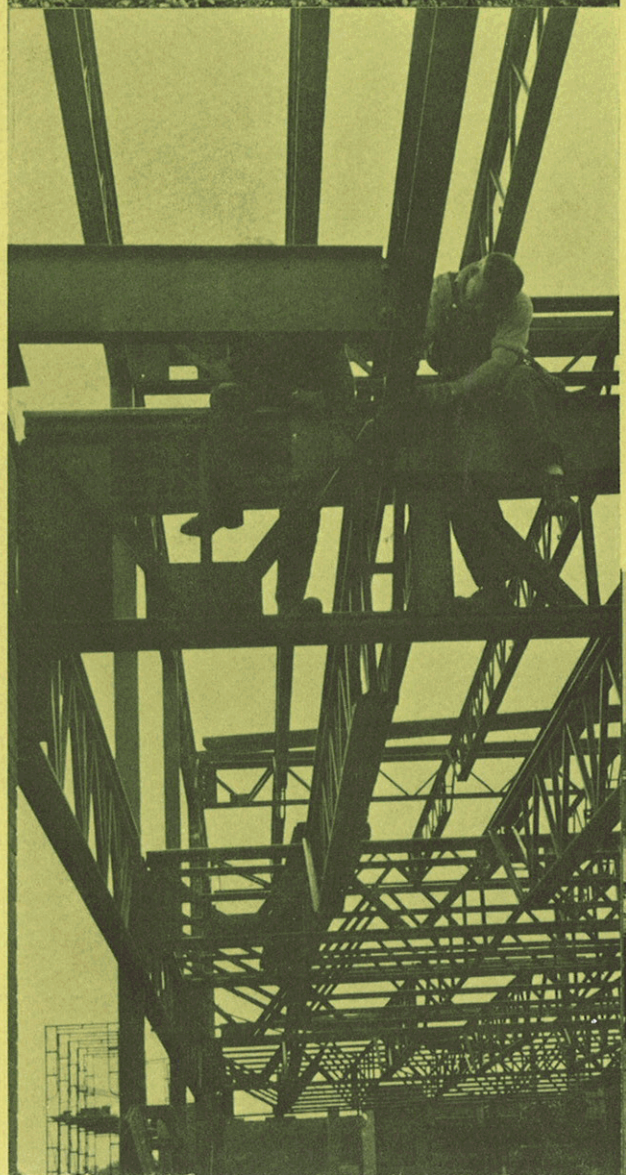
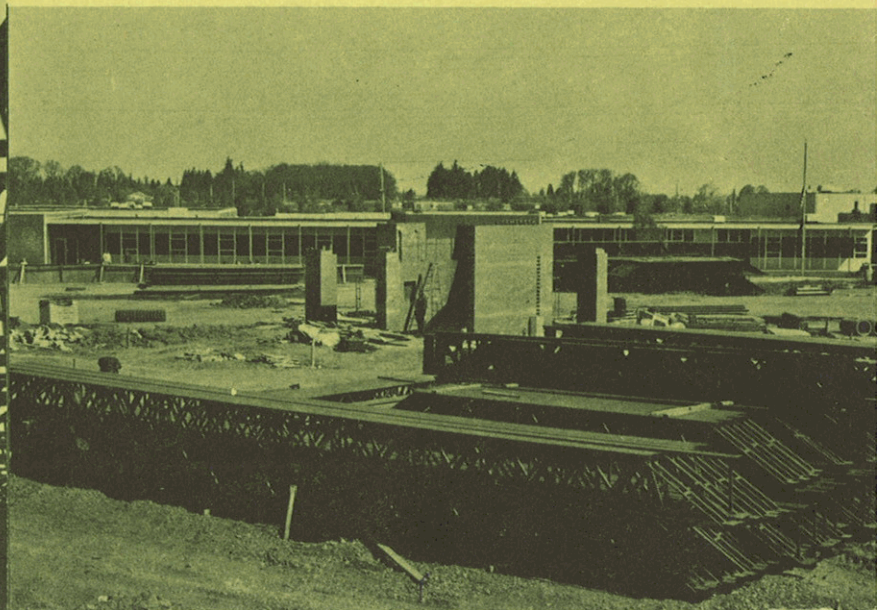
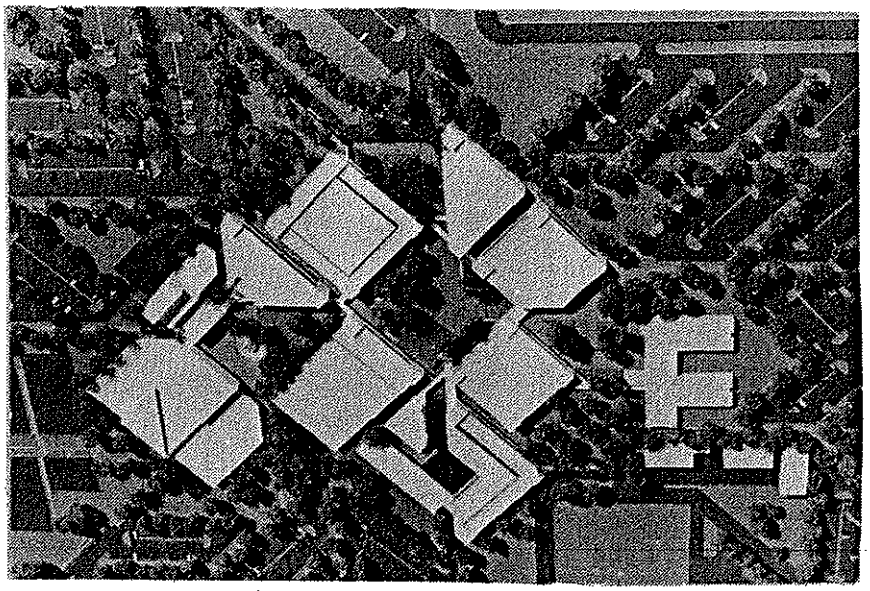


Chemeketa Community College

1972-73 Catalog



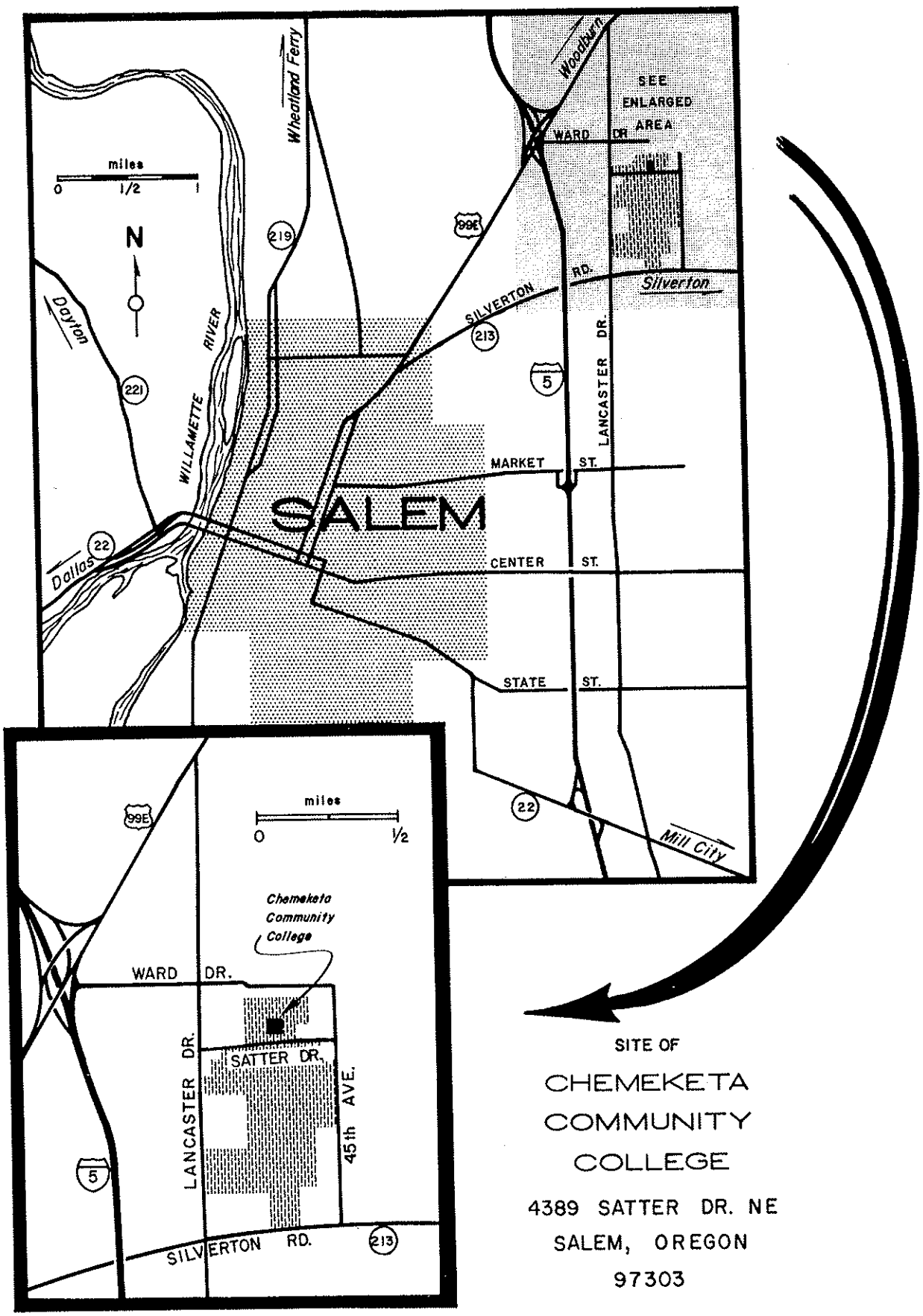


1972-73 Catalog

CHEMEKETA
Community College

Salem, Oregon 97303

585-7900



SITE OF

CHEMEKETA COMMUNITY COLLEGE

4389 SATTER DR. NE

SALEM, OREGON

97303

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Cover Page . . .

The construction sequence of Chemeketa's new Phase I building during the summer of 1972. The 64,000-foot, two-story structure houses the learning resource center (lower floor), classrooms, seminar and conference rooms and staff offices. Financed by a serial levy passed in 1969, it is part of the overall campus master plan shown on the title page.

Title Page . . .

Master campus plan. A view of the ultimate building complex. The proximity of buildings reduces walking time and allows nondisruptive, phased construction. All buildings will be connected by covered walkways.

OREGON BOARD OF EDUCATION

Frank J. Van Dyke, Chairman	Portland	Term Expires 1975
Francis I. Smith, Vice-Chairman	Portland	Term Expires 1974
Richard F. Deich	Portland	Term Expires 1977
Mrs. Eleanor Beard	Lake Oswego	Term Expires 1972
Eugene H. Fisher	Oakland	Term Expires 1976
W. Warren Maxwell	Lakeview	Term Expires 1973
Frank M. Warren	Portland	Term Expires 1978

Dale Parnell, Superintendent
Don Egge, Deputy Superintendent

DALE PARNELL

GOVERNING BOARD

Frank T. Crow, Jr. . . . CHAIRMAN	Stayton
Art Hebert . . . . VICE-CHAIRMAN	Sheridan
Anne Bell	Rickreall
Larry B. Bevens . . .	Salem
J. Earl Cook	Salem
Robert Sawtelle . . .	Woodburn
George G. Strozut . . .	Salem

COLLEGE PRESIDENT PAUL F. WILMETH

Academic Calendar

Fall Term — 1972

Registration	Sept 18–21 (Mon–Thur)
Last day to register without penalty	Sept 25 (Mon)
Classes in regular session	Sept 25 (Mon)
Last day to register for Fall term	Oct 6 (Fri)
Last day to make class or program changes	Oct 6 (Fri)
Veteran's Day Holiday	Oct 23 (Mon)
Midterm Evaluation	Oct 30–Nov 3 (Mon–Fri)
Thanksgiving Holiday	Nov 23–24 (Thur–Fri)
Last day to withdraw from classes without responsibility for grades	Dec 8 (Fri)
Final Examinations	Dec 11–14 (Mon–Thur)
End of Fall Term	Dec 15 (Fri)
Advanced Winter Term Registration for returning students	Dec 19–21 (Tue–Thur)

Winter Term — 1973

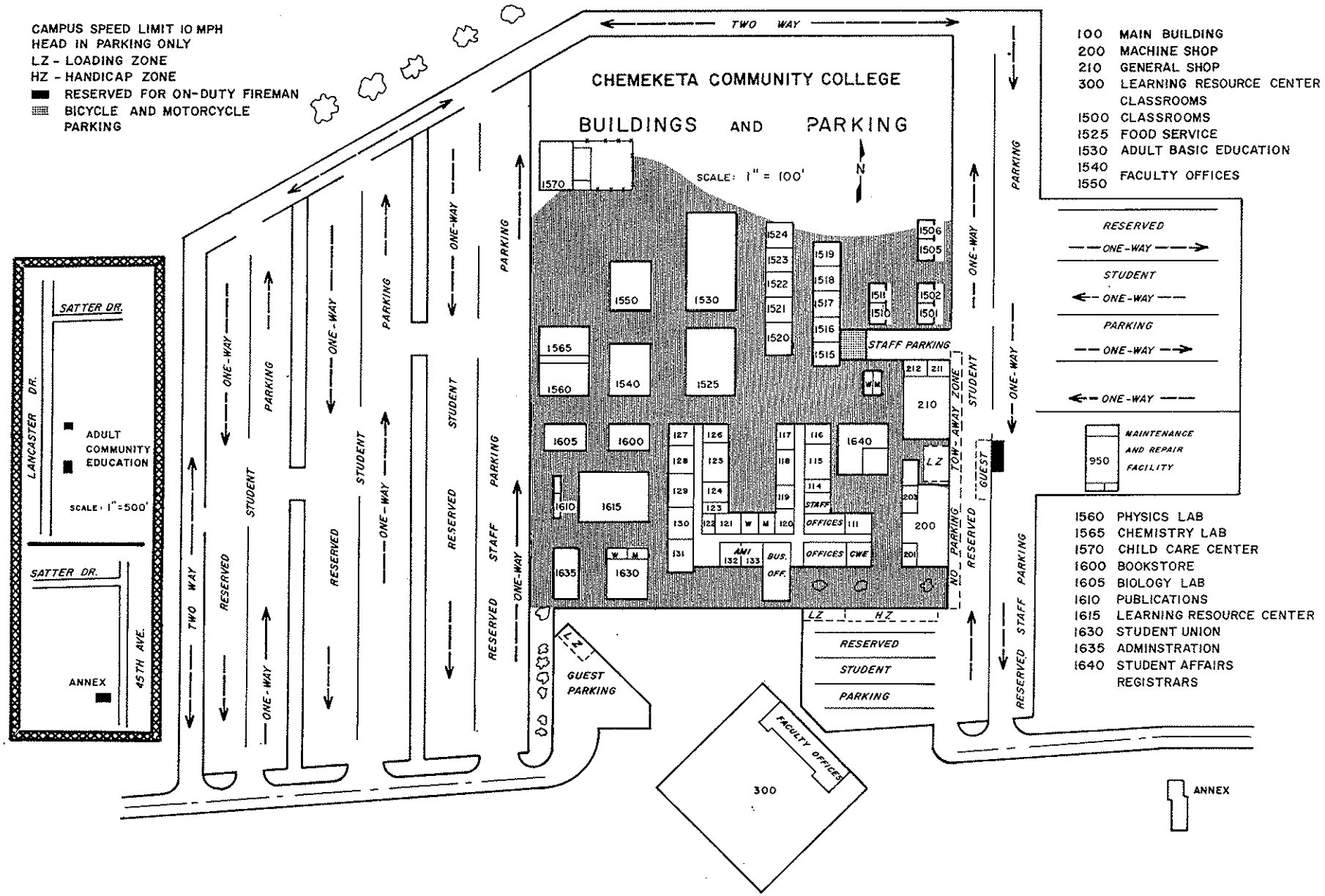
Registration	Jan 3 (Wed)
Last day to register without penalty	Jan 3 (Wed)
Classes in regular session	Jan 4 (Thur)
Last day to register for Winter term	Jan 12 (Fri)
Last day to make class or program changes	Jan 12 (Fri)
Midterm Evaluation	Feb 5–9 (Mon–Fri)
Last day to withdraw from classes without responsibility for grades	Mar 9 (Fri)
Final Examinations	Mar 12–15 (Mon–Thur)
End of Winter Term	Mar 16 (Fri)
Advanced Spring Term Registration for returning students	Mar 20–22 (Tue–Thur)

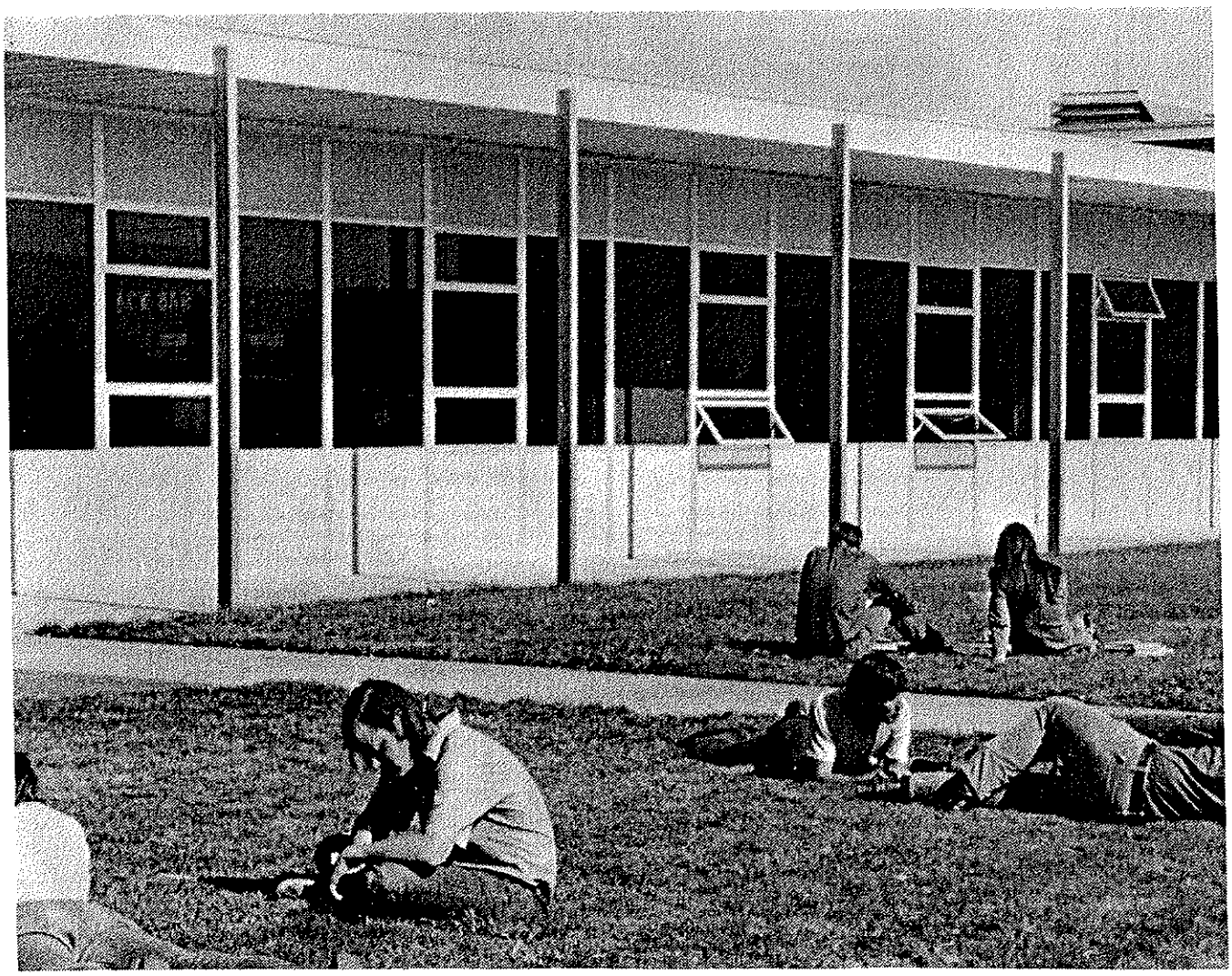
Spring Term — 1973

Registration	Mar 26 (Mon)
Last day to register without penalty	Mar 26 (Mon)
Classes in regular session	Mar 27 (Tue)
Last day to register for Spring term	Apr 6 (Fri)
Last day to make class or program changes	Apr 6 (Fri)
Midterm Evaluation	Apr 30–May 4 (Mon–Fri)
OCCA Convention	May 11 (Fri)
Memorial Day Holiday	May 28 (Mon)
Last day to withdraw from classes without responsibility for grades	June 1 (Fri)
Final Examinations	June 4–6 (Mon–Wed)
Graduation Exercises	June 8 (Fri)
End of Spring Term	June 8 (Fri)

Fall Term — 1973

Registration	Sept 17–20 (Mon–Thur)
Classes in regular session	Sept 24 (Mon)


CAMPUS SPEED LIMIT 10 MPH
HEAD IN PARKING ONLY
LZ - LOADING ZONE
HZ - HANDICAP ZONE
RESERVED FOR ON-DUTY FIREMAN
BICYCLE AND MOTORCYCLE PARKING
CHEMEKETA COMMUNITY COLLEGE
BUILDINGS AND PARKING
SCALE: 1" = 100'
N
TWO WAY
ONE-WAY
PARKING
STUDENT
RESERVED
STAFF PARKING
GUEST PARKING
NO PARKING
TOW-AWAY ZONE
LZ
HZ
FACULTY OFFICES
300
ANNEX
SATTER DR.
LANCASTER DR.
45TH AVE.
ADULT COMMUNITY EDUCATION
SCALE: 1"=500'
100 MAIN BUILDING
200 MACHINE SHOP
210 GENERAL SHOP
300 LEARNING RESOURCE CENTER CLASSROOMS
1500 CLASSROOMS
1525 FOOD SERVICE
1530 ADULT BASIC EDUCATION
1540 1550 FACULTY OFFICES
950 MAINTENANCE AND REPAIR FACILITY
1560 PHYSICS LAB
1565 CHEMISTRY LAB
1570 CHILD CARE CENTER
1600 BOOKSTORE
1605 BIOLOGY LAB
1610 PUBLICATIONS
1615 LEARNING RESOURCE CENTER
1630 STUDENT UNION
1635 ADMINSTRATION
1640 STUDENT AFFAIRS REGISTRARS



General Information

PHILOSOPHY

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

Chemeketa Community College is dedicated to providing educational opportunities at a minimum 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 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 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 provides opportunities for continuing education and individual enrichment for those who wish to improve technical or vocational skills, re-train 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 is emphasized 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 a comprehensive community college.

HISTORY

Among Oregon's community colleges, Chemeketa Community College is a newcomer. And although it is a young institution—established in 1969—it is linked to 15 years of sound operation and development of Salem Technical Vocational Community College.

Chemeketa became the product of this historical background with the decision of its first Board of Directors to use the programs and facilities of Salem Tech as the base of expansion for the new community college.

The formation of the Chemeketa Community College District — the Mid-Willamette Area Education

District—by the voters on September 23, 1969, marked the culmination of more than seven years of effort toward the establishment of the community college district. This effort was evidenced as early as May of 1962, shortly after the 1961 legislature approved a statewide system of community colleges based on area education districts.

The formation movement was spearheaded by several farsighted citizen's groups seeing the need for a comprehensive community college to serve the Mid-Willamette Valley Area.

Through the work of these dedicated citizens, the momentum to achieve positive action was reached: the steps necessary in the formation of a new community college were taken, resulting in the successful formation election. On the same date the first Board of Directors was elected and the membership organized at once to work on the problems confronting the new district. The Board was then free to expand and develop a comprehensive community college serving the full range of needs of the residents of the district which includes all of Marion and Polk Counties, most of Yamhill County, and a portion of Linn County.

The Chemeketa Community College Board of Education is comprised of seven elected representatives from the four-county district.

On October 23, 1969, the Board selected the first president for the college, naming Paul F. Wilmeth, who had served as Director of the Salem college since its establishment as a vocational school in 1955. During the 15 years under his leadership, the college had grown from a few classes held in an abandoned elementary school in West Salem to more than 1,000 full-time students on a new but crowded campus on Satter Drive in Salem. This is the foundation upon which the Board chose to build the new community college.

After a contest conducted among the students of Salem Tech and all of the district high schools, the new name of Chemeketa Community College was made official on December 3, 1969.

During its first year, ending June 30, 1971, the new college board and administration moved rapidly on an expansion program to develop a comprehensive community college. It included completing the college's long range plan, taking steps toward accreditation, studying potential vocational programs, initiating a lower division transfer program, acquiring 122 acres in additional campus (bringing the total to 146), and working toward completion of construction plans for Phase I of the new college campus.

Construction on the first permanent building in the college's expansion program began in March 1972, with completion set for spring, 1973. The 64,000 square foot building structure initially will house the library, classrooms, seminar and conference rooms, and staff offices.

ACCREDITATION

All of Chemeketa's programs are accredited by the State Board of Education. Those programs requiring accreditation by professional associations have achieved the needed accreditation. Chemeketa technical-vocational instructors are certified by the State Board of Education and all transfer instructors and courses are approved by the Oregon State System of Higher Education.

Chemeketa is, at present, a recognized candidate for full accreditation with the Northwest Association of Secondary and Higher Schools.

THE STUDENTS

Chemeketa Community College is the fastest growing community college in Oregon—yet a personal and individual approach to student learning problems is taken.

