instructor, Welding
Koch, Alan ..... Instructor, Journalism
Koontz, Everett ..... Media Production Specialist
Lane, Donna ..... *Director, Adult Learning Center*
Larkin, Hugh ..... Instructor, Commercial Food Production
Latham, Bob ..... Associate Director, Drafting, Graphics & Electronics
Lauck, Albert ..... Instructor, Chemical Technology
Leach, Al ..... Dean, Community Services
Leavitt, Judy ..... Bookstore Manager
Lee, Roberta ..... Assistant to the Dean of Community Services
Longshore, Glen ..... Associate Director, Audio-Visual Services
Lopez, Alberta Faith ..... Assistant to the Dean of Instructional Services
Loy, Sandra ..... Instructor, English & Humanities
Lytle, Pat ..... Coordinator, South Salem Programs
Machunze, Diane ..... Instructor, Criminal Justice
Marckx, Elaine ..... Instructor, Nursing
Maguren, Janet ..... *Instructor, Nursing*
Martin, Mike ..... Coordinator, Corrections
Mathews, Carl ..... Purchasing Manager
McCue, Ray ..... Dean of Instructional Services
McDonough, Thomas ..... Planetarium Coordinator
McHargue, Ruth ..... Instructor, Nursing
McLain, Roger ..... Instructor, Criminal Justice
McNicholas, Mike ..... Associate Director, Science & Chemical Technology
McNicholas, Suzanne ..... Instructor, Human Resource Technology
Merola, Joe ..... Instructor, Drafting & Graphics
Meyers, Dianne ..... *Instructor, Nursing*
Miller, Maryann ..... Instructor, Community Services
Mills, Keith ..... Instructor, Accounting/Management

Mock, John ..... Instructor, English & Humanities
Moehlman, Jean ..... Reference Librarian
Moore, George ..... Coordinator, Institutional/Instructional Development
Myers, James ..... Instructor, Social Science
Mylan, Irene ..... Coordinator Community Events
Nagle, Pricilla ..... *Instructor, ABE/GED*
Nava, Andy ..... Supervisor, Security, Traffic, & Transportation
Nichols, Van ..... Instructor, Drafting & Graphics
Nordal, Dorothy ..... Instructor, Nursing
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Owens, Chris ..... Instructor, Health
Owings, Colleen ..... Instructor, High School Completion
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Panasuk, Eugene ..... Instructor, Adult Farm Management
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Pinckney, Dale ..... Instructor, Social Science
Pohl, Leslie ..... Instructor, Machine Mechanical
Portlock, Patrick ..... Instructor, Criminal Justice
Reagan, Lucille ..... Instructor, Secretarial/Clerical
Reed, Donald L. ..... Instructor, Study Skills
Rhodes, Sandra ..... Instructor, ABE
Rice, Leonard ..... *Instructor, Drafting & Mechanical Design*
Ringo, Al ..... Dean, Administrative Services
Ringwald, Beverly ..... Instructor, Office Occupations
Rollings, Ron ..... Instructor, Automotive
Roner, Bennie ..... Instructor, Electronics/Radio TV
Toman, William ..... Associate Director, Medical Assisting, Dental Assisting, Human Resource Technology
Traxler, Mary ..... Instructor, Nursing
Triplett, Geary ..... Counselor
Trumbo, Mark ..... Coordinator, Community Services, McMinnville
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Vejlupek, Lillis ..... Instructor, Early Childhood Education
Wade, Devon ..... Instructor, Accounting/Management
Waldroff, Helen ..... Instructor, Nursing
Wall, David ..... *Instructor, Science*
Webster, Margaret ..... Instructor, Commercial Food Production
Welch, Ray ..... Director, Special Projects
Wells, Melinda ..... Cooperative Work Experience Assistant
West, Susan ..... Instructor, Physical Education
White, Howard ..... Assistant for Apprenticeship, WRE
White, Roger ..... Instructor, Electronics/Radio TV
White, Vernon ..... Instructor, Forestry
Wigginton, Barbara ..... Instructor, English & Humanities
Williams, Jimmy ..... Instructor, Communication Skills
Wintermeyer, Larry ..... Instructor, Accounting/Management
Woodnutt, Tom ..... *Assistant for Placement*
Wright, Larry ..... Instructor, Accounting/Management
Zacharias, Patricia ..... Instructor, Medical Assisting/Health Records
Zeitoun, Farhery ..... Instructor, Agri/Business

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