Students range from just-graduated high school seniors, through young workers seeking new skills or new information in their careers, to older persons studying to enrich their lives.

The college serves a population of 233,489 distributed over 2,600 square miles. It serves more than 10,600 persons each year. The variety of students provides a valuable social interaction not available in other institutions.

THE STAFF

There are nearly 450 full- and part-time highly qualified and carefully selected faculty members serving Chemeketa students.

THE LEARNING RESOURCE CENTER

The Learning Resource Center includes all library and audio-visual materials for student and staff use.

The audio-visual center provides films, filmstrips, slides, audio and visual tapes, graphic services and other educational media resources.

Approximately 20,000 volumes comprise the book collection and 270 periodicals. Many back issues of the periodicals are on microfilm. Microfilm and microfiche readers are available.

THE PROGRAMS

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

TECHNICAL-EDUCATION PROGRAMS

Twenty-three two-year technical courses leading to Associate Degrees, seven one-year programs leading to Certificates of Completion and a short three-month concentrated nursing assistant course comprise the career programs at Chemeketa.

TRANSFER COURSES

The lower division offerings include approximately 100 term hours each term which are transferable to Oregon four-year colleges and universities. The lower division transfer courses lead to the Associate Degree.

ADULT EDUCATION

Adult education classes are offered in all areas of the community 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.

Persons 65 years and older who have Golden Age cards are 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. A five-year serial levy for continuing construction of the permanent campus was approved by voters of the district in 1970.

CAMPUS LOCATION AND BUILDINGS

The 146-acre campus of Chemeketa Community College is in northeast Salem centrally located beneath snow-capped mountains in the heart of the Mid-Willamette Valley. It is nearly at the geographical center of the college district.

The campus includes eight permanent and temporary major buildings:

Main classroom building. This building facing Satter Drive, is situated conveniently in the center of the traffic pattern which students follow in their daily activity. The main classroom building houses the campus closed circuit television studio, electronics laboratories, drafting rooms, lecture demonstration rooms, specially equipped health and dental laboratories, business and office program laboratories, the data processing center, home economics classrooms and study skills center. In addition to classrooms, it houses 31 staff offices, the Office of the Division Dean of Math, Science, Engineering and Related, the Office of the Division Dean of Social Science, Business, Communications and Related, clerical pool and a student lounge with snack vending machines. The main classroom area was constructed in 1963.

Shop Buildings. These structures, the first constructed at the time of the main building and the second in 1965, are joined by a covered walkway to each other and the main building. Located to the east of the main building, they house mechanical programs, welding and well drilling.

Counseling Services, Registrar and Business Offices. Complete student service areas are included in this building. These include admissions procedures, counseling, financial aids, health services, registrar and business office. This temporary structure is located between the main building and shop area. The First Aid Office also is located in this building.

Faculty Office Building. This temporary building, located to the north of the main building, includes staff offices.

Bookstore. This temporary building houses a complete Bookstore and supplies for the college students including selected novelty items. It is located west of the main building between the faculty offices and student union.

Student Union. Located west of the main building and south of the bookstore, the Student Union is the central activity point of students, socially and for club use. The union includes the Associated Student Body Office and the office of the student activities counselor who assists with student organizations and activities.

Administration Building. The President's Office, conference room, and Research and Development Office are located in the building on the south end of the campus to the west of the Student Union.

Miscellaneous Buildings. Other classrooms are housed in temporary units north of the main buildings.

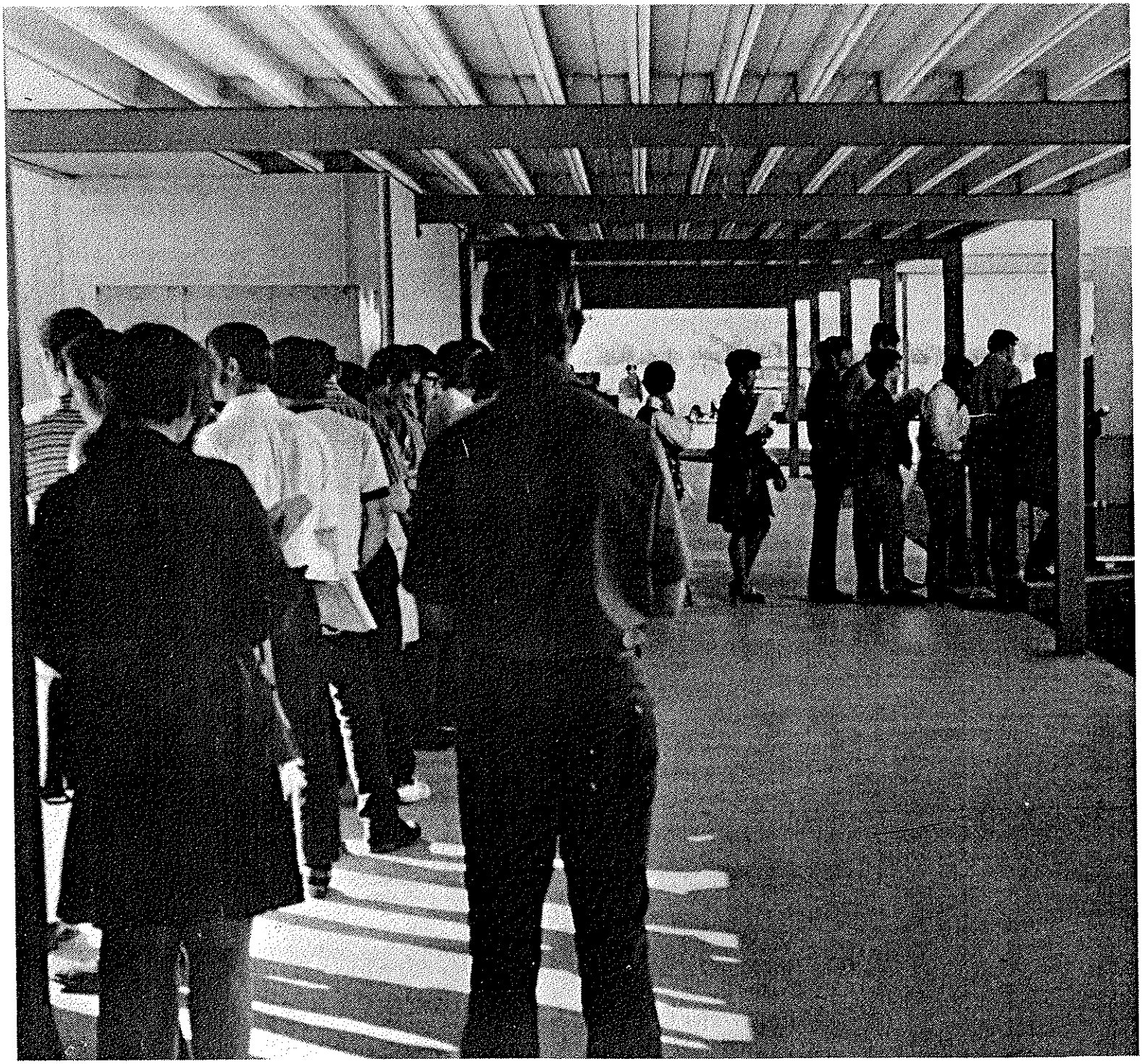
Several off-campus buildings accommodate the Adult Education Offices and additional home economics classrooms. The Adult Education Office is located at 4020 Lancaster Drive N.E.

Biology Laboratory. The biology laboratory is a temporary facility for life science study located west of the Bookstore and north of the Administration Building.

Learning Resource Center. The Learning Resource Center is in Building No. 330 located north of the Student Union and south of the Bookstore. Printed materials and an audio-visual center are located in the Learning Resource Center.

Phase I Building. The 64,000-square-foot Phase I building is under construction. When completed it will house the Learning Resource Center, classrooms and staff offices.

Additions for 1972-73 include temporary modular structures housing the Adult Learning Center for Adult Basic Education and General Education Development, a Day Care Center for the Early Childhood Education program, a chemistry and physics laboratory, a Food Services Technology cafeteria, eight new classrooms, an additional staff office building and a maintenance building.



Admissions Information and Academic Regulations

Admissions Policy

Chemeketa Community College subscribes to the "Open Door" policy admission. In general, its programs are open to any person 16 years of age or older who can benefit from the instruction offered. Students who enter without a high school diploma or its equivalent, and who seek to obtain an Associate Degree, should become involved in a program leading to a diploma or its equivalent.

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

In special cases, high school students may be admitted if they are recommended by their high school administrator.

Full-Time Students

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

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 classes not designed to apply to a degree program need not follow the formal steps for application for admission (see below).

Information and Assistance

Preadmission and preregistration guidance interviews may be arranged Monday through Friday throughout the calendar year. If desired, appointments for interviews may be arranged by calling the Student Affairs Department, 585-7900. Evening counselors are available for interviews Monday through Thursday of each week in the regular college year.

Admissions Procedures

Early application for admission is encouraged. Enrollment in a number of programs may be limited due to availability of staff and space. Persons planning on enrolling must:

1. File an official application for admission.
2. Submit a non-refundable $10 application fee which is applied to tuition.
3. Complete and submit health questionnaire (students registering for physical education classes must submit a student health form signed by a physician).
4. Provide an official transcript of all previous high school, college or GED records.

Students will be informed of the status of their application as applications are received and reviewed. The general admissions policy does not assure admittance of an individual student to a particular course or program. Some students may be advised to enroll in special courses for correction of scholastic deficiencies.

Early applications are particularly critical in some health occupations programs due to limited student stations available in community health agencies, available staff, and standards set by regulatory bodies. Applications for admission are accepted at any time and should be made as early as possible. This early application is essential for the college to carry out the selection procedures involved in the Health Occupations programs. High school students are encouraged to apply after completion of their junior year.

Applicants accepted for health occupations programs will begin at the first available opening in the program. Programs begin each fall. In some programs at some times, applicants may have a wait of more than a year before space is available.

Selection is based on high school records, ACT or

SAT results, GATB results, references, and an interview with a member of the health occupations staff. A limited number of spaces in programs is reserved each year for qualified spring high school graduates. Applicants who are not accepted are encouraged to consult with the college staff to plan a program to meet entry criteria at a later date or select an alternate goal.

Application for health occupations programs requires an advance registration fee of $40.00. This fee is applied to the total quarter tuition fees. It is non-refundable in the event the applicant does not complete registration, but it may be applied to fees for future registration within one year.

Class Registration Policies and Procedures

Registration in particular classes and programs follows admission to the college. An interview with a counselor is required of all new applicants. Ideally, the preregistration interview follows testing and precedes class registration.

Testing provides important information that is helpful to the student in planning for college and occupational success. It also helps Chemeketa to provide suitable programs for the student.

All applicants, except transfer students from other colleges, with 15 quarter hours of "C" or better, are requested to submit the results of the American College Test (ACT) or the Scholastic Aptitude Test (SAT) prior to entrance. The test is not a prerequisite for admission, but is important for guidance purposes..

Students not submitting results of one of the above tests may be required to take an English and mathematics placement battery scheduled by the college. Frequently, applicants are asked to take the General Aptitude Test Battery (GATB) to assist the counselor and student in planning for college and occupational success.

Tuition and Fees

Tuition and special fees must be paid in full at time of registration unless other arrangements have been made. Special arrangements for payment of tuition and fees may be made with the Business Manager. Payment of such fees entitles the student to a student body card, the use of college facilities, and other student privileges.

For tuition purposes, Chemeketa considers 12 credit hours as a full-time load.

Full-time in-district students living within a radius of 14 miles	$ 97	per term
Full-time in-district students living within a radius of 14 to 24 miles	$ 87	per term
Full-time in-district students living beyond 24 miles	$ 77	per term
Part-time in-district students	$ 9	per credit hour
Full-time out-of-district students	$127	per term
Part-time out-of-district students	$ 12	per credit hour
Full-time out-of-state students	$407	per term
Part-time out-of-state students	$ 40	per credit hour

Evening courses will require separate registration and tuition.

Residence

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

(1) A minor whose parent or legal guardian lives within the college district.
(2) Over age 21 and is a resident of the college district.
(3) Is married and lives within the district.

Late Registration Fee

A fee of $1.00 per school day, but not to exceed $5.00, is charged for late registration. 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

The total of other fees generally does not exceed $15.00 per term.

Books and Supplies

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

ACADEMIC REGULATIONS

Academic Probation

Students are expected to maintain a 2.00 grade point average each term to remain in good standing. Those failing to do so will be placed on probation. If, after a student has attempted two or more terms, his cumulative grade point average is less than 2.00, the student's work will be reviewed by the Academic Affairs Committee.

The records of students seeking to transfer into Chemeketa Community College who have attended other colleges will be evaluated. This evaluation will be made as though the complete record all had been achieved at Chemeketa, and the student's academic status will be determined by this record.

Students placed on probation for academic reasons will be removed from probation at the end of any quarter in which their cumulative grade point average reaches 2.00 or better.

Any student who consistently fails to meet the standards in class work will have his record reviewed by the Academic Affairs Committee which may suspend the student from the college. This committee will determine the length of such a suspension and the time and conditions under which the student may apply for readmission. Students who are readmitted will be on probationary status.

Attendance

Regular class attendance and consistent study habits are attributes for success in college and in an

occupation. Instructors may initiate procedures to have a student withdrawn if accumulated absences threaten his completion of the course work. In such cases the instructor will make his recommendation to the Academic Affairs committee for review. Final grades may be adversely affected by nonattendance.

Credit By Examination

Under certain circumstances formal credit may be obtained through examination. Petitions for examination for credit are initiated at the Student Affairs Office during the first two weeks of a term in which the course is offered. The petition must be approved by the dean of the division responsible for the subject area involved. The exam must be passed with a grade of C or better for credit.

The examination fee will be equal to the tuition per credit hour cost for less than full-time students. It is payable at the time the examination is scheduled.

A student is not permitted to earn more than 24 credit hours by examination.

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 Student Affairs Office. It is advisable that the substitution be discussed with a counselor and the student's department chairman before being submitted.

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

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 18 credit hours per term. Any additional credit hours in either area will require special permission.

Grade Points

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

The Grade Point Average is computed by dividing the total quarter hours (excluding W and I) into the total points earned.

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 G.P.A. Before repeating the course, the student must confer with a counselor and his department chairman.

Transfer to Other Institutions

Counselors and instructors are available to advise and assist each student who contemplates transfer to a four-year college or university. Lower division college transfer students should consult the catalog of the college or university to which applications for admission will be made and become familar with the specific lower division requirements in his major field (See the College Transfer section).

Because of the specialized nature of some programs, a number of the career program courses are not designed for transfer to four-year institutions.

Transfer Credits from Other Colleges

If a student has been dismissed from another college or university for academic or disciplinary reasons, he should petition the office of Student Affairs for admission. Students whose petitions are approved are admitted on probation. Transfer credits are not accepted for courses with less than a "C" grade.

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

Program Changes

A change in a student's course schedule may be made during the program adjustment period (see the Academic Calendar). These changes are to be approved by a counselor and department chairman. Choice of courses during this period is limited. Student Schedule Change Forms are available at the Office of Student Affairs.

Withdrawal from Classes

Students who withdraw from a class are to complete the appropriate forms in the office of Student Affairs. Day students should confer with a counselor. Evening students also are encouraged to confer with an instructor or counselor prior to withdrawal.

Students seeking to withdraw from a class must complete the withdrawal procedures. Failure to do so may result in a failing grade. See the Academic Calendar for the withdrawal period.

Fees 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 department of the college at the time of withdrawal are entitled to a tuition refund based upon the following schedule:

During the first week 90%
During the second week 70%
During the third week 50%
During the fourth week 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. The application fee is deducted before applying the refund schedule.

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.

Student Records

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

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 $1.00 each.

Additional details concerning academic regulations will be found in the Student Handbook.

GRADUATION REQUIREMENTS

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 in English Composition.
4. One credit hour in personal hygiene.
5. Five credit hours in physical education.
6. One sequence in the area of arts and letters (humanities, languages).
7. One sequence in science.
8. One sequence in social science.
9. One additional sequence in arts and letters, science or social science.
10. At least one sequence numbered from 200-299.
11. A minimum of one sequence in literature.
12. Wherever two sequences are taken in any one group, the sequences must be from two different disciplines.
13. Completion of at least two terms, including the last one, at Chemeketa.
14. Completion of a minimum of 30 credit hours at Chemeketa.

Certificate of Completion

General requirements for the Certificate of Completion are:

1. Satisfactory completion of all required courses 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 Student Affairs 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.

GENERAL INFORMATION

Student Financial Aids

Information concerning educational loans, scholarships, and part-time work is available at the office of Student Affairs. Financial aids that the student may obtain normally cover the difference between attendance costs and what the student and his family are able to provide.

The office of Student Affairs will forward upon request a Financial Aid Application and a pamphlet which describes the scope and diversity of the financial aid opportunities available at the college. The college presently provides the following financial aid programs: Education Opportunity Grants, National Defense Student Loans, College Work Study Program, Law Enforcement Education Loans and Grants, Guaranteed Student Loans, Associate Degree Nursing Scholarships, Associate Degree Nursing Loans, Part-time Employment, locally sponsored scholarships and loans provided by organizations and individuals in the college district, and Chemeketa Community College Board Grants, and short-term emergency loans.*

Part-time, on-campus employment for students currently enrolled in 12 or more credit hours is available. Employment on campus is limited to 15 hours per week when the college is in session.

Factors considered in determining eligibility for work referral are counselors' recommendation, number of hours that a student is enrolled, grades, financial needs, skills and work experience. Students are encouraged to discuss employment opportunities with a counselor.

Job Placement

Chemeketa Community College's Student Affairs Office conducts an active program to assist students in finding full-time employment upon completion of program requirements. However, no college is able to guarantee job placement.

Current job opportunities are posted daily on the employment bulletin board in the main building.

Placement service is maintained by the college for the benefit of graduates. Instructors in each program are in close touch with employers and job opportunities in the area. Assistance is given students completing programs and former graduates who are seeking jobs. Employer recruitment visitations are scheduled at the college each year for the convenience of graduating students.

Student Activities

Chemeketa Community College recognizes the educational, recreational, and social values of a well-integrated program of student activities. The program at Chemeketa Community College has been developed in response to student interests and needs. Student organizations include the Associated Student Body, Smoke Signals (the student newspaper), Circle K, The Instrument Society of America, American Society of Certified Engineering Technicians, Forestry Club, Phi Beta Lambda, Student Nurses of Oregon, Office Occupations and the American Welding Society. For further information, see the Student Handbook or contact the counselor in the Activities Office in the Student Union.

Athletics

Throughout the year, Chemeketa students may participate in a variety of intramural activities, including bowling, volleyball, softball, basketball, skiing, and golf. The activities are coordinated by the Student Affairs Office.

Participation in intercollegiate sports is limited to students maintaining a 1.75 grade point average, a minimum of 12 units per term, and normal progress toward a definite educational objective. Chemeketa teams include cross country, basketball, baseball, track and golf.

Inter-scholastic sports require special insurance coverage. Participating students may obtain information at the Student Affairs 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 accommodations available in the Salem area.

Health Services

Chemeketa maintains a First Aid Office. Students are expected to have general medical needs 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 Student Affairs Office or the Business Office.

Selective Service

Information regarding selective service regulations may be obtained at the office of Student Affairs. Requests for deferment must be filed each year at the Registrar's Office.

Veterans

All programs listed are approved by the Veterans Administration and the State Department of Veterans' Affairs for payment of educational benefits to eligible veterans and eligible dependents of veterans. Prospective students eligible for veterans' benefits should contact the college for program information prior to making application for benefits at the Veterans Administration Office. Upon receipt of application the Veterans Administration mails the veteran acknowledgment and provides a claim number. After processing the application, the Veterans Administration issues eligible veterans a Certificate of Eligibility

* Students are encouraged to make application for admission and for financial aid by May 1. Most aid is awarded in the spring for the following year.

valid only at the institution named and only for the objective indicated. The prospective student should bring the Certificate of Eligibility to the Registrar prior to or at the time of initial registration.

Veterans experiencing academic difficulties are eligible for tutorial assistance. Tutorial benefits are not charged against veteran's basic entitlement. A counselor can help the veteran establish eligibility and arrange for a tutor.

Student-Instructor Conferences

The instructors of Chemeketa Community College 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.

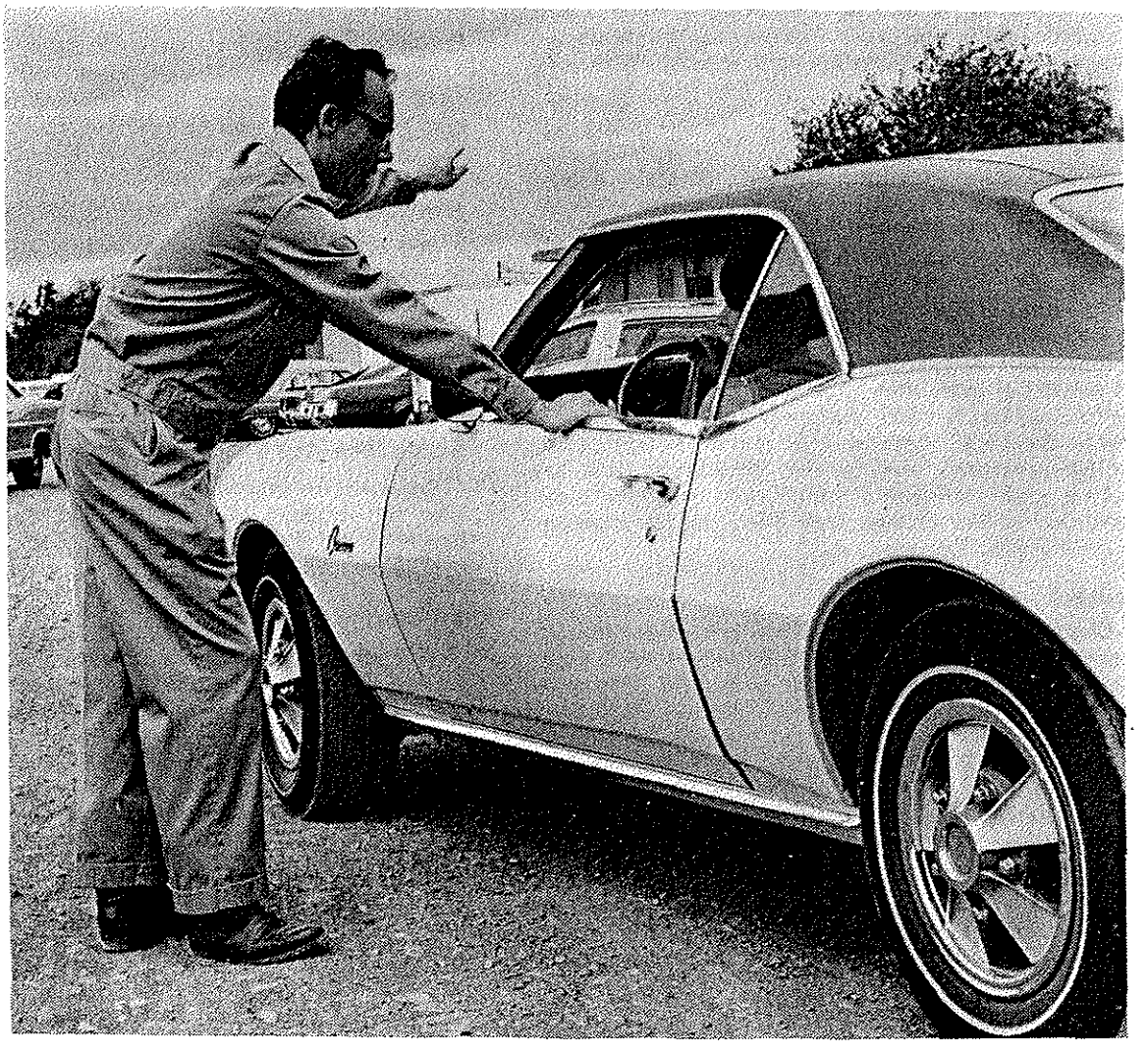
Automobile Use On Campus

All faculty, students and visitors who have motor vehicles in their possession or control for use on the Chemeketa Community College 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 Business Office in Building 300. Parking of a vehicle on campus without a proper parking permit will 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 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 Business Office or within the Student Handbook. Temporary visitor parking permits are available in the Business Office or Administration Building for short-time parking in "Visitor Parking Areas."

Student Conduct

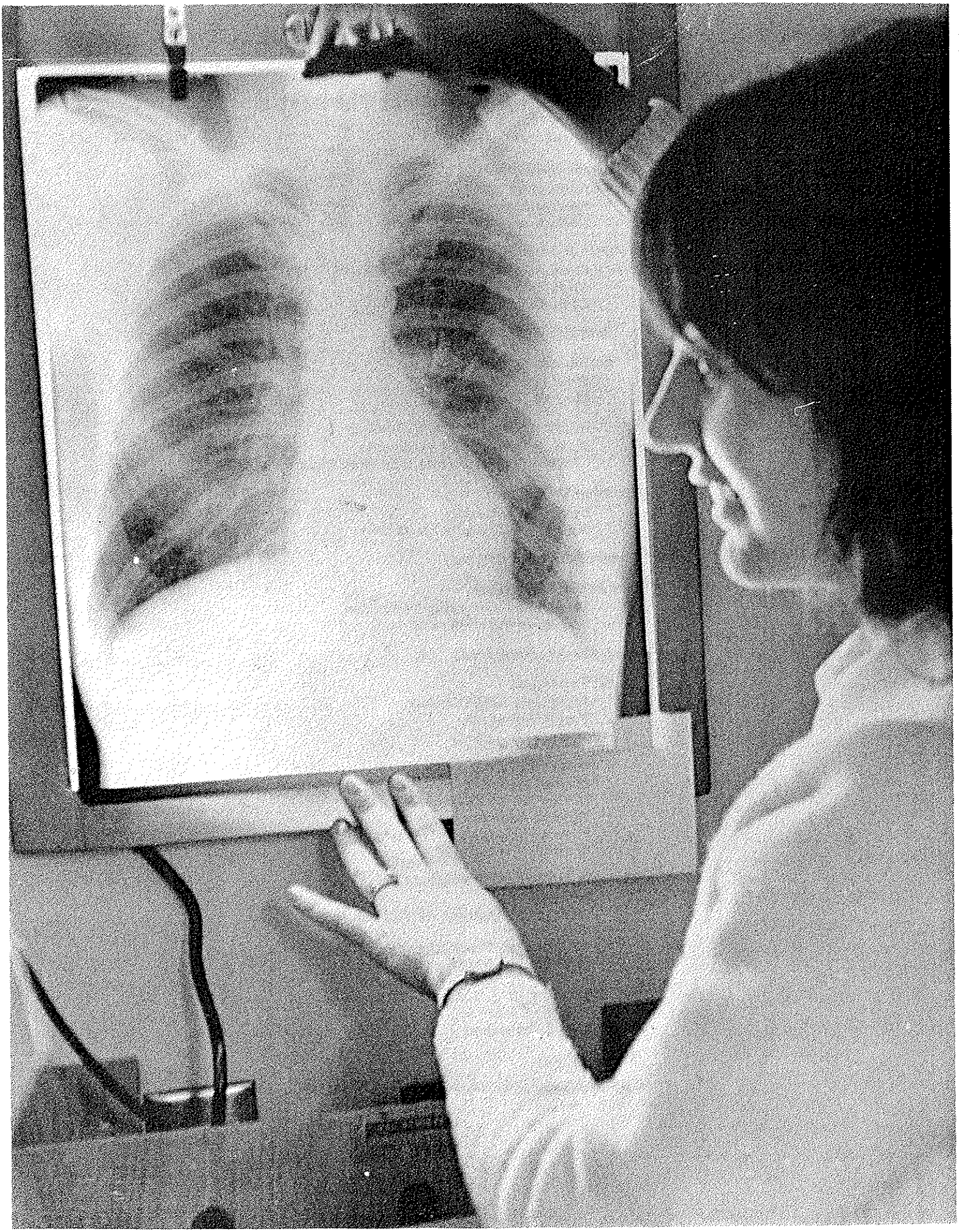
Chemeketa Community College expects that students who enroll in the college accept certain responsibilities as would be expected of any adult. The conduct and behavior of our students either in class or in and around the college facilities is of interest to the college. The school property is to be used with intelligence and care. All clubs and groups should secure rooms through the proper authorities. The use of intoxicants or illegal drugs or having such in one's possession is strictly forbidden by public law and college regulations. Gambling is also prohibited by state and local regulation.

Smoking, eating and drinking are not permitted in any of the present college classroom facilities by staff or students. Since smoking would jeopardize the college's use of these facilities, students and staff are requested to adhere faithfully to this rule. Smoking is permitted in the student and administrative areas.



TECHNICAL VOCATIONAL PROGRAMS

- Business and Commerce
  - Business Technology
    - Accounting
    - Management
    - Marketing
  - Data Processing Technology
    - Computer Programming Technician
    - Clerk-Librarian
    - Computer Operator
  - Real Estate Technology
  - Secretarial Science
    - Professional Secretary
    - Medical Secretary
- Civil-Structural Engineering Technology
  - Cadastral Surveying Technician
  - Civil-Structural Engineering Technician
- Drafting Technology
  - Drafting Technician
  - Mechanical Drafting Technician
- Early Childhood Education
- Electronics Technology
  - Electronic Engineering Technician
  - Television-Radio Service
- Food Services Technology
- Forest Technology
  - Forest Products Technician
  - Forest Technician
- Health Occupations
  - Dental Assistant
  - Medical Assistant
  - Mental Health Technology
  - Nursing Assistant
  - Practical Nursing
  - Technical Nursing
- Machine-Mechanical Technology
  - Machine Shop
  - Mechanical Engineering Technician
  - Welding
  - Welding and Fabrication Technician
  - Well Drilling Technician
- Public Services
  - Fire Protection
  - Law Enforcement
- Pre-Technical



Technical-Vocational Programs

Among the fastest growing occupational groups in the United States are the technicians. The expanding economy and increased emphasis on technical fields have caused an unprecedented and urgent need for college-level technicians to assist in scientific, health science, and engineering fields as well as for trained technologists in business and industry.

Men and women with technological training serve in many capacities. They may serve as direct support personnel to scientists and engineers. Although technicians are frequently directed by a scientist or engineer, they often work independently. Many tasks formerly left to highly-trained professionals now are performed by technicians.

Today, one of the major demands is for an increased work force capable of adjusting to the ever-changing technological concepts, to more efficient methods of putting new ideas into practice, and to meeting the business and industrial demands of society and the individual.

Chemeketa Community College offers one- and two-year programs as well as intensive short courses to meet these demands.

The aim of the Chemeketa technical-vocational programs is to develop gainful skills for employment in a wide range of technical fields, to provide students with the technical knowledge essential for proficiency in semi-professional occupations that offer adults and youth professional growth, challenge, and self-satisfaction. The programs develop the highly-specialized skills needed in each field of employment, abilities in dealing with people, and work habits necessary for successful employment so that the graduate can enter and advance in a chosen field and may participate in the development of the civil structure and social life of his community.

Although subject matter emphasis in all Chemeketa technical-vocational programs is concentrated on specialized technical subjects, a core of general education courses also is required. These include such courses as English language, psychology, speech and economics. In addition to the practical value of these courses, this core provides the student with a background of general education which will permit him greater latitude in selection of subsequent educational goals and give him a common ground of cultural experience with colleagues and fellow employees in any field.

Business and Commerce

BUSINESS TECHNOLOGY

The two-year curriculums in Business Technology offer opportunities to specialize in the fields of Accounting, Business Management, or Marketing. These programs contain a core of essential business and general education courses for professional careers in business, industry or government.

The Business Technology programs prepare students for entry-level positions as junior executives, junior accountants, small business managers, supervisory trainees, and other business-oriented employees. The selection of courses helps a student to become familiar with varied aspects of the business world.

The combination of courses in each program is designed to give students the opportunity to begin and advance their careers, prepare for future educational opportunities, and have more responsible positions in the community.

The student should follow the sequence of courses under each program. If a student desires a change in sequence, he should consult with the department chairman, a lead instructor or a counselor.

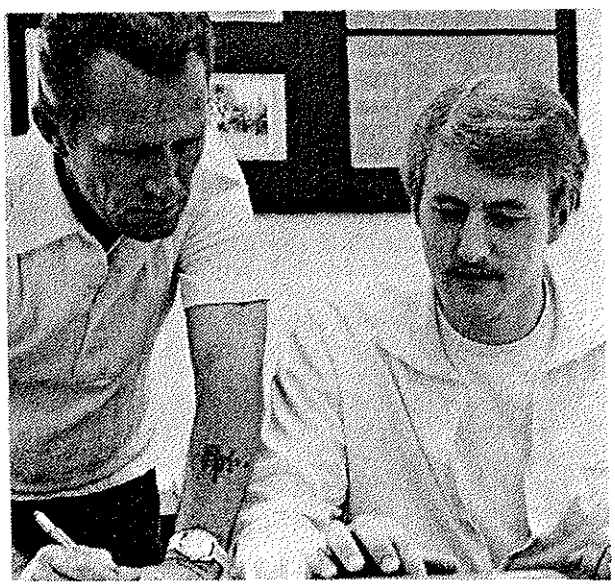
Proficiency in English must be demonstrated at a minimum level of Public Speaking 1.610 and Report Writing 1.106 or equivalent in the Business Technology curriculums.

All students entering the Business curricula are strongly urged to take a Math and English Placement test to assure the student that he is placed in the program to his best advantage.

Upon satisfactory completion of the requirements of one of the Business Technology options, the student is awarded an Associate in Science Degree.

A letter of completion is granted upon request at the completion of the requirements for the first year.

Associate in Science Degree: Required number of term units are shown following each option.



Business Technology—Accounting Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		English Variable (based on Placement Test) or General Education Elective		3
3		*Math Variable (based on Placement Test)		3
3	3	Accounting	6.923 or BA 211	4
3		Introduction to Business	2.502 or BA 101	3
	2	Introduction to Calculators	2.658	1
2	3	Introduction to Data Processing	6.940 or BA 131	3
2		Introduction to Real Estate	2.401	2
Term 2				
3		English Variable or General Education Elective		3
1	4	†Typing or Elective	2.606 or SS 121	3
3		*Math Variable		3
3	3	Accounting	6.924 or BA 212	4
3		Introduction to Psychology	1.606 or Psy 201	3
Term 3				
1	3	Business Machines	2.660	2
3		English Variable or Gen. Educ. Elective		3
3	3	Accounting	6.925 or BA 213	4
2	2	Office Procedures	2.641	3
3		Sociology	1.310	3
3		Elective		3

* Business Mathematics 2.653 and Mathematics 95 required for graduation.

† Required only of those students having had no previous typing or students typing fewer than 30 words per minute.

A Letter of Completion will be granted upon request at the completion of the above requirements.

SECOND YEAR

Term 4				
3	3	Intermediate Accounting	2.551	4
3		Cost Accounting	2.576	3
2	3	RPG I	2.679	3
3		Business Law	2.320 or BA 226	3
3		General Education Elective		3
Term 5				
3	3	Intermediate Accounting	2.552	4
3	3	Income Tax Accounting	2.554	4
3		Business Economics	1.524 or Ec 201	3
3		Business Management Principles	2.202	3
3		*Cooperative Work Experience or Business Elective (3 credits)		3
Term 6				
3	3	Intermediate Accounting	2.553	4
3	3	Auditing	2.555	4
3		*Cooperative Work Experience or Business Elective		3
3		Financial Principles	2.556	3
3		Business Electives		3

* Cooperative work experience—3 term units minimum recommended for the year.

103 minimum term units required for an Associate Degree in Business Technology.

Business Technology—Management Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		English Variable (Based on Placement Test) or General Education Elective		3
3		*Math Variable (Based on Placement Test)		3
3	3	Accounting	6.923 or BA 211	4
3		Introduction to Business	2.502 or BA 101	3
2	3	Introduction to Data Processing	6.940 or BA 131	3
	2	Introduction to Calculators	2.658	1
2		Introduction to Real Estate	2.401	2
Term 2				
3		English Variable or Gen. Educ. Elective		3
1	4	†Typing or Elective	2.606 or SS 121	3
3		*Math Variable		3
3	3	Accounting	6.924 or BA 212	4
3		Introduction to Psychology	1.606 or Psy 201	3
Term 3				
1	3	Business Machines	2.661	2
3		English Variable or Gen. Educ. Elective		3
3	3	Accounting	6.925 or BA 213	4
2	2	Office Procedures or Elective	2.641	3
3		Sociology	1.310	3
3		Psychology of Human Relations	1.608	3

* Business Mathematics 2.653 and Mathematics 95 required for graduation.

† Required only of those students having had no previous typing or students typing fewer than 30 words per minute.

A Letter of Completion is granted upon request at the completion of the above requirements.

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
3		Business Management Principles	2.202	3
2	3	RPG I	2.679	3
3		Business Economics	1.524 or Ec 201	3
3		General Education Elective		3
3		Cost Accounting	2.576	3
Term 5				
3		Financial Management	2.556	3
3		Office Management	2.643	3
2	3	RPG II	2.681	3
3		Business Law	2.320 or BA 226	3
3		*Cooperative Work Experience or Elective (3 credits)		3
Term 6				
3		Small Business Operation	2.557	3
3	2	Personnel Principles & Supervision	2.685	4
3	0	Credit Procedures	2.558	3
6	0	Business Electives (6 credits)		6
3	0	*Cooperative Work Experience or Elective (3 credits)		3

* Cooperative work experience—6 term units minimum recommended for the year.

100 minimum term units required for an Associate Degree in Business Technology.

Business Technology—Marketing Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		English Variable (Based on Placement Test) or Gen. Ed. Elect.		3
3		Math Variable (Based on Placement Test)		3
3	3	Accounting	6.923 or BA 211	4
3		Introduction to Business	2.502 or BA 101	3
	2	Introduction to Calculators	2.658	1
2	3	Introduction to Data Processing	6.940 or BA 131	3
2		Introduction to Real Estate	2.401	2
Term 2				
3		English Variable or Gen. Ed. Elect.		3
1	4	*Typing or Elective	2.606 or SS 121	3
3		†Math Variable		3
3	3	Accounting	6.924 or BA 212	4
3		Introduction to Psychology	1.606 or Psy 201	3
Term 3				
1	3	Business Machines	2.661	2
3		English Variable or Gen. Ed. Elect.		3
3	3	Accounting	6.925 or BA 213	4
2	2	Office Procedures or Elective	2.641	3
3		Sociology	1.310	3
3		Psychology of Human Relations	1.608	3

* Typing 2.606 (Beginning Typing) needs to be taken by those students having had no previous skill, or students who type fewer than 30 words per minute. This course may be taken in either of the first three terms.

† Business Mathematics 2.653 and Mathematics 95 required for graduation.

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
3		Principles of Marketing	2.104	3
3		Principles of Advertising	2.100	3
3	2	Retailing	2.108	4
3		Elective		3
3		Business Electives		3
3		General Education Elective		3
Term 5				
3		Salesmanship	2.109	3
2	3	Merchandising or	2.105	3
2	3	*Advertising Layout	2.101	3
3		Marketing Research	2.106	3
3		Cooperative Work Experience or Elective (3 credits)		3
3		Elective		3
Term 6				
2	3	Buying or	2.102	3
2	3	*Copywriting in Advertising	2.103	3
3		Case Problems in Marketing	2.107	3
3		Elective		3
3		Cooperative Work Experience or Elective (3 credits)		3
3		Business Elective		3

* Offered only when student demand warrants offering course.

105 minimum term units required for an Associate Degree in Business Technology.

DATA PROCESSING TECHNOLOGY

The objective of the Data Processing program is to provide training for individuals preparing for entry-level positions in the field of business data processing and for persons already engaged in the field who desire additional training.

The technology is comprised of three options:

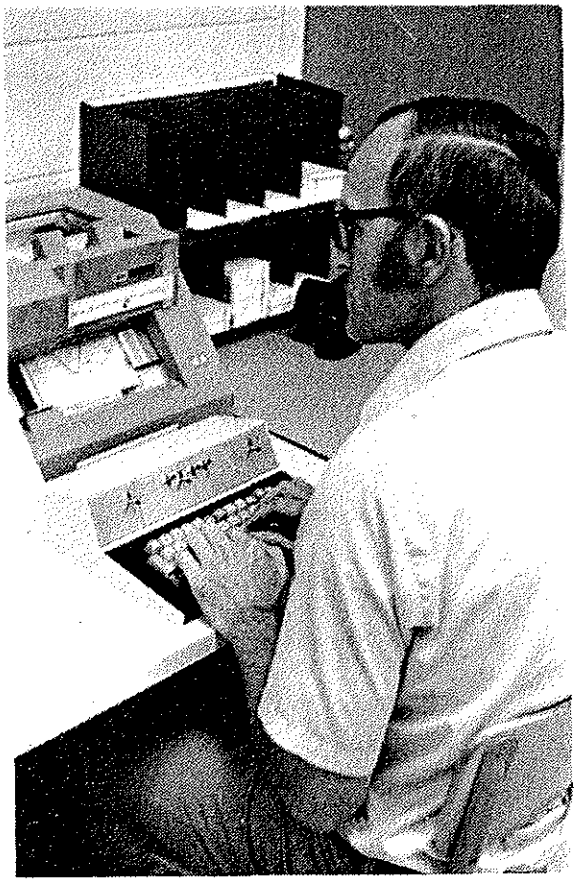
Computer Operations Technology
Data Processing Clerk Technology
Computer Programming Technology

The Computer Programming Technology curriculum provides concentrated study and experience in business data processing, computer programming, and management procedures. The second year provides options for programming or business courses.

Upon satisfactory completion of the requirements in the Computer Programming Technology program, the student is awarded an Associate in Science Degree, signifying that the student is prepared to effectively function and advance in the many job areas of the data processing field.

Proficiency in Data Processing Math 6.941, Public Speaking 1.610, and Report Writing 1.106 or equivalent are requirements for graduation in the Computer Programming Technology program.

Associate in Science Degree, Computer Programming Technology 105 term units required.



Computer Programming Technology Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		English Variable (Based on Placement Test) or Gen. Education Elective		3
3		Math Variable (Based on Placement Test)		3
3	3	Accounting	6.923 or BA 211	4
3		Introduction to Business	2.502 or BA 101	3
	2	Introduction to Calculators	2.658	1
2	3	Introduction to Data Processing	6.940 or BA 131	3
2		Introduction to Real Estate	2.401	2
Term 2				
3		Variable English or General Education Elective		3
3		Variable Math.		3
3	3	Accounting	6.924 or BA 212	4
3	6	COBOL I	6.961	5
3		System 360 Concepts and Job Control	6.956	3
2		Fundamentals of Computer Programming	6.948	2
Term 3				
3		Variable English or General Education Elective		3
3		Introduction to Psychology	1.606	3
3		Systems 360 DOS Job Control	6.949	3
3	6	COBOL II	6.963	5
3	3	Accounting	6.925 or BA 213	4

SECOND YEAR

Term 4				
2	2	Utilities and Data Management	6.965	3
3	6	Assembler I	6.969	5
3		Cost Accounting	2.576	3
3		Introduction to Systems and Procedures	6.944	3
		SELECT ONE:		
1	8	Computer Operations	6.987	3
		or		
3		Business Education Elective		3
Term 5				
3		General Education Elective		3
3		Business Economics	1.524	3
1	8/12	Cooperative Work Experience		
		or		
3		Business Elective		3
3	6	COBOL III	6.964	5
		SELECT ONE:		
1	5	Systems Generation	6.973	3
		or		
3		Business Elective		3
Term 6				
3		Applied Systems and Procedures	6.945	3
2	2	RPG for Programmers	6.988	3
2		Data Communications	6.976	2
		SELECT TWO:		
1	8/12	Cooperative Work Experience		3
3	6	*One Programming Language		5
3		Business Electives		3
3		Data Processing Management	6.946	3

* Only one will be offered, depending on demand.

FORTRAN I 6.962
Assembler II 6.970
PL/1 6.959

COMPUTER OPERATIONS AND DATA PROCESSING CLERK-LIBRARIAN

The one-year Computer Operations program provides for concentrated study and experience in data center operation. The Computer Center has a medium-sized computer operated in a job shop environment serving business and scientific users.

The one-year Data Processing Clerk-Librarian program provides for concentrated study and experience in all areas of data and information handling, storing, and retrieving.

A Certificate of Completion is awarded to those individuals who satisfactorily complete the required courses within Computer Operations or Clerk-Librarian programs. Both programs require 51 credit hours for completion.

Proficiency in Public Speaking 1.610, Report Writing 1.106, and Business Math 2.653 or equivalents are required for completion of the Computer Operations and Data Processing Clerk-Librarian programs.

Data Processing Clerk-Librarian Curriculum

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		English Variable (Based on Placement Test) or Gen. Education Elec.		3
3		Math Variable (Based on Placement Test)		3
3	3	Accounting	6.923 or BA 211	4
3		Introduction to Business	2.502 or BA 101	3
	2	Introduction to Calculators	2.658	1
2	3	Introduction to Data Processing	6.940 or BA 131	3
2		Introduction to Real Estate		2
Term 2				
1	3	Inventory and Stock Room Control	6.985	2
2	3	Records Management	2.642	3
3		English Variable or Gen. Ed. Elect.		3
3		Math Variable or Elective		3
	2	Key Punch I	6.979	1
1	1	Graphing	6.981	1
1		Librarian Operations I	6.982	1
3		Introduction to Psychology	1.606 or Psy 201	3
Term 3				
3		English Variable or Gen. Ed. Elect.		3
3		Math Variable or Elective		3
3		General Education Elective		3
	2	Key Punch II	6.980	1
1		Librarian Operations II	6.983	1
2	3	RPG I	2.679	3
		SELECT ONE:		
	6	Librarian Lab.	6.984	2
		or		
1	8	Cooperative Work Experience		3

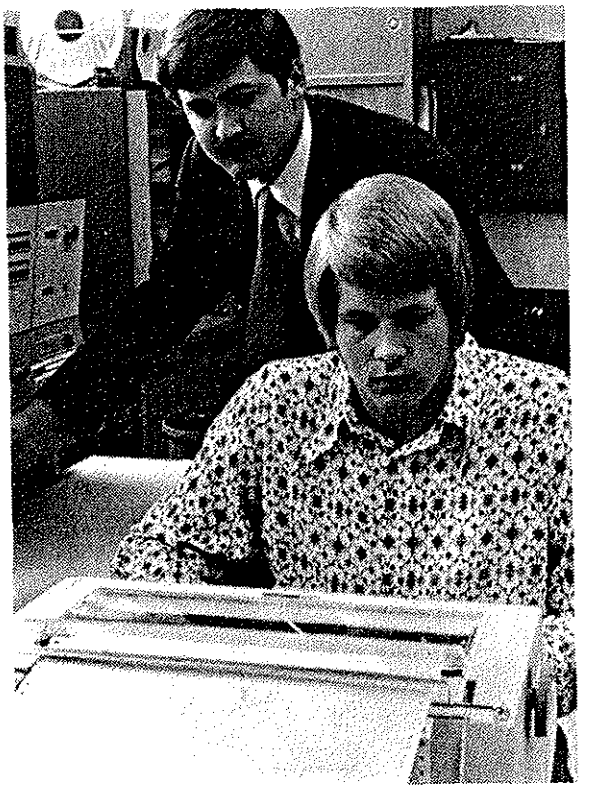
Recommend Typing 2.606 of those students typing fewer than 30 words per minute.

52 term units required for certificate.

Computer Operator Curriculum

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		English Variable (Based on Placement Test) or Gen. Education Elect.		3
3		Math Variable (Based on Placement Test)		3
3	3	Accounting	6.923 or BA 211	4
3		Introduction to Business	2.502 or BA 101	3
	2	Introduction to Calculators	2.658	1
2	3	Introduction to Data Processing	6.940 or BA 131	3
2		Introduction to Real Estate		2
Term 2				
3		English Variable or Gen. Ed. Elect.		3
3		System 360 Concepts and Job Control	6.956	3
3		Computer Center Operations	6.951	3
	6/18	Computer Center Lab (Variable Credit) 18, 9, or 6 hours	6.947	2/6
		and/or		
1	8/12	Cooperative Work Experience		3/4
3		Introduction to Psychology	1.606 or Psy 201	3
Term 3				
3		English Variable or Gen. Ed. Elect.		3
2		DOS/TOS Facilities	6.975	2
4		Computer Center Operations	6.952	4
	6/18	Computer Center Lab (Variable Credit) 18, 9, or 6 hours	6.947	2/6
		and/or		
1	8/12	Cooperative Work Experience		3/4
2	3	RPG I	2.679	3

55 term units required for certificate.



REAL ESTATE TECHNOLOGY

This curriculum places emphasis on city planning, land utilization, population growth, mortgage lending, hedging against inflation, suburban growth, city-urban renewal, the neighborhood development programs, and decentralization of industry.

Students are trained in the area of real estate salesmanship based on new tools of helping them understand why people buy, and how to penetrate deep into the prospect's basic needs and wants—make him want to buy . . . and be happy doing it. This is the technique of selling the prospect the way he likes to buy.

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

Proficiency in English must be demonstrated at a minimum level of Public Speaking 1.610 or equivalent in the Real Estate Technology curriculum.

Upon satisfactory completion of the requirements in the Real Estate Technology program, the student is awarded an Associate in Science Degree, signifying that he is prepared to effectively function and advance in the many areas of the technology.

Associate in Science Degree; Real Estate Technology: Required 100 term units.

Real Estate Technology Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		English Variable (Based on Placement Test) or Gen. Education Elective		3
			Comm. Skills 1.101 or Wr 111	
3		Math Variable (Based on Placement Test)		3
3	3	Accounting	6.923 or BA 211	4
3		Introduction to Business	2.502 or BA 101	3
	2	Introduction to Calculators	2.658	1
2	3	Introduction to Data Processing	6.940 or BA 131	3
2		Introduction to Real Estate	2.401	2
Term 2				
3		English Variable (Based on Placement Test) or Gen. Education Elective		3
			Comm. Skills 1.104 or Wr 112	
3		Applied Mathematics in Real Estate	2.405	3
3		Business Law	2.320 or BA 226	3
3		Real Estate Principles	2.400	3
1	4	*Typing or Elective	2.606 or SS 121	3
Term 3				
3		Public Speaking	1.610 or Sp 111	3
3		Introduction to Psychology	1.606 or Psy 201	3
3		Real Estate Law	2.402	3
3		Real Estate Finance	2.406	3
3		Zoning Ordinance	2.425	3

* Typing 2.606 (Beginning Typing) needs to be taken by those students having had no previous skill, or students who type fewer than 30 words per minute. This course may be taken in either of the first three terms.

SECOND YEAR

Term 4				
3		Real Estate Practices	2.404	3
3		Real Estate Trends and Development	2.412	3
3		Commercial and Investment Properties	2.419	3
1	4	Elements of Design and Construction	2.418	3
3		Real Estate Salesmanship and Promotion	2.420	3
3		Title Insurance and Escrow	2.423	3
1	4/8	*Cooperative Work Experience		
Term 5				
2		Subdivision and Community Planning	2.438	2
3		Real Estate Appraisal I	2.408	3
2		Property Management	2.422	2
3		Fundamentals of Real Estate Taxation	2.416	3
3		Report Writing	1.106	3
1	4/8	*Cooperative Work Experience		2/3
Term 6				
3		Real Estate Appraisal II	2.409	3
3		Real Estate Counseling	2.440	3
3		Fundamentals of Exchanging	2.417	3
2	3	Construction Estimating	6.110	3
3		General Education Elective		3
1	4/8	*Cooperative Work Experience		2/3

* Students are required to spend a total of 12 hours in work experience and 2 hours in classroom assignment. Additional work experience may be taken upon department approval.

SECRETARIAL SCIENCE

The two-year curriculums 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 those persons already engaged in business to obtain further training that will help them advance in their employment. A broad selection of courses is offered enabling students interested in secretarial work to become highly skilled.

For those who desire a business training program in a minimum of time, this curriculum may be modified to one year. This training will provide a practical training for the student who wishes to know general office, receptionist, clerk-typist, or clerk-stenographer work, and is recommended for those who like dealing with people and who wish to prepare for light secretarial or clerical work.

Those students choosing to complete two years of training have the option of Professional Secretary or Medical Secretary. The responsibilities of both of these secretaries 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 importance of the job increases because the secretary works closely with management-level personnel and is exposed to policy-making decisions.

The Associate in Science Degree will be issued to persons completing the two-year curriculum. A letter of completion will be issued upon request to persons completing minimum one-year requirements.

Associate in Science Degree: Required term units as indicated.

Proficiency in English must be demonstrated at a minimum level of Report Writing 1.106 or equivalent in Secretarial Science curriculums.

Professional Secretary Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		English Variable (Based on Placement Test) or Gen. Ed. Elective		3
3		*Math Variable (Based on Placement Test)		3
2	3	†Shorthand	2.620 or SS 111	3
1	4	‡Typing	2.606 or SS 121	3
3		Introduction to Business	2.502 or BA 101	3
	2	Introduction to Calculators	2.658	1
2	3	Introduction to Data Processing	6.940 or BA 131	3
2		Introduction to Real Estate	2.401	2
Term 2				
3		English Variable or Gen. Ed. Elective		3
1	4	Typing	2.607 or SS 122	3
2	3	Shorthand	2.621 or Machine Transcription 2.663 or SS 112	3
1	3	Business Machines	2.661	2
2	2	Records Management	2.642	3
3		Introduction to Psychology	1.606 or Psy 201	3
Term 3				
3		Business Correspondence	2.672 or BA 214	3
2	3	Shorthand or Machine Transcription	2.622 or SS 113	3
1	4	Typing	2.608 or SS 123	3
2	2	Office Procedures	2.641	3
1	1	Personal Development	2.518 or HE 250	1
3	3	Accounting	6.923 or BA 211	4

* Business Mathematics 2.653 required for graduation.

† Beginning Shorthand required of those students without previous shorthand training or those students desiring a brush-up on basic shorthand theory.

‡Typing (beginning) to be taken by those students having had no previous typing or students who type fewer than 30 words per minute.

Shorthand required of those students planning to take a second year of training.

A Letter of Completion will be granted upon request at the completion of the above requirements.

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
3		Report Writing or English Variable	1.106	3
3	3	Accounting	6.924 or BA 212	4
1	4	Transcribing Machine Operation or Business Machines 2.660	2.663	3
3		Business Law	2.320 or BA 226	3
2	3	Speed Building	2.549 or SS 211	3
3		Office Management	2.643	3
Term 5				
2	3	Special Dictation and Transcription	2.537 or SS 212	3
3		Business Economics	1.524 or Ec 201	3
3	3	Accounting	6.925 or BA 213	4
1	16	*Cooperative Work Experience or Business Electives (5 hours)		5
Term 6				
2	3	Special Dictation and Transcription	2.538 or SS 213	3
3		Employer-Employee Relations	4.500	3
3		General Education Elective		3
3		Business Elective		3
1	16	*Cooperative Work Experience or Electives (5 hours)		5

* Cooperative work experience recommended for one term only.

100 minimum term units required for an Associate Degree in Secretarial Science.

Medical Secretary Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		English Variable (Based on Placement Test) or Gen. Education Elect.		3
3		*Math Variable (Based on Placement Test)		3
2	3	†Shorthand	2.620 or SS 111	3
1	4	‡Typing	2.606 or SS 121	3
3		Introduction to Business	2.502 or BA 101	3
	2	Introduction to Calculators	2.658	1
2	3	Introduction to Data Processing	6.940 or BA 131	3
2		Introduction to Real Estate	2.401	2
Term 2				
3		English Variable or Gen. Ed. Elect.		3
1	4	Typing	2.607 or SS 122	3
2	3	Shorthand or Machine Transcription 2.569	2.621 or SS 112	3
1	3	Business Machines	2.661	2
2	2	Records Management	2.642	3
3		Introduction to Psychology	1.606 or Psy 201	3
Term 3				
3		Business Correspondence	2.672 or BA 214	3
2	3	Shorthand or Machine Transcription 2.570	2.622 or SS 113	3
1	4	Typing	2.608 or SS 123	3
2	2	Office Procedures	2.641	3
1	1	Personal Development	2.518 or HE 250	1
3	3	Accounting	6.923 or BA 211	4

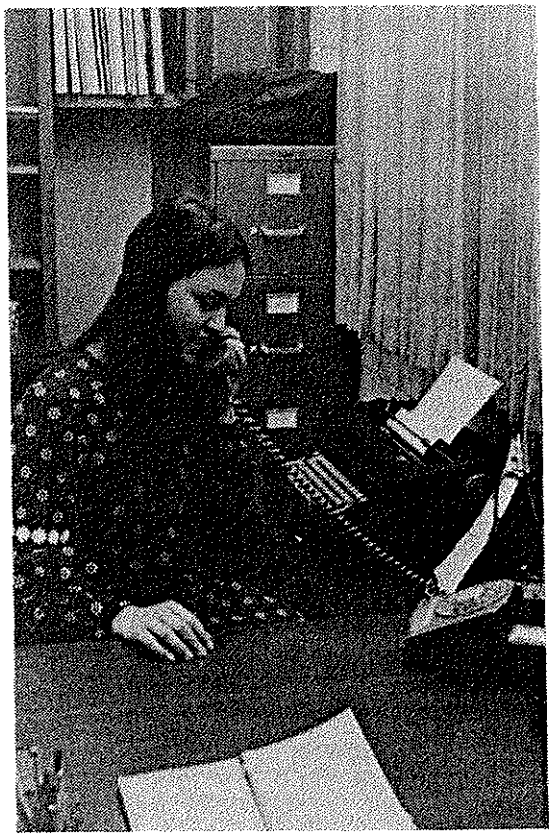
* Business Mathematics 2.653 required for graduation.

† Beginning Shorthand required of those students without previous shorthand training or those students desiring a brush-up on basic shorthand theory.

‡ Typing (beginning) to be taken by those students having had no previous typing or students who type fewer than 30 words per minute.

Shorthand required of those students planning to take a second year of training.

A Letter of Completion will be granted upon request at the completion of the above requirements.



SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
3		Medical Terminology	5.600	3
2	3	Speed Building (Shorthand)	2.549	3
2	3	Medical Secretary Procedures	2.566	4
3	3	Basic Sciences for Health Occupations	5.601	4
1		Health Occupations Overview	5.700	1
Term 5				
2	3	Special Dictation and Transcription	2.567	3
1	3	Medical Machine Transcription	2.569	2
3		Human Anatomy & Physiology	5.608	3
1	16	*Cooperative Work Experience or Medical Terminology (2 credits) and Business Economics (3 credits)	(5.610) (1.524)	5
3		General Education Elective		3
Term 6				
2	3	Special Dictation and Transcription	2.568	3
3		General Education Elective		3
3		Medical Science	5.605	3
1	3	*Cooperative Work Experience (5 credits) or Medical Terminology and	5.610	2
3		Business Economics	1.524	3
3		Business Law	2.320	3

* Cooperative work experience recommended for one term only.

93 minimum term units required for an Associate Degree in Secretarial Science.

Civil-Structural Engineering Technology

CADASTRAL SURVEYING TECHNICIAN

The Cadastral Surveying curriculum provides practical training in the application of current theory and practices common to the field of land surveying, preparing the student for employment in the land surveying field.

This is a cooperative work experience program with some unique features. The student will attend the first two terms of the civil program; then, instead of attending school spring term, the student works for the Cadastral Surveyor's office of the Bureau of Land Management, somewhere in the western states. This employment continues through the summer. At the end of the first summer the student returns to school for two more terms. Spring and summer are again spent working for the cadastral surveyors. The student returns to school for fall and winter terms, completing the program at the end of the winter term.

Upon satisfactory completion of the requirements the student is awarded an Associate in Science Degree, signifying that he is prepared to effectively function and advance in the many job areas of surveying.

Cadastral Surveying Technician Curriculum

FIRST YEAR

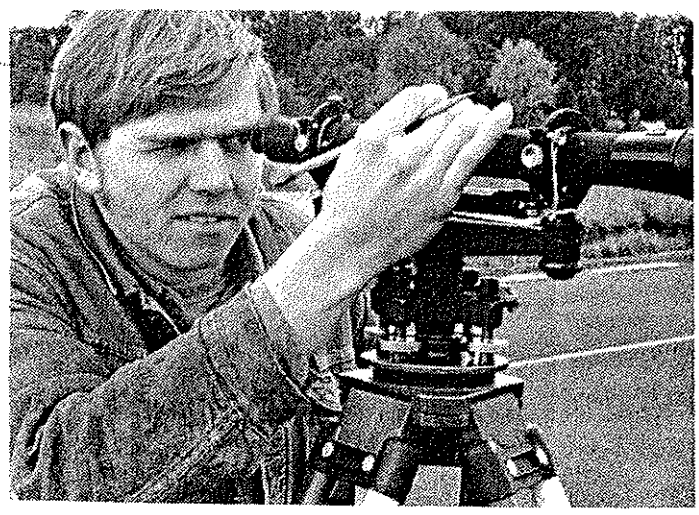
Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
2	6	Plane Surveying	6.101	4
	4	Drafting	4.101	2
	2	Slide Rule Operations	6.137	1
4		Technical Mathematics	6.261	4
3		Communication Skills	1.101	3
3		General Education Elective		3
Term 2				
2	6	Plane Surveying	6.103	4
	4	Project Graphics	4.135	2
	2	Engineering Problems	6.138	1
3	2	Applied Physics	6.371	4
4		Technical Mathematics	6.262	4
3		Communication Skills	1.104	3
Term 3 & Summer				
1	40	Cadastral Surveying Field Lab & Seminar I	6.141	7

SECOND YEAR

Term 4				
1	6	Route Surveying	6.507	3
2	4	Land Division and Mapping	6.335	3
3	2	Applied Physics	6.370	4
4		Technical Mathematics	6.266	4
3		Report Writing	1.106	3
3		General Education Elective		3
Term 5				
2	2	Hydraulics	6.112	3
2	3	Construction Estimating	6.110	3
1	2	Tree Identification	3.610	2
3		General Forestry	3.600	3
3		Business Law	2.320	3
3		Introduction to Psychology	1.606	3
Term 6 & Summer				
1	40	Cadastral Surveying Field Lab & Seminar II	6.142	7

THIRD YEAR

Term 7				
3	2	Elementary Geology	4.305	4
1	3	Earthwork Computations and Estimates	6.528	2
3		Contracts and Specifications	6.118	3
1	6	Surveying Computations	6.500	3
3		Survey Law	6.132	3
3		Public Land Survey	6.134	3



CIVIL-STRUCTURAL ENGINEERING TECHNICIAN

The Civil and Structural Engineering Technology curriculum provides practical training in the application of current theory and practices common to the field of civil engineering, preparing the student for employment in various branches of the civil and structural engineering fields and for advancement in the chosen field. The program is designed to prepare competent engineering technicians for positions in civil engineering enterprise with excellent opportunities for careers in highway, bridge, dam, 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 adaptation to the changing technological and social world are 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 organizations.

On a construction project that is being planned, civil and structural technicians may help in estimating costs or preparing specifications for materials. They participate in surveying, drafting, or designing 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.

Upon satisfactory completion of the requirements in the Civil and Structural program, the student is awarded an Associate in Science Degree, signifying that he is prepared to effectively function and advance in the many job areas of civil and structural engineering.

Examples of opportunities are:

Construction Foreman	Instrument Man, Survey
Assistant Engineer	Inspector
Senior Draftsman	Construction Estimator
Surveyor	Cost Estimator
Civil Engineering Technician	Contractor's Assistant
	Technical Writer
Structural Designer	Computer
Supt. of Construction	Engineering Aide

Associate in Science Degree: Required 104 term units.

Civil-Structural Engineering Technician Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
2	6	Plane Surveying	6.101	4
	4	Drafting	4.101	4
4		Technical Mathematics	6.261	4
	2	Slide Rule Operations	6.137	1
3		Communcation Skills	1.101	3
		General Education Elective		3
Term 2				
	2	Engineering Problems	6.138	1
3	2	Applied Physics	6.371	4
3		Communication Skills	1.104	3
	4	Project Graphics	4.135	2
2	6	Plane Surveying	6.103	4
4		Technical Mathematics	6.262	4
Term 3				
2	3	Applied Mechanics	6.109	3
1	6	Surveying Computations	6.500	3
2	3	Strength of Materials	6.105	3
4		Technical Mathematics	6.266	4
3		Report Writing	1.106	3
		SELECT ONE:		
3	2	Applied Physics	6.370	4
2	2	Computer Problems for Engineers	6.929	3

SECOND YEAR

Term 4				
2	4	Land Division and Mapping	6.335	3
2	3	Strength of Materials	6.128	3
3		Contracts and Specifications	6.118	3
1	3	Earthwork Computation and Estimates	6.528	2
1	3	Structural Analysis and Design	6.130	2
3		Introduction to Psychology	1.606	3
Term 5				
2	2	Hydraulics	6.112	3
2	3	Construction Estimating	6.110	3
3	3	Timber and Steel Construction	6.125	4
2	3	Environmental Quality Control	6.139	3
1	2	Practical Descriptive Geometry	6.127	2
		General Education Elective		3
Term 6				
2	2	Hydraulics	6.114	3
2	3	Concrete Construction and Design	6.123	3
2	2	Sanitary Engineering	6.140	3
2	3	Soil Mechanics	6.124	3
1	6	Route Survey	6.507	3
3		Methods of Supervision	4.287	3

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

Drafting Technology

DRAFTING TECHNICIAN & MECHANICAL DRAFTING TECHNICIAN

The Drafting Technology programs prepare individuals for positions in engineering departments in the areas of mechanical drafting, design, technical illustration, and other drafting-oriented positions.

The courses within the programs are specifically selected and planned to train technicians for drawing preliminary sketches, making layouts from technical information, rendering drawings in pencil and ink, making overlays and pasteups, and detailed drawing of complete and final plans.

The curricula 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.

Upon satisfactory completion of the requirements in the Drafting Technician or Mechanical Drafting Technician program, the student is awarded an Associate in Science Degree.

Examples of opportunities are listed below:

Technical Illustrator
Sheetmetal Layout Draftsman
Machine Drafting Technician
Structural Drafting Technician
Aeronautical Draftsman
Electronics and Electrical Drafting Technician
Topographical and Mapping Draftsman
Engineering Graphics Drafting Technician

Drafting Technician: Associate in Science Degree: Required 97 term units.

Mechanical Drafting Technician: Associate in Science Degree: Required 102 term units.

Drafting Technician Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		Communication Skills	1.101	3
3		Introduction to Psychology	1.606	3
4		Technical Mathematics	6.261	4
	2	Slide Rule Operations	6.137	1
1	6	Plane Surveying	6.101	4
	3	Sketching	4.118	1
1	6	Machine Drafting	4.221	3
Term 2				
3		Communication Skills	1.104	3
4		Technical Mathematics	6.262	4
2	6	Plane Surveying	6.103	4
2	3	Manufacturing Processes	6.606	3
	2	Drafting Room Computations	4.126	1
1	6	Machine Drafting	4.222	3
Term 3				
3		Psychology of Human Relations	1.608	3
4		Technical Mathematics	6.266	4
2	3	Manufacturing Processes	6.610	3
1	7	Mapping and Platting	4.131	3
1	2	Practical Descriptive Geometry	6.127	2
1	6	Machine Drafting	4.223	3

SECOND YEAR

Term 4				
3	2	Applied Physics	6.370	4
	8	Architectural Drafting	4.226	3
	4	Electrical Drafting	4.103	2
3		Introduction to Specifications	4.102	3
		(SELECT ONE)		
	8	Cam and Gear Drafting	4.225	3
	8	Civil Engineering Drafting	4.236	3

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

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 5				
3	2	Applied Physics	6.371	4
	8	Technical Illustration	4.228	3
3		Business Economics	1.524	3
3		General Education Elective		3
		(SELECT ONE)		
	8	Architectural Drafting	4.227	3
	8	Photogrammetry	4.235	3
	8	Machine Design Lab I	4.232	3
Term 6				
3	2	Applied Physics	6.366	4
	8	Sheet Metal Drafting	4.230	3
	4	Structural Drafting	4.111	2
		(SELECT TWO)		
	8	Architectural Design	4.235	3
	8	Technical Illustration	4.229	3
	8	Machine Design Lab II	4.233	3
	8	Jig and Fixture Drafting	4.231	3

Mechanical Drafting Technician Curriculum

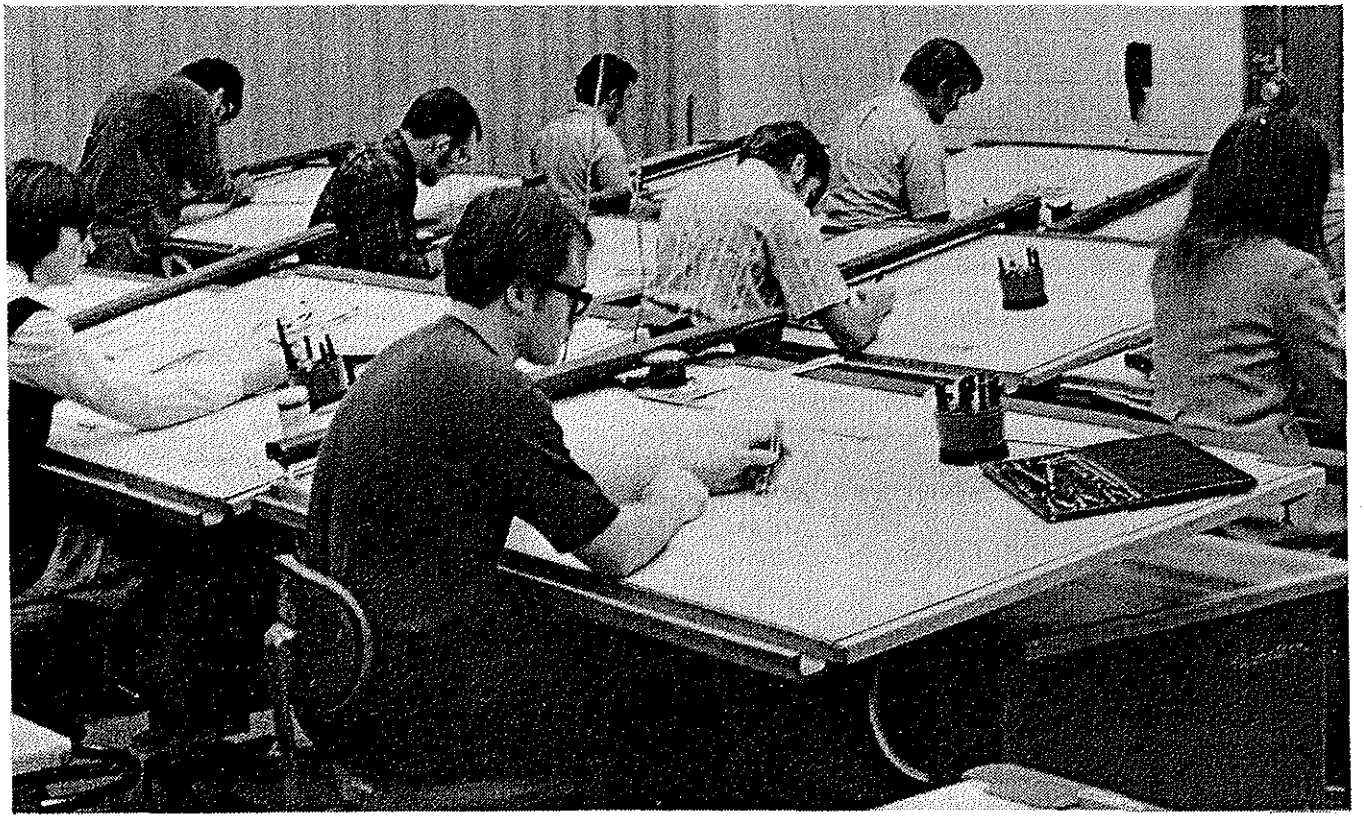
FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		Communication Skills	1.101	3
3		Introduction to Psychology	1.606	3
4		Technical Mathematics	6.261	4
	2	Slide Rule Operations	6.137	1
2	3	Machine Tool Process	4.802	3
	3	Sketching	4.118	1
1	6	Machine Drafting	4.221	3
Term 2				
3		Communication Skills	1.104	3
4		Technical Mathematics	6.262	4
	2	Drafting Room Computations	4.126	1
3	2	Applied Physics	6.371	4
2	3	Industrial Materials	4.122	3
1	6	Machine Drafting	4.222	3
Term 3				
4		Technical Mathematics	6.266	4
3	2	Science Elective		4
1	2	Practical Descriptive Geometry	6.127	2
1	6	Machine Drafting	6.223	3
	3	General Education Elective		3

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
3	2	Science Elective		4
3	2	Electricity	6.208	4
1	9	Project Drafting	4.119	4
	8	Cam and Gear Drafting	4.225	3
Term 5				
3		Business Economics	1.524	3
2	3	Applied Mechanics	6.109	3
2	3	Metallurgy	6.602	3
	4	Electrical Drafting	4.103	2
		(SELECT ONE)		
	8	Technical Illustration	4.228	3
	8	Machine Design Lab I	4.232	3
Term 6				
3		Report Writing	1.106	3
2	2	Applied Fluid Power	6.117	3
	8	Sheet Metal Drafting	4.230	3
		(SELECT TWO)		
	8	Technical Illustration	4.229	3
	8	Machine Design Lab II	4.233	3
	8	Jig and Fixture Drafting	4.231	3

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



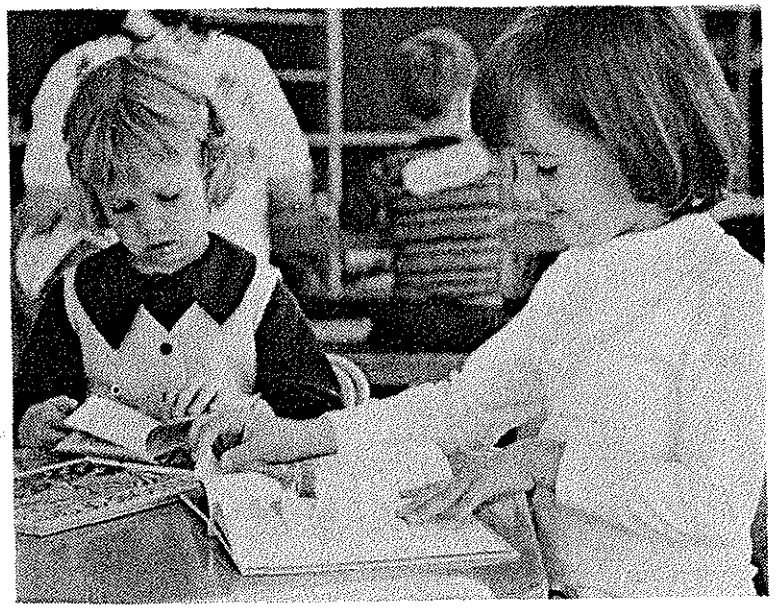
Early Childhood Education

EARLY CHILDHOOD EDUCATION

This program is planned for persons of all ages, regardless of background. It is designed to improve home and family life, to help parents guide children, and to train persons as child care aides and assistants. The program offers a two-year Associate of Science degree upon successful completion of the requirements.

The two-year program leads to an Associate of Science Degree in Early Childhood Education. National trends indicate increasing employment opportunities as more subsidized day care and greater understanding of importance of early years development. Graduates may work in nursery schools, Head Start centers, day-care centers, and as paraprofessional members of teams in public schools.

The first year of the program may be taken for a certificate in Early Childhood Education. This training will prepare one to work as a teacher's aide or day-care assistant. Most of the courses are excellent electives for parents or volunteers who work with children.



Early Childhood Education Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		Development in Childhood I	7.119	3
2	2	Observing and Guiding Behavior I	7.131	3
3		Introduction to Psychology	1.606	3
3		Communication Skills I	1.101	3
2	2	Personal Development/ Dynamics	7.133	3
Term 2				
3		Development in Childhood II	7.120	3
2	2	Observing and Guiding Behavior II	7.132	3
2	2	Introduction to Early Childhood Education	7.129	3
2	2	Basic Design	7.114	3
3		Concerns of Parenthood	7.118	3
3		Communication Skills II	1.104	3
Term 3				
3		Child Nutrition	7.115	3
4		Childhood Emergencies	7.116	4
2	2	Creative Activities	7.136	3
2	2	Home, Family, Career Management	7.128	3
	6	Supervised Field Experience I	7.134	3

SECOND YEAR

Term 4				
4		Early Childhood Curriculum Methods I	7.123	4
3	3	Children's Literature	7.117	3
3	3	Family Living	7.127	3
	6	Supervised Field Experience II	7.135	3
3		Psychology of Human Relations	1.608	3
Term 5				
4		Early Childhood Curriculum Methods II	7.124	4
3		Music for Young Children	7.130	3
2	8	Directed Participation I	7.121	6
3		Family-Community Relationships	7.126	3
Term 6				
2	12	Directed Participation II	7.122	8
3		The Exceptional Child	7.125	3
4		Administration of Child Care Centers	7.113	4
3		Elective		3

Electronics Technology

ELECTRONIC ENGINEERING TECHNICIAN

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

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 materials, determine the best method 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.

Upon satisfactory completion of the requirements in the Electronic Technician program, the student is awarded an Associate in Science Degree, signifying that the student is prepared to effectively function and advance in the many employment areas of the electronic technology.

Examples of opportunities are:

- Radio Communications Technician (Aircraft, etc.)
- Radio Operator and Dispatcher
- Electronics Technician
- Laboratory Technician (Electronic)
- Electronic Instrument Technician (Mfg.)
- Guided Missile Technician
- Electronic Computer Technician
- Microwave Radio Technician
- Electronic Instrument Service Technician
- Industrial Electronic Technician Supervisor
- Electronic Equipment Designer
- Electronic Engineering Technician

Associate in Science Degree: Required 110 term units.

Electronic Engineering Technician Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3	3	Electrical Theory DC	6.200	4
	2	Slide Rule Operations	6.137	1
4		Technical Mathematics	6.261	4
	4	Drafting	4.101	2
3	2	Introductory Chemistry	6.275	4
3		Communication Skills	1.101	3
Term 2				
3	3	Electrical Theory AC	6.202	4
	2	Engineering Problems	6.138	1
4		Technical Mathematics	6.262	4
3	3	Transistor Fundamentals	6.210	4
3	2	Applied Physics	6.370	4
3		Communication Skills	1.104	3
Term 3				
3	3	Electrical Circuits	6.206	4
3	6	Transistor Circuits	6.211	5
3		Report Writing	1.106	3
4		Technical Mathematics	6.266	4
3	2	Applied Physics	6.371	4

SECOND YEAR

Term 4				
3		Electrical Mathematics	6.115	3
2	6	Electronic Circuit Concepts	6.212	4
2	3	Wave Generation and Shaping	6.234	3
2	3	Semiconductors	6.237	3
2		Network Analysis	6.230	2
3		General Education Elective		3
Term 5				
	4	Electrical Drafting	4.103	2
3	3	Industrial Electronics	6.218	4
3	6	Industrial Television	6.228	5
3		Electronic Data Processing	6.240	3
2		Antennas and Transmission Lines	6.231	2
3		General Education Elective		3
Term 6				
1	3	Advanced Electronic Circuits	6.216	2
2	2	Electronic Instruments	6.220	3
3	3	Industrial Televison	6.235	4
2	3	Advanced Industrial Electronics	6.248	3
2	3	Microwaves	6.242	3
3		General Education Elective		3

TELEVISION-RADIO SERVICE

The Television-Radio Service program prepares students for employment in the field of radio and television servicing.

The Chemeketa Radio-Television Service curriculum implements the student-centered Individualized Curriculum for Electronics (ICE) program in which the student progresses at his own pace and receives credit for prior education and experience based on demonstrated competence. This new educational approach, co-sponsored by Chemeketa instructors, stimulates enthusiasm and initiative in students.

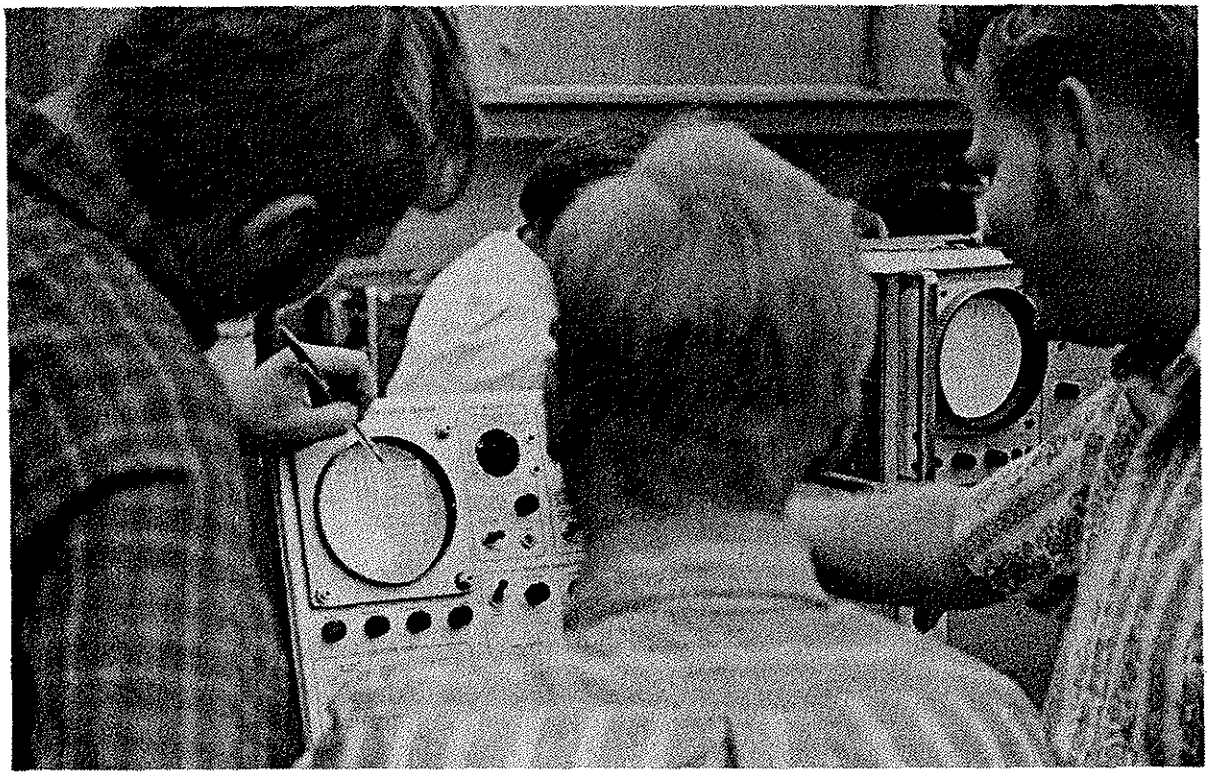
This program provides basic principles, theory, and laboratory experience in the practical phases of radio and television service work. Basic mathematics and communication skills necessary to the serviceman are included in the theory courses as needed.

Applicants must have a high school diploma or equivalent and be in good physical condition.

A Certificate of Completion is awarded to those individuals who have satisfactorily completed the required courses within the curriculum.

Television-Radio Service Curriculum

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
12		DC Theory and AC Theory	4.255	9
	6	DC Theory and AC Theory Lab	4.256	2
6		Vacuum Tube and Circuits Theory	4.257	5
	6	Vacuum Tube and Circuits Theory Lab	4.258	2
Term 2				
3	6	Transistors and Circuits Theory	4.259	5
2		Radio Principles	4.262	2
	6	Radio Principles Lab	4.263	2
2		Use of Instruments I	4.260	2
3		Television Principles	4.266	3
	8	Television Principles Lab	4.267	3
Term 3				
2		Radio Servicing	4.264	2
	6	Radio Servicing Lab	4.265	2
3		Television Servicing	4.268	3
	8	Television Servicing Lab	4.269	3
2		Use of Instruments II	4.261	2
3		FM and HIFI Theory	4.270	3
	3	FM and HIFI Theory Lab	4.271	1
3		Business Management	2.202	3
Term 4				
3	6	Color Television Servicing	4.273	5
3	3	Solid State Servicing	4.272	4
3	3	Logical Trouble Shooting	4.274	4
1	8	Cooperative Work Experience	2.687	3



FOOD SERVICES TECHNOLOGY

This program currently is under development for the fall term. It is planned to be a two-year program if adequate resources and staff are available. Course numbers and descriptions were not available at the time of the printing of this catalog.

Forest Technology

FOREST PRODUCTS TECHNICIAN

The Forest Products Technician program qualifies technicians for employment in a variety of forest product manufacturing operations and prepares them for responsible positions in Oregon's largest industry.

Job opportunities are available for the qualified graduate in plant operations, research and development, quality control, and sales.

Upon satisfactory completion of the requirements of the Forest Products Technician curriculum, the student is awarded an Associate in Science Degree.

Associate in Science Degree: Required 114 term units.

Forest Products Technician Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		Communication Skills	1.101	3
	4	Drafting	4.101	2
2	2	Mathematics	4.200	3
2	6	Plane Surveying	6.103	4
	2	Slide Rule Operations	6.137	1
1	2	Tools and Equipment	3.605	2
Term 2				
3		Communication Skills	1.104	3
	4	Project Graphics	4.135	2
2	2	Analysis (Mathematics)	4.207	3
2	6	Plane Surveying	6.103	4
1	2	Tree Identification	3.610	2
3	3	Forest Products	4.280	4
Term 3				
3		Report Writing	1.106	3
3	4	Forest Mensuration	6.300	4
1	2	Tree Identification	3.611	2
1	2	Accident Prevention and First Aid	4.190	2
3	2	Introductory Chemistry	6.275	
3		General Education Elective		3

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
3	3	Pulp and Paper Technology	4.281	4
2	4	Plywood, Composite and Laminated Wood Products	6.285	3
3	2	Practical Physics	4.300	4
3	2	Chemistry	6.276	4
3		Introduction to Psychology	1.606	4
3		Consumer Economics	1.525	3
Term 5				
1	6	Wood Structure and Identification	6.280	3
3	2	Wood Adhesives and Coatings	6.279	4
3	2	Wood Preservation and Drying	6.282	4
3	2	Wood Industry Economics	4.286	3
3		General Education Elective		3
Term 6				
2	2	Wood Products Marketing	3.614	3
2	6	Logging and Milling	4.282	4
3		Methods of Supervision	4.287	3
2	4	Building Materials	6.281	4
2	2	Industrial Quality Control	6.287	3

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

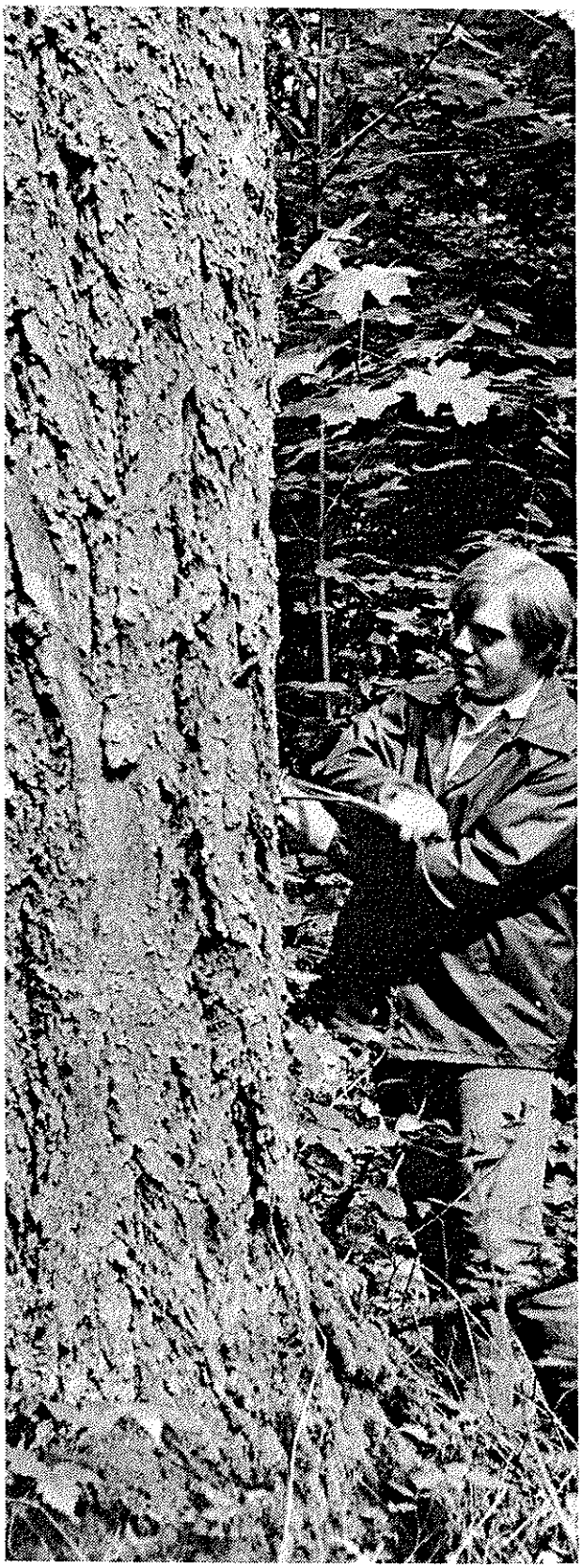
FOREST TECHNICIAN

The Forest Technician curriculum provides the student with the necessary knowledge and technical skills required for employment as a forest technician.

Job opportunities are available in the areas of log scaling, timber management, fire control, recreation, timber stand improvement, and as forest engineering technicians.

Upon satisfactory completion of the requirements of the Forest Technician curriculum, the student is awarded an Associate in Science Degree.

Associate in Science Degree: Required 103 term units.



Forest Technician Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		Communication Skills	1.101	3
	4	Drafting	4.101	2
3		General Forestry	3.600	3
2	2	Mathematics	4.200	3
2	6	Plane Surveying	6.103	4
	2	Slide Rule Operations	6.137	1
1	2	Tools and Equipment	3.605	2
Term 2				
3		Communication Skills	1.104	3
	4	Project Graphics	4.135	2
2	2	Analysis (Mathematics)	4.207	3
2	6	Plane Surveying	6.103	4
1	2	Tree Identification	3.610	2
3	3	Forest Products	4.280	4
Term 3				
3		Report Writing	1.106	3
3	4	Forest Mensuration	6.300	4
1	2	Tree Identification	3.611	2
1	2	Accident Prevention and First Aid	4.190	2
2	2	Forest Photogrammetry	3.624	3
3		General Education Elective		3

SECOND YEAR

Term 4				
3	2	Natural Cover Fire Protection	5.151	4
1	6	Forest Road Surveying	6.510	3
2	6	Logging and Milling	4.282	4
3	2	Practical Physics	4.300	4
3		Introduction to Psychology	1.606	3
3		Consumer Economics	1.525	3
Term 5				
1	6	Wood Structure and Identification	6.280	3
2	6	Scaling Practices	3.617	4
3	2	Practical Physics	4.302	4
3		Wood Industry Economics	4.286	3
3		General Education Elective		3
Term 6				
2	2	Wood Products Marketing	3.614	3
3		Methods of Supervision	4.287	3
3	4	Power Systems	4.172	4
	2	Forest Pathology	3.607	1
3		General Education Elective		3

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

Health Occupations

DENTAL ASSISTANT

This one-year program provides the technical preparation necessary to qualify for employment in dental offices, laboratories, and clinics. It also provides an opportunity for those already working in the field to further develop knowledge and skills. The program is accredited by the American Dental Association Council on Dental Education.

The student acquires proficiency in assisting the dentist in a variety of capacities in the private office or in a dental health clinic.

Typical duties include preparation of patients for treatment, mixing filling materials and dental cement, checking and sterilizing equipment, taking inventories, and ordering supplies. Laboratory duties include pouring study models of teeth, casting inlays, and taking and developing x-ray films. In the capacity of office manager, the dental assistant acts as receptionist, schedules appointments, keeps accounts and records, sends out bills, and is responsible for the general appearance of the office. Expanded duties are included as approved by the Oregon Board of Dental Examiners. Upon completion of the course of study, the graduate is qualified to assist in a dental office or clinic with a minimum of familiarization and orientation by the dentist.

Prior to graduation, students are required to take an examination for certification in dental X-ray.

Upon satisfactory completion of the requirements in the Dental Assistant program the student is awarded a Certificate of Completion. Graduates are eligible to take the national certification examination of the American Association of Dental Assistants.

Applicants must be graduates of an accredited high school or the equivalent and meet the college requirements for entrance. The assistant should be neat, clean, and in good health. A pleasant personality is essential in dealing with patients. She should be able to meet people, put them at ease, and to express herself clearly and pleasantly.

Dental Assistant Curriculum

Class Hours	Lab Work	Course Title	No. Course	Units Term
Term 1				
1		Health Occupations Overview	5.700	1
3	3	Basic Sciences for Health Occupations	5.601	4
3		Business Mathematics	2.650	3
2	3	Dental Anatomy and Physiology	5.405	3
3	6	Introductory Concepts in Dental Assisting	5.411	5
3		Communication Skills	1.101	3
Term 2				
2	6	Chairside Assisting and Basic Lab Procedures	5.403	4
	3	Applied Roentgenology	5.408	1
3	3	Dental Sciences	5.404	4
2	3	Dental Office Management	5.410	3
1	4	*Typing	2.607	3
	3	Expanded Duties I	5.401	1
Term 3				
2	3	Advanced Laboratory Procedures	5.407	3
	3	Applied Roentgenology	5.413	1
3		Dental Office Correspondence	5.412	3
	16	Dental Office Practice	5.409	3
3		Introduction to Psychology	1.606	3
	3	Expanded Duties II	5.402	1

* Basic Typing 2.606 or equivalent, is required during the fall term of students typing less than 30 words per minute.

MEDICAL ASSISTANT

A Medical Assistant is a person trained to assist the licensed physician in his office. There is a steady demand for young women in this field performing in various types of medical offices. The duties range from assisting with the physical examination, to receptionist and office responsibilities. Each office differs in its requirements.

The Medical 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 skills needed to function safely and effectively as a health team member in three major areas of work assignment: the reception of patients, understanding business practices and medical record-keeping, and the technical aspects of assisting with medical procedures.

The one-year curriculum includes general education subjects, orientation to the health occupations, basic sciences, and technically-oriented courses in medical and office procedures. The third term includes supervised experience in clinics, physicians' offices, and selected areas of hospitals. Nurses, medical assistants, and teachers of business and general education subjects constitute the faculty and Advisory Committee.

Applicants for the Medical Assistant program must be graduates of an accredited high school or the equivalent as determined by test, be in good health, and have suitable personal traits and character.

A Certificate of Completion is awarded upon satisfactory completion of the program. After a suitable period of successful employment, the American Association of Medical Assistants certifies graduates by examination.

Medical Assistant Curriculum

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
1		Health Occupations Overview	5.700	1
3		Communication Skills	1.101	3
3		Business Mathematics	2.650	3
1	4	*Typing	2.606	3
3	3	Basic Sciences for Health Occupations	5.601	4
3		Medical Office Procedures	5.604	3
3	3	Medical Assisting, Basic Procedures	5.602	4
Term 2				
3		Communication Skills	1.104	3
1	4	Typing	2.607	3
3		Human Anatomy and Physiology	5.608	3
3		Medical Office Management	5.607	3
1		First Aid	5.513	1
3		Medical Terminology	5.600	3
3		Introduction to Psychology	1.606	3
1	2	Medical Transcription	5.603	2
Term 3				
3		Medical Science	5.605	3
2	2	Medical Assisting, Advanced Procedures	5.606	3
3		Business Correspondence	2.672	3
3		Elective		3
	16	Medical Office Practice	5.609	3

* Basic Typing 2.606, or equivalent, is required during the Fall term of students typing less than 30 words per minute.

MENTAL HEALTH TECHNOLOGY

The two-year Mental Health Technology program grants an Associate in Arts degree and combines the academic course work with field placement experiences in each quarter. A significant number of courses within the program are transferable to Oregon's four-year colleges.

Upon successful completion of this curriculum the student has developed basic skills of observation, interviewing, counseling (individual and group), and gained a working knowledge of the health and welfare services offered by the community.

This program prepares the student to accept paraprofessional level positions with many human service agencies both within Salem and throughout the State of Oregon.

Applicants must meet the admission criteria for the college and the Mental Health Technology program.

Associate in Arts Degree: Required 104 term units.

Mental Health Technology Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		General Psychology	Psy 201	3
3		General Sociology	Soc 204	3
3		English Composition	Wr 111	3
3		Personal Health	He 250	3
1		Health Occupations Overview	5.700	1
3		Mental Health Technology I	5.436	3
0	9	Practicum Experience	5.442	3
Term 2				
3		General Psychology	Psy 202	3
3		Sociology—Current Social Problems	Soc 205	3
3		English Composition	Wr 112	3
3		Growth & Development	5.524	3
3		Mental Health Technology II	5.437	3
0	9	Practicum Experience	5.443	3
Term 3				
3		General Psychology	Psy 203	3
3	3	General Biology	Bi 101	4
3		English Composition	Wr 113	3
3		*Elective		3
3		Mental Health Technology III	5.438	3
0	9	Practicum Experience	5.444	3

***Electives**

Select 6 credit hours from the following choices:

Anthropology	Anthro 207	3
Law Enforcement & Society	LE 111, 112, 113	3
Business & Public Administration	2.502	3
Intro. to Systems & Procedures	6.944	3
Homemaking	7.100	3
Consumer Economics	1.525	3
World Population		3

Select the additional 6 credit hours from the above or following choices:

American Government	PS 100	4
Literature	Eng 104	3
Chemistry	Ch 104	5
Intermediate Algebra	Mth 95	4
College Algebra	Mth 101	4
Employer-Employee Relations	4.500	3
Mathematics	4.200	3
Basic Sciences for Health Occ.	5.601	4
Finance, Contracts & Law	2.340	3
History of Western Civ.	Hst 101	3
History of U. S.	Hst 201	3

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		Elective		3
0	24	Practicum Experience	5.445	8
3		Mental Health Technology IV	5.439	3
Term 2				
3	3	Human Anatomy & Physiology	5.722	4
3		Elective		3
3		Gerontology	5.448	3
3		Mental Health Technology V	5.440	3
0	12	Practicum Experience	5.446	4
Term 3				
4		State & Local Government	PS 203	4
3		Sociology—The Family & Society	Soc 206	3
3		Elective		3
3		Mental Health Technology VI	5.441	3
0	12	Practicum Experience	5.447	4

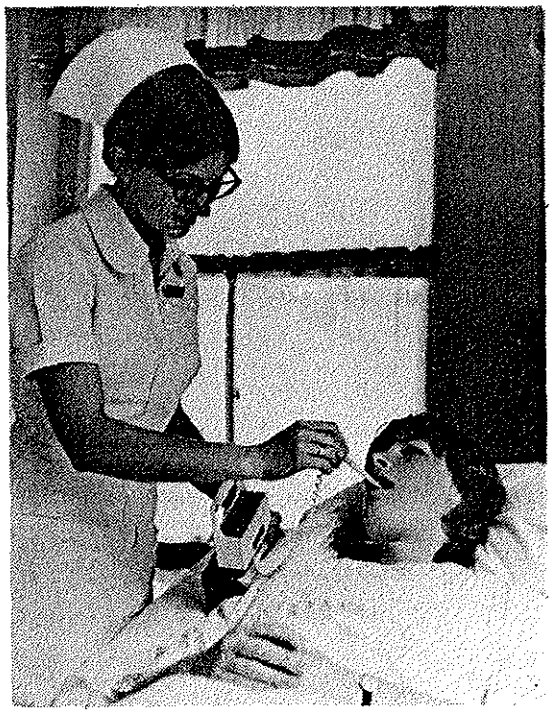
SHORT-TERM NURSING ASSISTANT PROGRAM

The Nursing Assistant program is a term (three-month) course to prepare the individual for aide positions in nursing homes, extended care facilities, and hospitals.

Students may arrange by consent of instructor for preparation in Home Health Agencies to qualify for certification as Home Health Aides.

The program is open to male and female applicants. Age is open with evaluation based on evidence of maturity and potential ability to accomplish the expected objectives. The optimum age range is from 20 to 50 years. Satisfactory health is essential for working in close contact with patients; therefore, a statement by a licensed physician as to fitness based on a physical examination, is required for admission.

Upon satisfactory completion of the program requirements, the student earns a Basic Certificate.



PRACTICAL NURSING

The practical nurse is a person prepared in an approved education program and is qualified for nursing practice by licensure of a state board of nursing. She participates in direct patient care as a nursing team member independently functioning in simple, relatively stable nursing situations and is an assistant to the registered nurse and/or licensed physican. The adequately prepared and properly utilized practical nurse contributes immeasurably to quality of patient care.

The Practical Nursing curriculum is an occupational preparatory program. It prepares selected people for a career in practical nursing, helping fulfill the need of health services in Oregon. It also prepares the student for examination given by the Oregon State Board of Nursing for licensing practical nurses.

The one-year curriculum is based on principles of education and organized around the nurses' defined functions. Subjects included are practical nursing, basic sciences, and communication skills. Clinical laboratory experience is provided in hospitals and health agencies in the community. Nursing faculty are responsible for planning and selecting student learning. The nursing courses must be taken in sequence and a minimum grade of C is required to continue the sequence. Any exception must be approved by the department chairman.

Applicants for the practical nursing program must be at least 17 years of age, graduate of an accredited high school or the equivalent as determined by test, in good health as determined by examination, and have suitable personal traits and character.

The Certificate of Completion is awarded to those individuals who have completed the requirements outlined in the general information section of this catalog.

Practical Nursing Curriculum

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
1		Health Occupations Overview	5.700	1
4	12	Practical Nursing	5.520	8
3		Communication Skills	1.101	3
3		Human Anatomy and Physiology	5.608	3
3	3	Basic Sciences for Health Occupations	5.601	4
Term 2				
6	24	Practical Nursing	5.521	14
3		Growth and Development	5.524	3
Term 3				
6	24	Practical Nursing	5.522	14
2		Trends in Nursing	5.523	2

Legend: 1 hour of theory = 1 term unit or 1 credit hour
3 hours of laboratory = 1 term unit or 1 credit hour

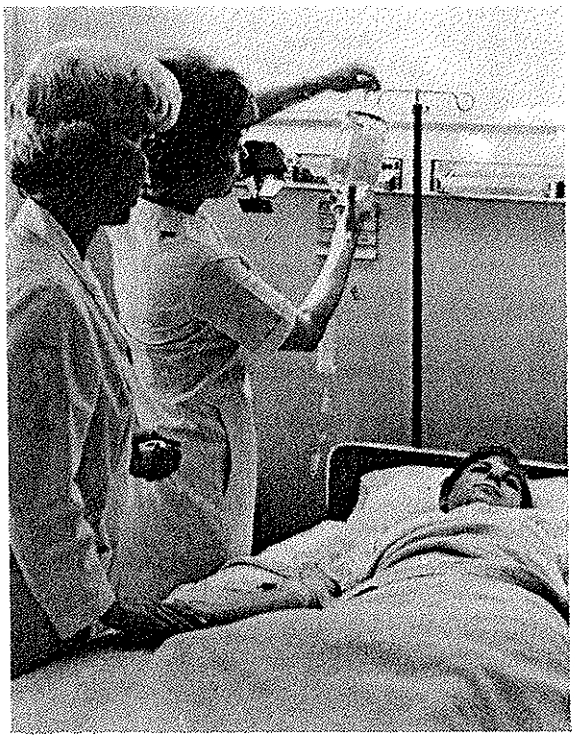
TECHNICAL NURSING

The Technical Nursing program prepares selected students for the technical nurse roles as a beginning staff nurse in hospitals and other health agencies. The graduate is awarded an Associate Degree in Nursing and is eligible to take the licensure examination for becoming a registered nurse in the State of Oregon.

The Technical Nursing program offers preparation for nursing within the framework of general education. The selected content in general and nursing courses is based upon fundamental principles of the humanities and on the social, natural, and health sciences. Nursing courses must be taken in sequence, and a minimum grade of C is required in each nursing course to continue the sequence. Any change in sequence must be approved by the department chairman. Learning experiences in the appropriate clinical laboratories are planned as an integral part of the nursing courses for students to participate in patient-family nursing situations.

Applicants must meet the admission criteria for the Technical Nursing program and have a high school grade average of 2.0 or above.

Associate in Science Degree: Required 97 term units.



Technical Nursing Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
4	12	Nursing I, II or III	5.701, 2 or 3	8
1		Health Occupation Overview	5.700	1
3	3	Basic Science Principles	5.721	4
3		General Psychology	Psy 201	3
3		*English Composition	Wr 111	3
Term 2				
4	12	Nursing I, II or III	5.701, 2 or 3	8
3	3	Human Anatomy & Physiology	5.722	4
3		General Psychology	Psy 202	3
3		*English Composition	Wr 112	3
Term 3				
4	12	Nursing I, II, or III	5.701, 2 or 3	8
3	3	Microbiology	5.723	4
3		General Psychology	Psy 203	3

SECOND YEAR

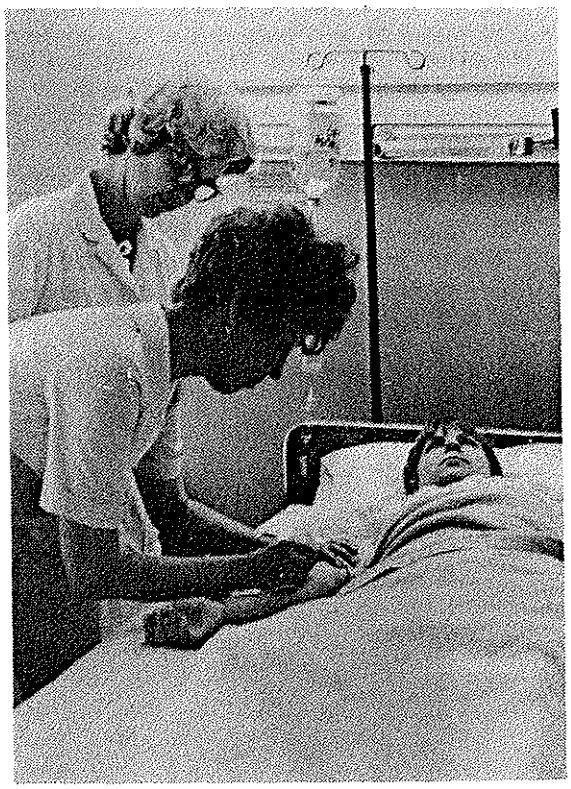
Term 4				
4	15	Nursing IV or V	5.704, or 5	9
3		Fundamentals of Speech	Sp 111	3
3		Group Process	5.730	3
Term 5				
4	15	Nursing IV or V	5.704 or 5	9
3		†Elective		3
3		‡Elective		3
Term 6				
4	16	Nursing VI	5.706	9
3		†Elective		3
3		Nursing VII	5.720	3

Electives:

* English Comp. Wr 111, 112 . . . or may substitute literature course for 3 term units of either English composition requirement.

† 6 hours—Political science or 3 hours political science and 3 hours economics.

‡ 3 hours—Sociology or anthropology.



Machine-Mechanical Technology

MACHINE SHOP TECHNICIAN

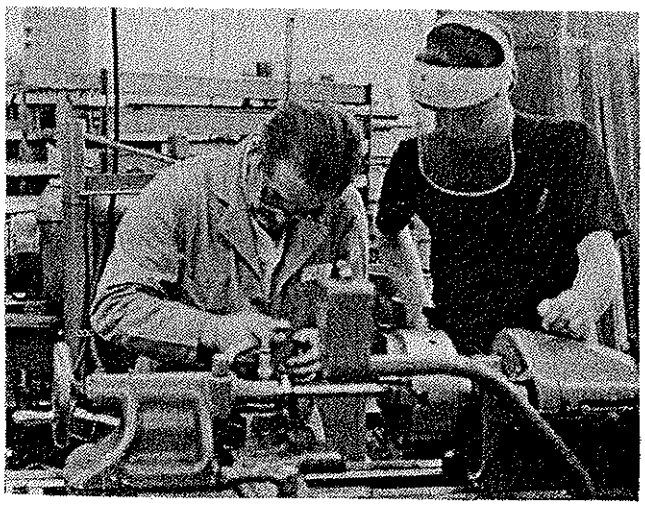
This curriculum provides required technical knowledge and skills for machine shop and related occupations. It includes a background in manufacturing materials, processes, and systems with drafting, blueprint reading, and shop sketching for effective participation in the industry. Written and oral communications, along with other general education subjects, are included 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 requirements in this program, the student is awarded an Associate in Science Degree in Machine Shop Technology.

A Machine Shop Technician sets up and operates drill presses, engine and turret lathes, milling machines, surface, cylindrical and tool grinders. He works from blueprints or sketches to produce specified items. This may require handling related bench and layout operations, jigs, fixtures, patterns or automated control equipment.

Job opportunities for graduates of this program are available in manufacturing, job shops, specialty, general machine or fabrication shops, or in maintenance departments of large manufacturing or processing plants.

Associate in Science Degree: Required 100 term units.



Machine Shop Technician Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
2	2	Mathematics	4.200	3
3		Communication Skills	1.101	3
3		Introduction to Psychology	1.606	3
	4	Drafting	4.101	2
2	3	Machine Tool Processes	4.802	3
1		Shop Safety	4.253	1
2	4	Industrial Materials and Processes	4.170	3
Term 2				
2	2	Mathematics	4.202	3
3	2	Practical Physics	4.300	4
	4	Drafting	4.105	2
2	3	Machine Tool Processes	4.804	3
1	3	Welding	4.150	2
Term 3				
2	2	Mathematics	4.204	3
3		Communication Skills	1.104	3
2	3	Machine Tool Processes	4.806	3
3	2	Practical Physics	4.302	4
2	3	Blueprint Reading and Layout	4.810	3

SECOND YEAR

Term 4				
3	3	Mechanical Systems	4.171	4
3	4	Power Systems	4.172	4
3		Machine Shop Problems	4.820	3
3	6	Machine Shop Practice	4.841	5
3		General Education Elective		3
Term 5				
2	3	Hydraulic&Pneumatic Systems	4.173	3
2	4	Metal Fabrication & Finishing	4.174	3
2	4	Advance Lathe Practices	4.833	3
2	4	Advance Milling Machine Practices	4.837	3
3		General Education Elective		3
Term 6				
2		Machine Shop Automation	4.824	2
3	12	Job Machining Practices	4.845	7
2	4	Tool and Fixture Design and Application	4.847	
3		Employer-Employee Relations	4.500	3
3		General Education Elective		3

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

MECHANICAL ENGINEERING TECHNOLOGY

This curriculum provides depths of understanding in technical requirements of occupations in modern mechanical design and production. The program provides the educational background necessary for many functions in such jobs as: design draftsman, tool designer, research assistant, or engineering assistant. The curriculum is designed to provide a broad technical competence needed for these jobs rather than the specific skills or techniques required for a single skill occupation. The instruction centers around occupational elements that normally cannot be obtained through experience alone—elements such as physical metallurgy, materials, and processes and principles of machine design. The program of study is designed and arranged to provide the student with an understanding of the materials and processes commonly used in the technology, extensive knowledge of a field of specialization with an understanding of the engineering and scientific activities that distinguish the field, and a facility with mathematics and proficiency in the application of physical science processes that is pertinent to the individual's field of technology.

The mechanical engineering graduate is often an essential member of a technical team composed of engineers, scientists, and skilled craftsmen. As a member of this team the technician contributes to innovation, research, development, design, and production that is vital to industry and national welfare.

The curriculum includes instruction in application of established scientific and engineering knowledge in support of industrial objectives. Emphasis is placed on developing an ability to apply knowledge to practical problems.

The graduate may enter the field of manufacturing, experimental shops, and development labs, performing such tasks as redesigning tools for efficiency, making cutting tools, jigs, and special fixtures.

Graduating technicians trained in this technology may assist engineers in design and development work by making free hand sketches, rough layouts of machinery and other equipment, using engineering data and specifications. They help in determining whether a proposed design change is practical and how much it will cost to produce. They may be called upon to apply their knowledge of elementary mechanical engineering principles to solve particular design problems such as those involving tolerances, stresses, strain, friction, and vibration.

Upon satisfactory completion of the requirements in the Mechanical Engineering Technology program, the student is awarded an Associate in Science Degree, signifying that the student is prepared to effectively function and advance in the many job areas of the technology.

Examples of opportunities are:

Junior Mechanical Engineer	Junior Engineering (Drafting)
Production Technician (Planning-Control)	Safety Technician
Metallurgy Technician	Tool, Jig, and Fixture Technician
Technical Writer	Instrumentation Technician
Method Analyst	Production Inspector
Process Technician	Time Study Technician

Associate in Science Degree: Required 104 term units.

Mechanical Engineering Technician Curriculum

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
3	3	Mechanisms	6.612	4
3	2	Electricity	6.208	4
3		Introduction to Psychology	1.606	3
2	3	Applied Mechanics	6.111	3
2	3	Strength of Materials	6.128	3
Term 5				
2	2	Hydraulics	6.112	3
2	3	Industrial Instrumentation	6.253	3
3	2	Machine Design	4.603	4
2	3	Applied Thermodynamics	6.615	3
3		General Education Elective		3
Term 6				
2	2	Applied Fluid Power	6.117	3
2	6	Design Problems	4.605	4
2	3	Industrial Instrumentation	6.254	3
2	3	Applied Heat Power	6.616	3
3		General Education Elective		3

WELDING

The courses in the Welding program are designed for skill development in varied welding processes and to provide the necessary knowledge and information required in welding occupations.

This one-year program provides laboratory time for developing and practicing welding skills.

After satisfactory completion of the welding program, the student is awarded a Certificate of Completion.

An opportunity is provided for certification in arc welding by the Oregon State Bureau of Labor. An extra fee for this test is determined by the number of students involved and the type of test.

Job opportunities for the graduate are found in job shops, specialty shops, production, and maintenance shops.

Examples of job opportunities are:

Oxygen Cutter	Welding Helper
Arc Cutter	Arc Helper
Oxy-acetylene Welder	Pipeline Welder

Welding Curriculum

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
2	9	Basic Arc Welding	4.240	5
2	6	Basic Oxy-acetylene Welding	4.161	4
1	3	Blueprint Reading & Sketching	4.244	2
2	2	Shop Arithmetic	4.246	3
1	0	Shop Safety	4.253	1
0	2	Oxy-acetylene Cutting	4.242	1
Term 2				
2	12	Intermediate Arc Welding	4.241	6
2	3	Layout Practices	4.245	3
1	4	Basic MIG Welding	4.250	2
1	3	Basic TIG Welding	4.251	2
2	0	Welding Metallurgy I	4.247	2
Term 3				
1	6	Advanced MIG Welding	4.252	3
1	6	Advanced Arc Welding	4.166	3
2	12	Weld Shop Problems	4.249	6
2	0	Welding Metallurgy II	4.248	2

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

WELDING & FABRICATION TECHNICIAN

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.

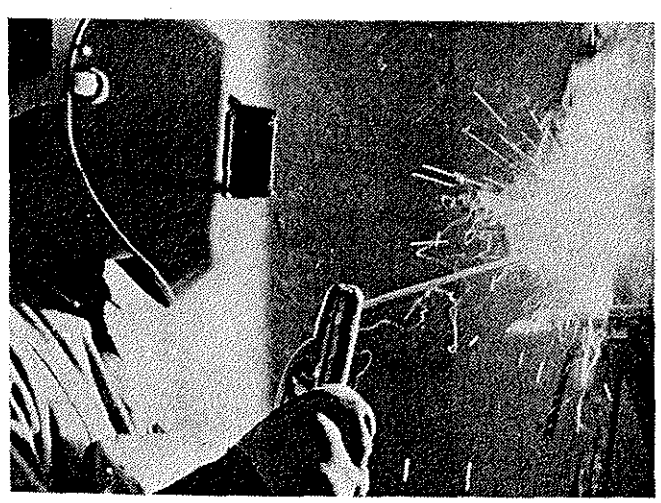
Upon satisfactory completion of this program, the student is awarded an Associate in Science Degree in Welding and Fabrication.

A Welding and Fabrication Technician is skilled in the use of oxy-acetylene welding and cutting equipment, manual arc, tungsten inert gas, and metallic inert gas processes. He 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 of Oregon, Bureau of Labor, Division of Boiler Inspection. An extra fee for this test is determined by the number of students involved and the type of test.

Job opportunities for graduates are available in manufacturing, job shops, specialty welding or fabrication shops, construction, and maintenance departments of large plants. There are opportunities also in sales of materials and equipment or quality control and development.

Associate in Science Degree: Required 105 term units.



Welding and Fabrication Technician Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
2	6	Electric Arc Welding	4.160	4
2	3	Blueprint Reading & Sketching	4.244	3
2	3	Machine Tool Processes	4.802	3
2	2	Mathematics	4.200	3
3		Communications Skills	1.101	3
	4	Drafting	4.101	2
1		Shop Safety	4.253	1
Term 2				
2	6	Basic Oxy-acetylene Welding	4.161	4
3		Introduction to Psychology	1.606	3
2	2	Mathematics	4.202	3
3		Communication Skills	1.104	3
2	3	Fabrication Practices I	4.155	3
3	2	Practical Physics	4.300	4
Term 3				
1	4	Basic MIG Welding	4.250	2
1	3	Basic TIG Welding	4.251	2
2	3	Heat Treatment of Steel	4.849	3
2	2	Mathematics	4.204	3
3	2	Practical Physics	4.302	4
3		Employer-Employee Relations	4.500	3
2	3	Fabrication Practices II	4.156	3

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
2	9	Electric Arc Welding	4.162	5
	4	Oxy-acetylene Welding	4.163	2
2	3	Blueprint Reading for Construction	4.159	3
1	4	Fabrication Shop Problems	4.168	3
3		Elements of Metallurgy	6.600	3
Term 5				
1	4	Fabrication Practices III	4.157	3
	8	Fabrication Problems	4.169	3
1	6	Advanced MIG Welding	4.252	3
2	3	Machine Tool Processes	4.804	3
3		General Education Elective		3
Term 6				
1	9	Welding for Certification	4.167	4
2	6	Fabrication Practices IV	4.158	4
1	6	Production MIG Welding	4.165	3
1	2	Shop Projects	4.254	2
3		General Education Elective		3

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

WELL DRILLING TECHNICIAN

Chemeketa's unique well drilling program is a preparation for an outdoor mechanical occupation.

The well drilling technician sets up and operates earth drilling machines. He hoists and positions tubular casing over the hole, lowers the drill stem into the casing, manipulates the drill, removes samples of subterrain, repairs and maintains the drilling and accessory equipment. The student receives a background in geology, ground water location and quality, pumping and drilling techniques, and equipment.

Job opportunities for the graduate of this program are found in job shops, specialty shops, test holes, and earth sampling for subterranean water resources, sales, installation and repair of pumping equipment, sales engineering for equipment manufacturers, inspection and quality control for state or regional ground water resources.

Associate in Science Degree: Required 106 term units.

Well Drilling Technician Curriculum

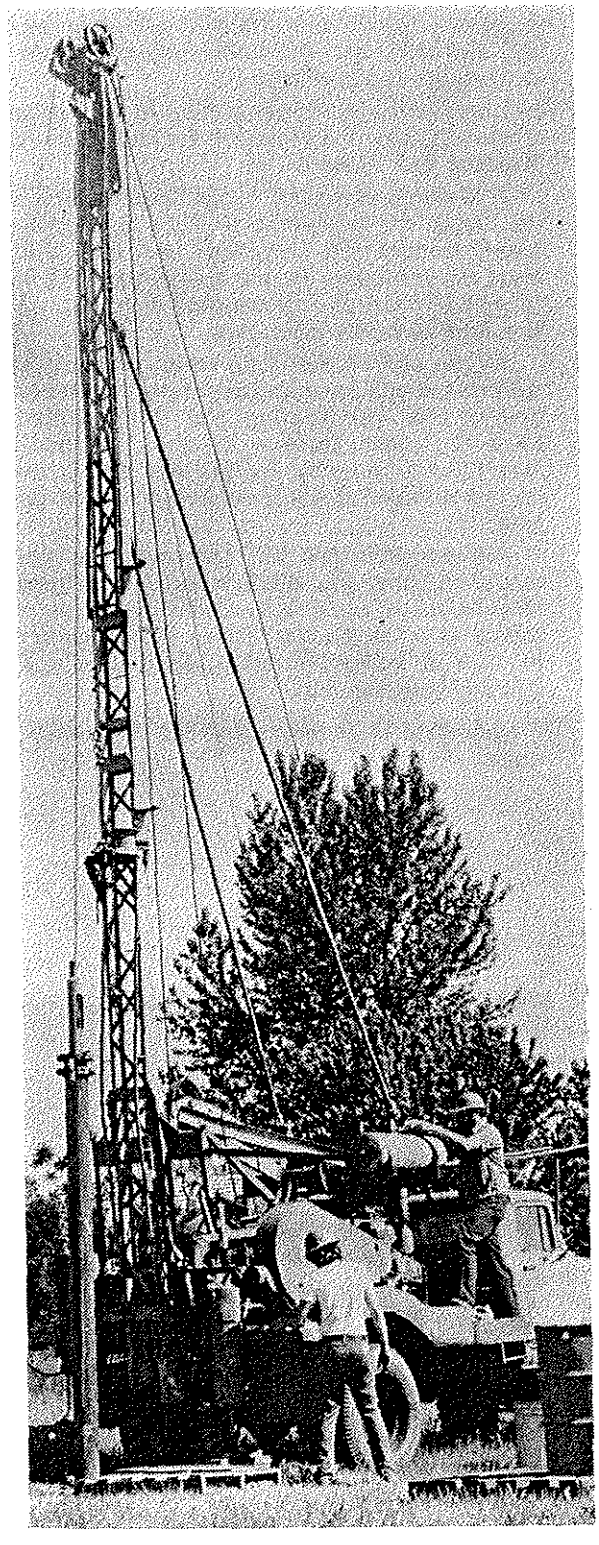
FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
2	2	Mathematics	4.200	3
3		Communication Skills	1.101	3
	4	Drafting	4.101	2
3	2	Elementary Geology	4.305	4
1	3	Welding	4.150	2
3	2	Drilling Equipment, Tools and Terminology	4.290	4
Term 2				
2	2	Mathematics	4.202	3
3		Communication Skills	1.104	3
3	2	Practical Physics	4.302	4
2	3	Machine Tool Processes	4.802	3
2	6	Intermediate Arc Welding	4.154	4
1		Shop Safety	4.253	1
Term 3				
2	3	Machine Tool Processes	4.804	3
2	6	Welding for Certification	4.166	4
2	4	Industrial Materials and Processes	4.170	3
3	4	Drilling Setups and Operations	4.292	4
3		General Education Elective		3

SECOND YEAR

Term 4				
3		Business Economics	1.524	3
3		State Drilling Standards and Recordkeeping	4.293	3
2	2	Topographic Map Interpretation	4.130	3
3	4	Power Systems	4.172	4
2	3	Hydraulic and Pneumatic Systems	4.173	3
2	3	Blueprint Reading and Layout	4.810	3
Term 5				
3	4	Mechanical Systems	4.171	4
3	4	Drilling Machine Maintenance and Repair	4.296	4
2	4	Engine Theory and Maintenance	4.291	3
3		Finance, Contracts and the Law	2.340	3
2	3	Heat Treatment of Steel	4.849	3
Term 6				
3		Psychology of Human Relations	1.608	3
3	4	Small Pump Installation	4.295	4
3	2	Hydrology for Drillers	4.294	4
3		Special Drilling Problems	4.297	3
3		General Education Elective		3

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



Public Services

FIRE PROTECTION

Fire Protection Technology is a curriculum designed for young persons preparing for career employment in fire departments, insurance industries, industrial fire safety, and other public and private fire protection occupations.

Guidelines set forth in the "Fire Science Curriculum Guide" published by the Oregon Board of Education have been followed in developing this program, thus providing for compatibility with curriculums offered by other community colleges in Oregon.

Eligibility for enrollment is based upon possession of a high school diploma or equivalency certificate plus proof of physical, emotional, intellectual, moral, and citizenship standards suitable for employment in fire protection. Background check is required including fingerprinting.

Upon satisfactory completion of program requirements, the student is awarded an Associate in Science Degree.

Associate in Science Degree: Required 94 term units.

Fire Protection Technician Curriculum

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		Introduction to Psychology	1.606	3
2	2	Mathematics	4.200	3
3		Communication Skills	1.101	3
3		Introduction to Fire Protection	5.100	3
	9	Work Experience	5.122	3
Term 2				
2	2	Mathematics	4.202	3
3		Communications Skills	1.104	3
3	2	Elementary Science for Firefighters	5.103	4
3	2	Fire Service Hydraulics	5.104	4
	9	Work Experience	5.123	3
Term 3				
3	2	Fire Science	6.995	4
2	2	Fire Pump Construction and Operations	5.105	3
3	2	Rescue and Emergency Care	5.120	3
	9	Work Experience	5.124	3
3		General Education Elective		3

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
3	2	Fire Science	6.996	4
3		Blueprint Reading for Firemen	5.119	3
3		Fundamentals of Fire Prevention	5.101	3
3		Hazardous Materials	5.108	3
		Technical Electives		6
Term 5				
3		Hazardous Materials	5.109	3
		Technical Electives		9
3		General Education Elective		3
Term 6				
3		Report Writing	1.106	3
		Technical Electives		12

Technical Electives

3	2	Natural Cover Fire Protection	1.151	4
	9	Work Experience	5.125	3
3		Fire Protection Systems and Extinguishers	5.106	3
3		Fire Department Organization and Management	5.112	3
	9	Work Experience	5.126	3
3	2	Fire Investigation	5.107	3
3		Fire Codes and Ordinances	5.116	3
3		Firefighting Tactics and Strategy	5.113	3
3		Water Distribution Systems	5.117	3
	9	Work Experience	5.127	3
3		Fire Training Programs and Techniques	5.110	3
3		Fire Insurance Principles and Grading Schedules	5.111	3

LAW ENFORCEMENT

This course of study offers an occupational preparatory curriculum designed for young men and women preparing for career employment in police departments, sheriff's offices, state police, and law enforcement-related positions. It includes the terminal program fully transferable to Mt. Angel College, a four-year degree-granting institution, and to other private higher education institutions. In addition, through transfer courses, it enables the student to continue his education beyond the two-year Associate Degree level at the state four-year institutions. It also provides oportunities for those already engaged in law enforcement to obtain educational advancement for improvement of competency and a broader understanding of the role of law enforcement in today's society. It has been developed in cooperation with Oregon State Department of Education and the Oregon State Board of Police Standards and Training.

Eligibility for the program is based upon possession of a high school diploma or equivalency certificate, in addition to proof of physical, emotional, intellectual, moral, citizenship standards suitable for law enforcement employment and approval for acceptance by the department head.

Fingerprinting and limited investigation are required. Students may participate on a full- or part-time basis.

Upon satisfactory completion of program requirements, the student is awarded an Associate in Science Degree.

Associate in Science Degree: Required 96 term units.

Law Enforcement Curriculum

Terminal Program 96 Units

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		Communication Skills	1.101	3
3		Introduction to Psychology	1.606	3
3		Introduction to Law Enforcement	5.200	3
	4	Laboratory Science I	5.225	2
3		Crime and Delinquency I	5.201	3
3		Constitutional Government	1.601	3
Term 2				
3		Communication Skills	1.104	3
3		Sociology	1.310	3
3		Administration of Justice	5.203	3
3		Crime and Delinquency II	5.202	3
3		Law Enforcement Information Systems	5.209	3
3		Psychology of Human Relations	1.608	3
Term 3				
3		Police Report Writing	5.223	3
3		Psychology for the Police Officer	5.217	3
3		Criminal Investigations I	5.206	3
3		American Institutions	1.600	3
3		Community Police Relations	5.215	3
		(SELECT ONE)		
3		State and Local Government	5.221	
2		Jail Procedures	5.204	2

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
2	2	Public Speaking	1.610	3
3		Criminal Investigations II	5.207	3
3		Criminal Law I	5.211	3
3		Traffic and Patrol	5.210	3
	3	Laboratory Science II	5.226	1
3		Problems of Physical Evidence	5.220	3
Term 5				
3		Criminal Law II	5.515	3
3		Constitutional Law	5.213	3
3		Police Adminstration	5.216	3
2		Juvenile Procedures	5.218	2
2		Criminal Investigations—Sex	5.288	2
Term 6				
2		Motor Vehicle Law	5.219	2
3		Criminal Investigations III	5.208	3
2	3	Moot Court	5.214	3
3		Criminal Law III	5.224	3
	3	Laboratory Science III	5.227	1
2	2	Mathematics	4.209	3

Transfer Program 101 Units

FIRST YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 1				
3		English Composition	Wr 111	3
3		General Psychology	Psy 201	3
3		Law Enforcement and Society	LE 111	3
	4	Laboratory Science I	5.225	2
3		Law Enforcement and Society	LE 112	3
4		American Governments: Concepts and Institutions	PS 100	4
Term 2				
3		English Composition	Wr 112	3
3		Sociology	Soc 204	3
3		Law Enforcement and Society	LE 211	3
3		Law Enforcement and Society	LE 113	3
3		Law Enforcement Information Systems	5.209	3
3		General Psychology	Psy 202	3
Term 3				
3		Police Report Writing	5.223	3
3		Psychology for the Police Officer	5.217	3
3		Criminal Investigations I	5.206	3
3		General Sociology	Soc 205	3
4		State and Local Governments	PS 203	4
2		Jail Procedures	5.204	2

SECOND YEAR

Class Hours	Lab Work	Course Title	Course No.	Term Units
Term 4				
2	2	Fundamentals of Speech	Sp 111	3
3		Criminal Investigations II	5.207	3
3		Criminal Law I	5.211	3
3		Traffic and Patrol	5.210	3
	3	Laboratory Science II	5.226	1
3		Problems of Physical Evidence	5.220	3
Term 5				
3		Criminal Law II	5.212	3
3		Constitutional Law	5.213	3
3		Police Administration	5.216	3
2		Juvenile Procedures	5.218	2
3		Personal Health	He 250	3
	3	Laboratory Science III	5.227	1
Term 6				
3		Criminal Investigations III	5.208	3
2	3	Moot Court	5.214	3
3		Criminal Law III	5.224	3
2		Motor Vehicle Law	5.219	3
4		College Algebra	Mth 101	4

ADULT LAW ENFORCEMENT CURRICULUM

Enrollment is restricted to full-time employees of law enforcement agencies and duly authorized reserves. A total of 90 term units is required to complete requirements for an Associate in Science Degree.

Requirements for Associate Degree

1. **General Education Courses** (total minimum 18 hours)
   - Communication Skills (or English Writing) — 6 hours
   - Psychology — 6 hours
   - Public Speaking — 3 hours
   - American Institutions (or Constitutional Government) — 3 hours
   - Total — 18 hours
2. **Occupational**—(L.E.)
   A minimum of 30 hours is required of occupational courses.
3. **Electives**
   Enough of either general education or occupational approved courses to bring the total number of credit hours up to 90 hours.

ADULT COURSES GIVEN OR SCHEDULED

Class Hours	Lab Work	Course Title	Course No.	Term Units
3		Community-Police Relations	9.301	3
3		Police Budget Matters	9.303	3
3		Crime and Delinquency I	9.307	3
3		Crime and Delinquency II	9.309	3
3		Police Report Writing	9.312	3
3		Criminal Investigations III Narcotics	9.311	3
3		Criminal Law I	9.304	3
3		Criminal Law II	9.306	3
3		Criminal Law III	9.308	3
3		Criminal Investigations	9.302	3
3		Criminal Investigations Homicides	9.310	3
3		Police Information Systems	9.323	3
3		Constitutional Law	9.317	3
3		Police Photography	9.322	3
3		Police Administration	9.316	3
3		Problems of Physical Evidence	9.313	3
3		Police-Community Liaison	9.324	3
3		Introduction to Law Enforcement	9.298	3
3		Juvenile Procedures	9.320	3
3		Police Personnel Management	9.327	3
3		Criminal Investigations—Burglary	9.328	3
3		Criminal Investigations—Sex	9.329	3
3		Psychology for the Law Enforcement Officer	9.325	3
3		Mathematics	4.210	3
*3		Law Enforcement and Society, LE 111, 112, 113		3

* This is a special 3 hour block limited to in-service and reserve officers.

PRE-TECHNICAL PROGRAM

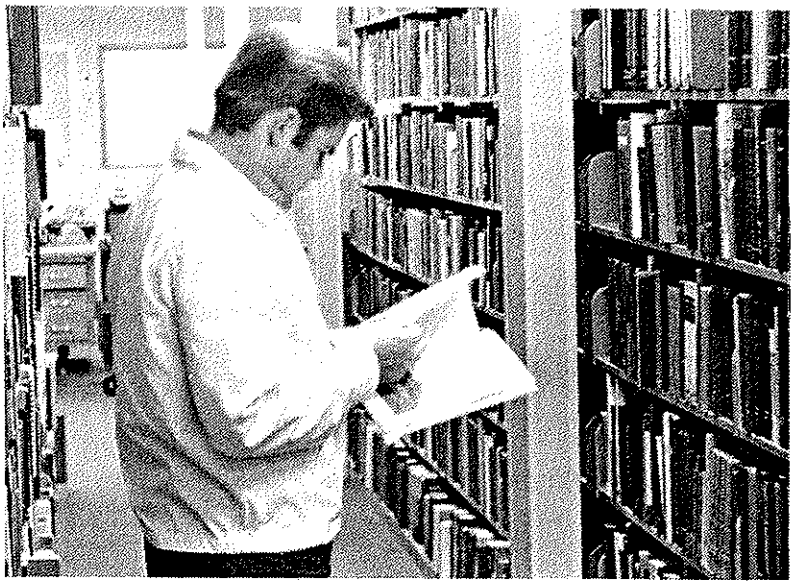
This is a two-year program designed to allow the student a chance to develop a usable background of subject matter which might assure his success on entry into a technical program.

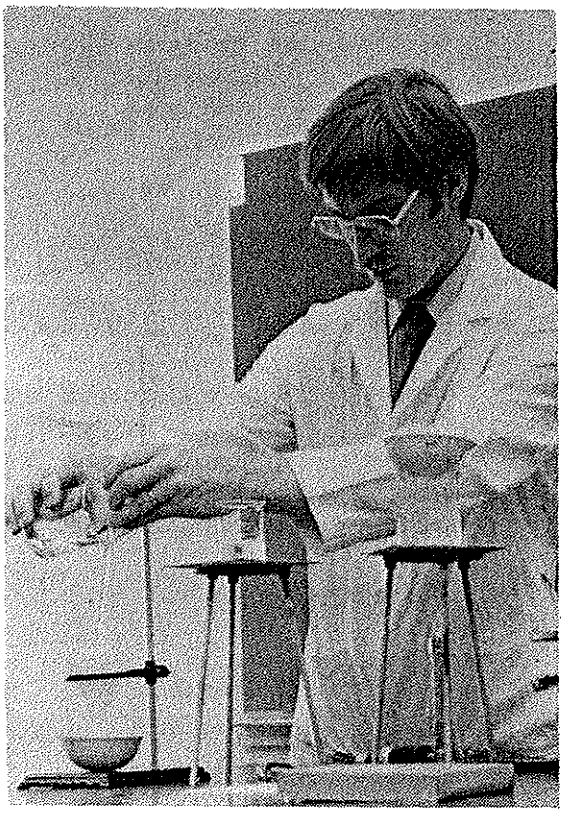
The program can be tailored to the needs of the individual student, exposing him to the academic, as well as the occupational areas which need strengthening, are of interest to him and are in keeping with his occupational goals.

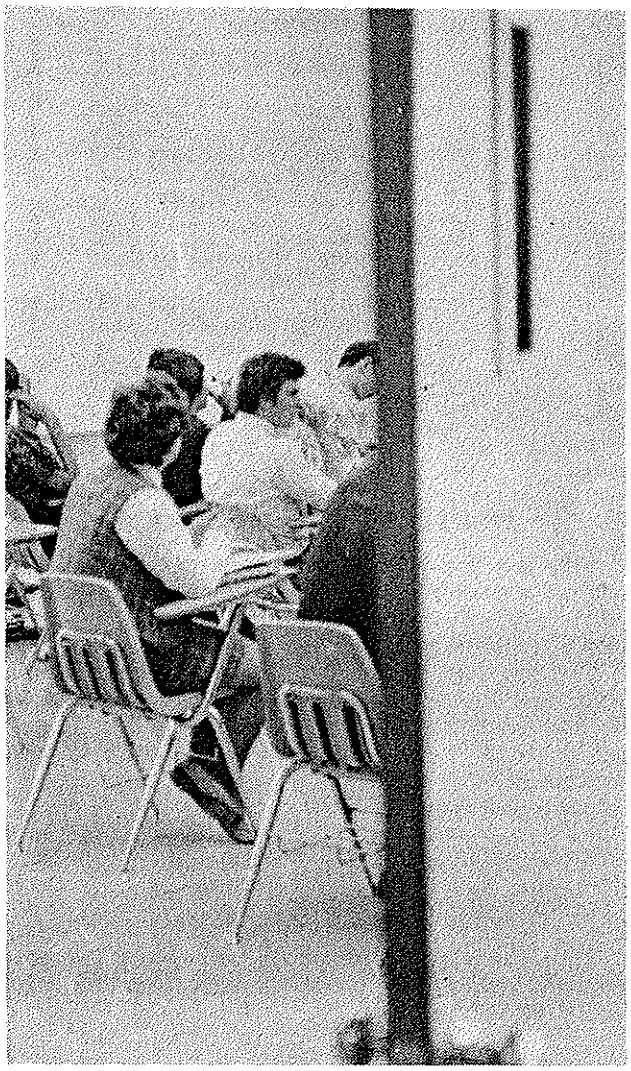
Suggested Program:

Communications	9 term units
Mathematics	9 term units
Science	8 term units
Technical Electives	20 term units

Technical elective selections must meet the prerequisite policy, and be coordinated with the individual departments.







Lower Division College Transfer

The purposes of the Chemeketa Community College lower division transfer courses are twofold:

They may be incorporated into the college's technical-vocational programs providing the student flexibility in later educational endeavors.

The lower division courses also may be taken independently by 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 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 four-year colleges and universities. However, the college is not required to offer every course listed. Some courses listed in this section will be offered only if adequate staff and facilities are available.

Students taking lower division transfer courses may qualify for the Associate in Arts Degree. See page 8.

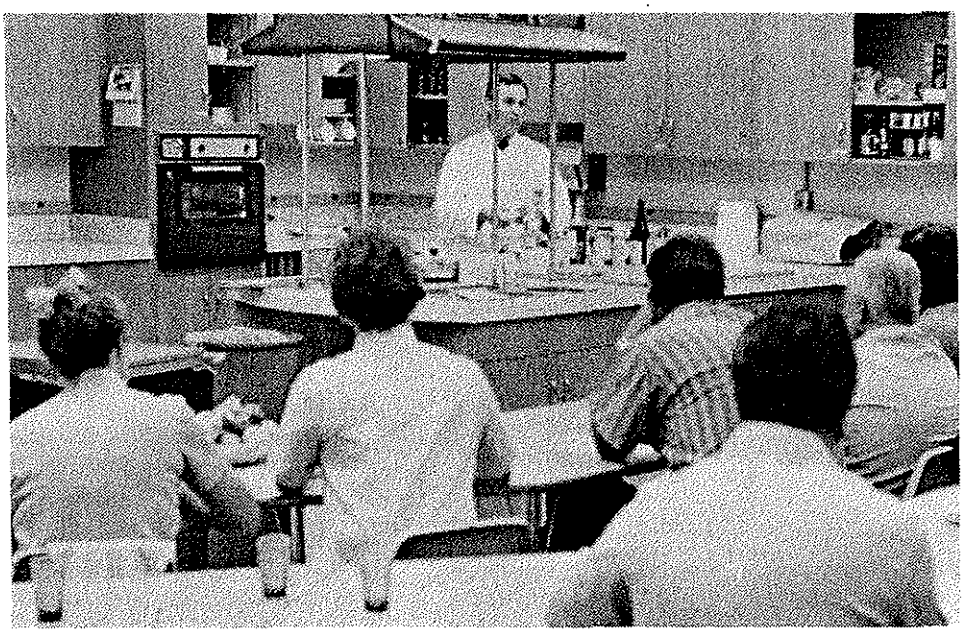
A manual titled *Transfer Curricula*, published by the Oregon State System of Higher Education, lists all transfer program requirements. The manual is available through Chemeketa counselors and advisors, in the Chemeketa Community College Library and in the office of many high school counselors.

College transfer students should contact the college or university to which applications 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 course-work program.

Students should refer to the course descriptions for specific contents of courses. Some courses listed may not be offered.

CCC Transfer Program	Four-Year Institution
Agriculture—	Oregon State University
Anthropology—	University of Oregon
Applied Science—	Portland State University
Architecture and Interior Architecture—	University of Oregon
Art—	University of Oregon Oregon State University Portland State University
Applied Design—	Southern Oregon College
Art Education—	Portland State University Oregon State University University of Oregon Southern Oregon College Ore. College of Education Eastern Oregon College
Art History—	University of Oregon
Biology—	University of Oregon Portland State University Eastern Oregon College Southern Oregon College
Botany, Entomology, Microbiology, Zoology, Biology (General Science)—	Oregon State University
Business Administration—	University of Oregon Oregon State University Portland State University Southern Oregon College
Business Education—	University of Oregon Oregon State University Portland State University Southern Oregon College Eastern Oregon College
General Studies—Business—	Eastern Oregon College
Chemistry—	University of Oregon Oregon State University Portland State University Southern Oregon College
Community Service and Public Affairs—	University of Oregon
Dentistry (Preprofessional Program)—	Portland State University Oregon State University University of Oregon
Economics—	University of Oregon Oregon State University Portland State University
Education (Elementary)—	Oregon State University University of Oregon Portland State University Eastern Oregon College Southern Oregon College Ore. College of Education
Education (Secondary)—	Oregon State University University of Oregon Portland State University Eastern Oregon College Ore. College of Education Southern Oregon College
Engineering—	Oregon State University
English—	University of Oregon Oregon State University Portland State University Eastern Oregon College Southern Oregon College Ore. College of Education
Foreign Languages—	University of Oregon Portland State University Oregon State University
Forestry—	Oregon State University
General Arts and Letters—	University of Oregon
General Studies in Arts and Letters—	Portland State University
General Studies in Humanities—	Eastern Oregon College Ore. College of Education Oregon State University Southern Oregon College
General Science—	University of Oregon Oregon State University
General Studies in Science—	Portland State University Eastern Oregon College Ore. College of Education Southern Oregon College
General Social Science—	Eastern Oregon College Ore. College of Education Oregon State University Portland State University Southern Oregon College University of Oregon
Geography—	University of Oregon Portland State University Oregon State University
Geology—	University of Oregon Oregon State University Portland State University
History—	University of Oregon Oregon State University Portland State University Eastern Oregon College Southern Oregon College
Home Economics—	Oregon State University
Journalism—	University of Oregon
Landscape Architecture—	University of Oregon
Law (Preprofessional Program)—	University of Oregon
Law Enforcement—	Portland State University Southern Oregon College
Mathematics—	University of Oregon Oregon State University Portland State University Southern Oregon College
Medical Technology (Preprofessional Program)—	University of Oregon Oregon State University Portland State University Southern Oregon College Ore. College of Education Eastern Oregon College
Medicine (Preprofessional Program)—	Portland State University Oregon State University University of Oregon
Music—	University of Oregon Oregon State University Portland State University Southern Oregon College
Pharmacy (Preprofessional Program)—	Oregon State University
Philosophy—	University of Oregon Oregon State University Portland State University
Physical Education—	University of Oregon Oregon State University Ore. College of Education Southern Oregon College Eastern Oregon College Portland State University
Physics—	Oregon State University University of Oregon Portland State University Southern Oregon College
Political Science—	Oregon State University University of Oregon Portland State University
Psychology—	University of Oregon Oregon State University Portland State University
Recreation—	University of Oregon Oregon State University
Secretarial Science—	Oregon State University
Sociology—	University of Oregon Oregon State University Portland State University Southern Oregon College
Speech—	University of Oregon Oregon State University

Adult Community Education



Chemeketa Community College believes that education should not terminate but should continue and expand according to the needs and desires of an individual.

Chemeketa Community College Adult Community Education Department offers classes in the academic, cultural, vocational, business and home improvement areas for the enrichment of area residents.

Adult education classes are offered in many communities in the community 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.

Eligibility

To enroll in an adult education course, a person must be at least 16 years of age. If under 18 years of age he must receive special permission from his or her local high school district. For additional information, call the Adult Community Education Department.

Credit

Adult Education courses are grouped into three categories. They are:

Lower Division College Transfer—courses that may be transferred to a four-year institution.

Community College Credit (non-transferable)—courses that apply to a community college degree or certificate.

Non-credit (non-transferable)—special interest courses and hobby and recreation courses.

Registration

Registration takes place the first night of class. Payment of fees is requested at the time of registration. Each student must have his Social Security number at the time of registration.

Counselors are available at the main Chemeketa campus in Room 304 from 6 p.m. to 9 p.m. Monday through Thursday during the regular college year.

Counseling

The counseling staff is committed to help students explore opportunities available in working toward

their educational goals. Evening services include high school completion information, planning programs for part-time evening or full-time day programs, assisting in choosing lower division transfer classes; exploring occupational choice and training for advancement; or any student related concerns whether social, academic, or personal. Counselors are willing to assist whenever possible to make the student's experience at Chemeketa a more meaningful one.

Fees

All credit (lower division college transfer and community college credit) classes are scheduled on the basis of $9.00 per credit hour. All non-credit classes are scheduled on the basis of $ .50 per classroom hour of instruction. There may be additional fees for books, materials and supplies which are not covered by the tuition fee.

How To Get the Class You Want

The Adult Community Education Program offers certain regular classes each year, but is always willing and usually able to establish classes in any demand area. Classes are set up where the greatest number of people reside when a sufficient number are interested. Classes to meet group needs will be started anywhere in the district and at any time if an instructor and facilities are available.

Community Services

The Adult Community Education Department is available to clubs and organizations for assistance in locating guest speakers, films, and other special interest programs.

Contract Services

The Adult Community Education Department furnishes special programs and courses to business, industry, civic and social organizations on a contract basis. Contact the Adult Community Education Department for more information on this plan and train your employees or members according to your own special needs.

Adult High School

Chemeketa Community College offers a complete educational program leading to a high school diploma. The program consists of three separate areas.

Adult Basic Education

A program of free instruction for adults who have less than an eighth - grade education. Classes are offered both day and evening in various communities of the district.

General Education Development (GED)

A free program of instruction and examinations leading to a Certificate of Equivalency. Classes are offered both day and evening in various communities of the college district. Students must pay for textbooks and testing fees. This program is for those adults who do not have a high school diploma.

High School Completion

Two programs are offered for the adult who wishes to obtain his high school diploma.

(1) Part-time (Evening)
Instruction in high school mathematics, English, literature, social science and science is offered.

(2) Full-time—Concurrent credit
For the student who wishes to obtain his high school diploma and who plans to continue his education at the community college. He may obtain concurrent high school—community college credit for classes successfully completed.

Call the Adult Community Education office for further information and class locations.

Lower Division Transfer

Chemeketa Community College Adult Community Education Department offers courses transferable to four-year colleges and universities in many fields. These courses are offered in the evenings for the convenience of the part-time student.

Adult Supplementary Classes

Chemeketa Community College offers a variety of courses in many areas of instruction. Some classes may be taken for community college credit leading to a degree or a certificate and others may be taken on a non-credit basis. The following is a listing of the subject areas offered on a regular basis, with a sampling of the classes offered in the subject area.

Apprenticeship

This program offers an organized system for providing young people with the manipulative skills and technical or theoretical knowledge needed for competent performance in skilled occupations. Since apprentices learn the skills of the craftsman through on-the-job work experiences and the related information in the classroom, the program involves cooperation among schools, labor, and management. The minimum terms and conditions of apprenticeship are regulated by state and local statutes or agreements. This program is under the State of Oregon Bureau of Labor for licensed apprentices.

Banking

Principles of Bank Operations, Home Mortgage Lending, Bank Investments, Credit Administration, and Agricultural Financing. Banking courses are limited to banking employees only.

Business Education

Introduction to Bookkeeping, Accounting, Secretarial Accounting, Business Law, Techniques of Supervision, Creative Motivational Selling, Income Tax Counseling, Business English.

Creative Arts

Photography (basic, advanced, and color slide), Drawing, Calligraphy, Ceramics, Oil Painting.

Data Processing

Introduction to Data Processing, Computer Center Operations, Key Punch Operations, FORTRAN, COBOL.

Drafting

Introduction to Drafting, Drafting I, Architectural Drafting, Blueprint Reading, Topography and Mapping, Cam and Gear, Electrical, Sheet Metal.

Electronics

Basic AC Theory, Basic DC Theory, Transistor Theory, TV Repair and Servicing, Electric Motor Maintenance and Repair, Semi-conductor Devices and Circuits, Fundamentals of Sound.

Engineering

Practical Engineering Applications, Review of Surveying Fundamentals, Chain and Level Surveying, Transit and Stadia Surveying, Surveying Computations, Fundamentals of Soil Mechanics.

Farm Management

The Chemeketa Farm Management Program teaches a systematic process for farm families to plan the use of land, labor, and capital to achieve their goals. The basis of the program is farm financial record keeping and an analysis of these records. Students working with the instructor make an over-all evaluation of their own farm business and a detailed evaluation of each enterprise. The course continues for three years to permit families to develop management skills and carry them out in their farm business.

Hand-kept financial records are computer analyzed each year. From this computer evaluation, students learn to correct weaknesses and enhance the strengths of their operation. They learn how to invest land, labor, and capital to improve their returns.

General Interest

Marriage Preparation, Defensive Driving, Personal Estate Planning, Self-motivation, Creative Job Search Techniques.

Health Occupations

Nursing Team Leadership, Emergency Medical Technician Training, Nursing Mathematics, Human Anatomy and Physiology.

Home Economics

Sewing for Beginners, Personal Color Analysis and Wardrobe Planning, Sewing with Knit and Stretch Fabrics (basic, intermediate and advanced), Women's Tailoring, Men's Tailoring, Pattern Design, Pattern Fitting, Upholstery, Observing and Guiding Behavior, Concerns of Parenthood, Lingerie.

Industrial-Mechanical

Machine Tool Operations, Machine Tool Processes, Refrigeration, Blueprint Reading, Millwright-Maintenance Training, Heating Plant Operations, Building Construction for Fire Protection.

Insurance

Principles of Insurance, Modern Insurance Practices, Credit Life and Credit Health Insurance.

Language Arts

Conversational Spanish, German, French, Russian, Communication Skills, Sign Language, Lip Reading, Accelerated Reading, Effective Speaking, Esperanto, Creative Writing.

Law Enforcement

Psychology for Law Enforcement Officers, Constitutional Law, Criminal Investigations, Police Administration, Juvenile Procedures.

Mathematics

Technical Mathematics, Slide Rule Operations, Practical Mathematics, Nursing Mathematics, Introduction to Calculus.

Real Estate

Real Estate License Preparation, Basic Real Estate Preparation, Real Estate Practices, Real Estate Finance, Subdivision and Community Planning, Modern Trends in Real Estate, Real Estate Law, Fundamentals of Exchanging, Real Estate Office Procedures.

Secretarial Science

Typing, Shorthand, Shorthand Speedbuilding, Briefhand, Legal Secretary, Secretarial Procedures, Office Machines, Business Communications.

Social Science

Introduction to Psychology, Human Relations.

Welding

Basic Arc Welding, Advanced Arc Welding, MIG-TIG Welding, Preparation for Certification Welding, Basic Oxy-acetylene Welding, Advanced Oxy-acetylene Welding, Layout Practices for Metal Workers, Blueprint Reading for Welders.

Senior Citizen Golden Age Card

Senior Citizens 65 years of age or older who reside in the Chemeketa Community College District are eligible for the Senior Citizen Golden Age Card. Benefits of the Golden Age Card are: tuition free classes where there are enough paying students to justify holding the class, free admission to all campus activities such as art exhibits, film series, lecture series, athletic events, and use of the college library facilities.

To be eligible for the Golden Age Card, applicants must meet the following requirements:

1. A man must be 65 years of age or older; a woman must be at least 62 years of age.
2. The recipient must reside within the Chemeketa Community College District.

Course Descriptions

TRANSFER COURSE DESCRIPTIONS

HUMANITIES

Eng. 101, 102, 103. Survey of English Literature. 3 hours each.
Study of the principle works of English Literature based on reading selected to represent great writers, literary forms, and significant currents of thought. Provides both an introduction to literature and a background that will be useful in the study of other literature and other fields of cultural history.

Eng. 104, 105, 106. Introduction to Literature. 3 hrs. each.
Analysis of literature and ideas involving work in English and in translation.
Eng. 104: Fiction
Eng. 105: Drama
Eng. 106: Poetry

Eng. 201, 202, 203. Shakespeare. 3 hours each.
A study of the major plays of Shakespeare.

Eng. 253, 254, 255. Survey of American Literature. 3 hours each.
Analysis of American literature and ideas in America from its beginning to present day.
Prerequisite: Eng. 104, 105 and 106.

Sp. 111. Fundamentals of Speech. 3 hours.
Primary emphasis on adjustment to speaking situations, basic communication concepts, role of speaker, message construction, listening behavior, feedback in interviews, manuscript reading, and platform speaking.

Sp. 112. Fundamentals of Speech. 3 hours.
Primary emphasis on interpersonal communication, nonverbal communication, expository speaking, and projects in extempore speaking.
Prerequisite: *Sp. 111 or 2 years of high school speech.*

Sp. 113. Fundamentals of Speech. 3 hours.
Primary emphasis on persuasive speaking, argumentation, discussion, rhetoric, psychological theory of oral communication, audience motivation and language of speech.
Prerequisite: *Sp. 111 or Sp. 112.*

Sp. 229. Interpretation. 3 hours.
Analysis and presentation of printed material, emotional reactions that give color and interest, expressive vocal and bodily responses, pantomime, characterization and interpretative techniques.
Prerequisite: Sp. 111, Sp. 112, Sp. 113 or consent of instructor.

Wr. 111, 112, 113. English Composition. 3 hours each.
Examination of literature and ideas with the emphasis on expository writing.
Eng. 111: Fundamentals of writing.
Eng. 112: The Research Paper. Prerequisite: Eng. 111 or consent of instructor.
Eng. 113: Creativity and Style. Prerequisite: Eng. 111 or Eng. 112.

SCIENCE AND MATHEMATICS

Life Sciences

Bi. 101, 102, 103. General Biology. 4 hours each
Biological principles applied to plants and animals. 101-cell biology, 102-organismal biology, 103-populations and ecology. Consent of instructor required if taken out of sequence. May not be taken for credit if student has completed six or more hours in a college-level course in a biological science. Three lectures, one three-hour laboratory period.

Bi. 121, 122. Human Anatomy and Physiology. 4 hrs. each.
Structure and functions of the human body beginning with the single cell and continuing through tissues, organs and body systems. Three lectures, one three-hour laboratory period.

Zoo. 201, 202, 203. General Zoology. 4 hours each.

An introductory study of animal life dealing with the principles of animal biology. Includes comparative study of the morphology, anatomy, life history, physiology, development and ecology of both vertebrates and invertebrates.

For pharmacy, physical education, psychology, fish and game management students and others.

Physical Sciences

***Ch. 104, 105, 106. General Chemistry. 5, 4, 4 hours.**

An introduction to chemistry for students who have no previous chemistry. The manipulation of scientific quantities, basic concepts of atomic and molecular structure and its effect on the behavior or matter, and the laws of chemical change.

Prerequisite: Satisfactory background in high school algebra. 104, four lectures, one three-hour laboratory; 105, three lectures, one three-hour laboratory; 106 three lectures, one three-hour laboratory.

***Ch. 204, 205. General Chemistry. 5, 5 hours.**

Professional course for students majoring in science, pre-professional and chemical engineering. Quantitative and theoretical aspects of the subject emphasized, with less descriptive material than in Ch. 104, 105, 106.

Prerequisite: One year of high school chemistry and acceptable college aptitude scores. Three lectures, two three-hour laboratory periods.

***Ch. 206. General Chemistry. 5 hours.**

Chemical equilibrium and descriptive inorganic chemistry.
Prerequisite: Ch. 106 or Ch. 205. Three lectures, two three-hour laboratory periods.

*Maximum credit which may be earned in general chemistry is 15 hours.

Ch. 226, 227. Organic Chemistry. 5, 5 hours.

General organic chemistry covering the chemistry of aliphatic and aromatic carbon compounds. Designed for biology majors, medical technicians, premedical and predental students.
Prerequisite: Ch. 106, Ch. 203 or Ch. 206. Three lectures, two three-hour laboratory periods.

Ch. 234. Quantitative Analysis. 5 hours.

Fundamental principles of quantitative analytical chemistry including gravimetric, volumetric, and a limited amount of instrumental methods. Designed to satisfy the requirements in quantitative analysis for pharmacy, premedical, predental and medical technology students.

Prerequisite: Ch. 206. Three lectures, two three-hour laboratory periods.

GS 104, 105, 106. Physical Science. 4 hours each.

Fundamental principles of physics, chemistry, astronomy and geology and man's relation to them. Development and application of the scientific method. Students may enter any term. May not be taken for credit if student has completed six or more hours in a college-level course in chemistry or physics. Three lectures, one two-hour laboratory period.

Prerequisite: One year of high school algebra, or equivalent, or consent of instructor.

Ph. 201, 202, 203. General Physics. 4 hours each.

Mechanics, sound, heat, light, electricity, magnetism and modern physics. Three lectures, one-hour problem session, one two-hour laboratory period.

Prerequisite: Mth. 101 College Algebra previously or concurrent with Ph. 201 or consent of instructor.

Mathematics

Mth. 95. Intermediate Algebra. 4 hours.

A study of the fundamental laws of algebra with the real numbers. Time is spent on linear equations in one and two variables, linear inequalities, factoring, algebraic fractions, systems of linear equations, exponents, radicals and quadratic equations and inequalities.

Prerequisite: Completion with C or higher of one year of high school algebra and one year of geometry or consent of instructor.

Mth. 101. College Algebra. 4 hours.

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 sequences and series.

Prerequisite: Completion with C or higher of two years of high school algebra and one year of geometry, Mth. 95, or consent of instructor.

Mth. 102. Trigonometry. 4 hours.

A continuation of the study of functions by consideration of circular, trigonometric and inverse functions with an introduction to polar coordinates. Complex numbers are studied with vectors and matrices and determinates are introduced for use in the solution of linear systems.

Prerequisite: Mth. 101 with C or higher or consent of instructor.

Mth. 106. Elementary Calculus. 4 hours.

A one-term course with an intuitive approach to both differential and integral calculus. The techniques of calculus in applied problem solving are emphasized. It is designed primarily for students who do not plan to take higher mathematics courses. Credit is not given for both 106 and 200.

Prerequisite: Mth. 101 and 102 with C or higher or consent of instructor.

Mth. 200, 201, 202, 203. Calculus with Analytic Geometry. 4 hours each.

This is the typical sequence in lower division calculus with the study of functions, limits, continuity, differentiation, integration and infinite series.

Prerequisites: Mth. 101 and 102 with C or higher. A C or higher or above or consent of instructor is required to continue the sequence.

Social Science

Hst. 101, 102, 103. History of Western Civilization. 3 hours each.

Origins and development of western civilization from ancient times to the present.

Hst. 201, 202, 203. History of the United States. 3 hours each.

From colonial times to the present.

PS. 100. American Government. 3 hours.

First term: An introduction to the principles, processes and organization of the American political system.

PS. 202. American Government.

Second term: A continuation of the first semester with an emphasis on the politics and policies of the American political system.

PS. 203. State and Local Governments. 3 hours.

An introduction to American state and local government by comparing the political systems and behavior in states and communities.

PS. 205. International Relations. 3 hours.

An introduction to the analysis of international politics. Topics such as nationalism, alliances, propaganda, United Nations, foreign policy and war are considered as they relate to contemporary problems on the world scene.

Psy. 201, 202, 203. General Psychology. 3 hours each.

Basic principles and theories of behavior. Discussion of individual differences, intelligence, aptitude, methods of psychological measurement and testing, drives and motives, emotions and reactions to stress, perception, learning, thinking, reasoning, personality, the response, mechanism, communication processes, attitudes and social processes, frontiers of psychology.
Prerequisite for 202 and 203: Psychology 201.

Soc. 204. Introduction to Sociology. 3 hours.

A study of people and the history of problems of living together; the development and organization of the various groups and structures that make up the interrelated facets of society.

Soc. 205. Social Issues. 3 hours.

Contemporary social issues reviewed from a sociological perspective. Poverty, child abuse and other related issues in relation to the social structure of American society.

Soc. 206. World Population. 3 hours.

Introduction to the general study of population within a sociological frame of reference. Analysis of past and present theories and anticipated conditions as related to social organization and function.

PE—Health Courses

PE 131. Introduction to Health, Physical Education, and Recreation. 3 hours.
Professional orientation; basic philosophy and objectives; professional opportunities and qualifications.

***PE. 180. Physical Education (women). 3 hours per week, 1 credit.**
A variety of activities taught for physiological and recreational values. A total of five terms required for all lower division women students. 1 hour each term.

***PE. 190. Physical Education (men). 3 hours per week, 1 credit.**
A variety of activities taught for physiological and recreational values. A total of five terms required for all lower division men students. 1 hour each term.
*May be repeated for a maximum of 6 hours credit.

HE. 250. Personal Health. 3 hours.
Study of personal health problems of men and women with emphasis on implications for family life. Mental health, communicable diseases, degenerative diseases, nutrition.

Professional Courses

JOURNALISM

J. 224, 225, 226. Introduction to Journalism. 2 hours each.
Recommended for prejournalism majors; open to non-majors. Survey and criticism of communication media; disscussion of journalistic techniques. Fall term: news and editorial functions. Winter term: advertising and public relations. Spring term: production methods. The terms need not be taken in sequence.

LAW ENFORCEMENT

LE. 111, 112, 113. Law Enforcement and Society. 3 hours each.
Orientation in law enforcement, history and philosophy of enforcement of criminal laws, administration of justice, etiology of criminal behavior, correctional treatment, professional career opportunities.

SECRETARIAL SCIENCE

SS. 111, 112, 113. Stenography. 3 hours each.
Theory of shorthand, practical application in sentence and paragraph dictation. SS. 121, 122, 123 must be taken concurrently unless the student has taken the equivalent. Students with one year of high school shorthand may receive credit for SS. 111 only upon recommendation of the instructor. Five one-hour periods.

SS. 121, 122, 123. Typing. 2 hours each.
Theory and practice. Drills of all kinds, punctuation and mechanical arrangement of business correspondence. Legal forms, tabulating, manuscripts, modern business forms, straight copy timing, training on both manual and electric typewriters. Students who have had one year of typing may receive credit for SS. 121 only upon the recommendation of instructor.

GENERAL EDUCATION COURSE DESCRIPTIONS

		LEC.	LAB.	TERM UNITS
American Institutions	**1.600**	**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 the fundamental principles and processes involved in the development of the basic institutions of our society. Topics considered are: culture, its functions and changes; social groups in relation to problems of urban living, the family, and social classes; the American economic system, its concepts and organization; public opinion; the American political system and international relations.

Basic Reading Tactics	**1.110**	**3**	**0**	**3**

Basic Reading Skills. Emphasis on an orderly mastery of habits and skills with application of appropriate techniques and materials. Upon appraising student needs, each phase of basic reading is upgraded.

Business Economics	**1.524**	**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.

Communication Skills	**1.101**	**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.

Communication Skills	**1.104**	**3**	**0**	**3**

A continuation of the processes of improving the student's speaking, reading, writing and listening skills with emphasis on speaking. 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.

Constitutional Government	**1.601**	**3**	**0**	**3**

A study of the Constitution of the United States and its meaning to the individual through government. Designed to develop an understanding of the meaning of the Constitution's provisions and an appreciation of its contemporary relevance. In the treatment employed, the historic roots of the document are studied to establish the precedents for particular institutional arrangements, e.g., bicameral legislatures.

		LEC.	LAB.	TERM UNITS
Consumer Economics	**1.525**	**3**	**0**	**3**

Principles and problems of the consumer and how he can get the most out of life through the fullest use of money, time and energy. Credit, investment, housing, insurance, consumer law and budgeting are examples of the subjects covered. The course is designed to explain, guide and show the student how to become more efficient in meeting everyday problems thus laying the ground work for competent consumership.

***Cooperative Work Experience**	**2.686**	**1**	**4**	**2**

On-the-job training supervised by both the school and the employer. CWE provides valuable experience in areas closely paralleling the student's college program. This program is a cooperative arrangement between the student, school and employer. The student is required to attend a one hour weekly seminar on campus in addition to the on-the-job training. Entry is by petition for students already employed or by placement through the CWE Office.

***Cooperative Work Experience**	**2.687**	**1**	**8**	**3**

Same as above

***Cooperative Work Experience**	**2.688**	**1**	**12**	**4**

Same as above

***Cooperative Work Experience**	**2.689**	**1**	**16**	**5**

Same as above

• Students signing up for CWE in lieu of any other course must have department chairman approval and file a deviation form in the Registrar's Office.

Employer-Employee Relations	**4.500**	**3**	**0**	**3**

The objective of this course is to provide an understanding of 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.

Introduction to Psychology	**1.606**	**3**	**0**	**3**

An introductory course in psychology. It explains the scopes, methods and basic concepts of psychology. Some of the subjects covered are motivation, learning, thinking, perception, emotion, personality, mental health, animal behavior and applied psychology.

Occupational Skills & Geography	**1.302**	**3**	**0**	**3**

A study of geographic factors and how they exert an influence on occupational endeavors. Special emphasis on the geographic factors of Oregon and Washington and on the occupational courses being taught. Each student learns how his specific occupational field is influenced by geography through development of a study of his field in different geographic settings.

		LEC.	LAB.	TERM UNITS
Principles of American Govm't	**1.602**	**3**	**0**	**3**

A survey of the government of the United States designed primarily to meet the needs of college students taking their only course in political science. The origins and growth of national government are studied with an emphasis on current status and organization. Considerable attention is given operating methods and administration of United States Government along with the law-making process. State and local government is included, this knowledge being vital to a complete understanding of the subject.

Psychology of Human Relations	**1.608**	**3**	**0**	**3**

A study of principles of psychology that will be of assistance in the understanding of inter-personal relations on the job. Motivation, feelings and emotions are considered with their particular reference to on-the-job problems. Other problems investigated are employee selection, supervision, job satisfaction and industrial conflict as they relate to the employee and his work. Attention also is given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community.

Public Speaking	**1.610**	**2**	**2**	**3**

Designed to improve speech efficiency, self-confidence and skill in organization and delivery of the type of speeches encountered in business and social activities through practical application of actual speech situations.

Report Writing	**1.106**	**3**	**0**	**3**

Supplies knowledge of the principles of writing reports. Subjects covered include: the why of reports, types of reports, make-up, effectiveness of writing styles, gathering facts, planning reports, documentation, methods of writing, layout and typing and visual aids in reports.

Prerequisite: Communication Skills 1.101 or instructor approval.

Sociology	**1.310**	**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 the interrelated facets of modern society. Contemporary problems particularly evident in the United States, such as racial disorders, campus demonstrations and the hippie movement are included.

MATHEMATICS COURSES

Analysis (mathematics)	**4.207**	**2**	**2**	**3**

A theory-lab course designed for practical application and problem solving using basic mathematical concepts. Training is provided on a variety of calculating machines.

Prerequisite: Mth. 4.200 or equivalent and Slide Rule Operations 6.137.

Applied Mathematics in Real Estate	**2.405**	**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.

Prerequisite: Business Mathematics 2.600 or department chairman approval.

Business Mathematics	**2.650**	**3**	**0**	**3**

Practical mathematics including problems composed of whole numbers, fractions, measurements, formulas, graphs and roots. The mathematics used in determining dosage is included as related information.

Business Mathematics	**2.653**	**3**	**0**	**3**

A continuation and practical application of the business mathematics principles studied in Business Mathematics 2.650, including mathematics of payroll, depreciation, insurance, taxes, dividends and inventory.

Prerequisite: Business Mathematics 2.650.

Business Mathematics	**6.918**	**3**	**0**	**3**

Acquaints the student with practical mathematical applications in the business area. Fundamentals of applied algebra, symbols, equations, ratios and proportion, exponents, radicals and formulas are covered with emphasis on business applications.

Data Processing Mathematics	**6.941**	**3**	**0**	**3**

Introduction to the field of mathematics used in data processing. Covers binary numbering systems, numerical methods, Boolean algebra, logic and set theory.

Data Processing Mathematics	**6.942**	**3**	**0**	**3**

Applied mathematics for electronic computer applications. Provides a practical foundation for the solution of business, business management and applied science problems, coordinate systems and trigonometry.

		LEC.	LAB.	TERM UNITS
Data Processing Mathematics	**6.943**	**2**	**0**	**2**

A continuation of 6.941 with an emphasis on mathematics needed in computer operation and management.

Prerequisite: Data Processing Mathematics 6.941.

Electrical Mathematics	**6.115**	**3**	**0**	**3**

Applied mathematics for electronic engineering technicians. Includes an introduction to calculus covering graphical methods, differentiation and integration with direct application to electronic and electrical circuitry.

Engineering Problems	**6.138**	**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. A background of history and engineering is presented. Practical applications utilize diagrams, graphs, charts, tables, curves and the slide rule.

Mathematics	**4.200**	**2**	**2**	**3**

Practical mathematics including problems composed of whole numbers, fractions, measurements, formulas, graphs and roots.

Prerequisite: Ability to profit from instruction.

Mathematics	**4.202**	**2**	**2**	**3**

Practical mathematics for skilled workers, including the fundamentals of applied algebra and applied geometry, including symbols, equations, ratios and proportion, exponents, radicals, formulas, geometric lines and shapes, common geometric constructions and introductory applied trigonometry.

Mathematics	**4.204**	**2**	**2**	**3**

Concentrates on actual problems encountered by machinists, precision inspectors, tool-and-die makers, draftsmen, tool designers and other workers in related industrial occupations. It applies arithmetic, alegbra, geometry, trigonometry and their various phases to jobs encountered in every day industry. The emphasis is on the actual problem-solving aspects growing out of various jobs. It is a continuous and more thorough coverage of many areas studied in the prerequisite, Math. 4.202.

Mathematics	**4.209**	**2**	**2**	**3**

A mathematics refresher course for non industrial majors. This course reviews the mathematical concepts of whole numbers, fractions, decimals and percents. It also reviews the basic concepts of graphs, charts, metric system, weights, measures and geometry.

Shop Arithmetic	**4.246**	**2**	**2**	**3**

A one-term course in basic arithmetic used in the welding shop. It will cover addition, subtraction, multiplication, division, ratios and triangles in preparation for layout work and calculation of time and material costs, deposition, rates, etc.

Slide Rule Operations	**6.137**	**0**	**2**	**1**

A study of the slide rule applicable to problem solving in technical fields. This study involves care, adjustment and manipulation of the slide rule, and practical application of slide rule operation with emphasis on problem-solving and accuracy.

Technical Mathematics	**6.261**	**4**	**0**	**4**

Covers algebraic operations on polynomial and fractional expressions. Includes solution of linear equations in one and two variables, ratio and proportion, exponents, radicals, functional notation and introduction to graphs with applications to technology.

Technical Mathematics	**6.262**	**4**	**0**	**4**

An applied course in mathematics on the technical level including logarithms, right and oblique triangle problem solving, trigonometric applications, identities and equations and graphs of trigonometric functions.

Prerequisite: Technical Mathematics 6.261 or equivalent.

Technical Mathematics	**6.266**	**4**	**0**	**4**

An applied course in mathematics on the technical level including quadratic equations, exponential functions, vector algebra, complex notation and an introduction to calculus.

Prerequisite: Technical Mathematics 6.262 or equivalent.

LIFE SCIENCE COURSES

Basic Sciences for Health Occupations	**5.601**	**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.

		LEC.	LAB.	TERM UNITS
Basic Science Principles	4.721	3	3	4

The meaning of science, scientific thinking and methods, a survey of introductory concepts of physics, chemistry and microbiology underlying skills essential to health occupations.

Human Anatomy & Physiology	5.608	3	0	3

A study of normal structure and function of the human body; characteristics of the cell as basis for life; organization of tissues, organs and systems; structure and function of body tissues, organs and systems; structure and function of body systems. Lecture and demonstration.

Human Anatomy & Physiology	5.722	3	3	4

Structure and function of the human body, structure, function and characteristics of the living cell, organization of tissues, organs and systems; structure and function of body systems.

Introduction to Biology	6.277	3	3	4

An introductory biology course designed to acquaint the student with the basic biological knowledge required for an understanding of ecological issues and other biology-related problems confronting him in today's world.

Microbiology	5.723	3	3	4

A survey of bacteria and other microorganisms emphasizing their impact upon human health and welfare.

Microbiology	5.724	3	3	4

Continuation of survey of bacteria and other microorganisms, emphasizing their impact upon human health and welfare.

PHYSICAL SCIENCE COURSES

Applied Physics	6.366	3	2	4

Applied physics covering magnetism and electricity on the post-high school level. Basic electronic circuits, 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 demonstrations and experiments to help clarify the principles and procedures covered in class.

Applied Physics	6.370	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.

Applied Physics	6.371	3	2	4

Applied physics on the post-high school level covering the principles of vectors, kinematics, work-power-energy, machines and angular velocity. Laboratory time is provided for demonstrations and experiments to clarify principles and procedures covered in class.

Chemistry	6.276	3	2	4

A continuation of Introductory Chemistry covering the basic principles of General Chemistry.

Elementary Geology	4.305	3	2	4

A study of basic structure geology as it pertains to the drilling industry. Develops an understanding and recognition of geological formation, topography and maps to better identify and locate satisfactory drilling sites in relationship to existing water tables.

Elem. Science for Firefighters	5.102	3	2	4

Characteristics and behavior of fire; fundamentals of physical laws and chemical reactions occurring in fire and fire suppression; by-products of combustion; analysis of factors contributing to fire—its cause, rate of burning, heat generation, travel, confinement, control and extinguishment.

Fire Science	6.995	3	2	4

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.

Fire Science	6.996	3	2	4

The physical and chemical properties of substance, chemical bonds and reactions, ionization, covalent substances. Laboratory time is provided for clarifying demonstrations and experiments.

Introductory Chemistry	6.275	3	2	4

Fundamentals of modern chemistry for students who have had little or no previous training in chemistry. Covers the basic principles and fundamentals of chemistry with emphasis on industrial application.

		LEC.	LAB.	TERM UNITS
Practical Physics	4.300	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.

Prerequisite: Mathematics 4.200 or equivalent.

Practical Physics	4.302	3	2	4

Practical physics for skilled workers covering matter, measurements, mechanics and machines. Laboratory time is provided for demonstrations and experiments to help clarify the principles and procedures covered in class.

TECHNICAL COURSES

Accident Prevention & First Aid	4.190	1	2	2

A study of accident prevention, recognition of hazards, good housekeeping and personnel protective equipment. Study and practice of emergency treatment for various types of injuries, control of bleeding, artificial respiration, transportation, splinting and bandaging. Course leads to a Red Cross Standard Certificate.

Accounting	6.923	3	3	4

Employs the analysis approach to acquaint the student with the concepts and applications in processing financial data in a business environment, to produce desired records and reports for management. Specific topics covered are service and service-trading enterprises, special journals, ledgers, worksheets, statements, payroll and four monthly cycles.

Accounting	6.924	3	3	4

Continuation of Accounting 6.923. It deals with the area of financial accounting, partnership organization and branch office accounting. Specific topics covered are sales, receivables, payables, inventories, taxes, depreciation, accruals and closing the books. Problem solving is done through the Computer Center as student capabilities permit.

Prerequisite: Accounting 6.923.

Accounting	6.925	3	3	4

A continuation of accounting 6.924. A managerial accounting course centered around the corporate structure. Emphasis is placed on management decision-making, using such managerial tools as budgeting, cost systems, standard costs, statement analysis, flow of funds, special reports for management and automation. Accounting applications are processed through the Computer Center by all data processing students.

Prerequisite: Accounting 6.924.

Administration of Child Care Centers	7.113	4	0	4

Operation of cooperative preschools, nursery schools, Head Start, day care centers and private kindergartens. Program planning, organizational structure, budgeting, personnel, interviewing, operational codes and licensing.

Administration of Justice	5.203	3	0	3

A review and study of the court systems existing in the United States and the jurisdiction of each; the mechanics of court procedures and the reasons for them; the principles of the Constitution, federal, state and civil laws as they apply to the law enforcement office; the legal procedures that must be followed by a law enforcement officer when preparing o case before the court.

Advanced Arc Welding	4.166	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 gauge welding is included.

Prerequisites: Third term standing and 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.

Advanced Electronic Circuits	6.216	1	3	2

Each student designs and builds a project of his own. Emphasis is placed on the design, quality of workmanship and the written manual for the project.

Advanced Industrial Electronics	6.248	2	3	3

A continuation of industrial electronics with emphasis on combining control functions into larger systems. Applications of various transducers and simple servo systems, magnetic amplifiers, small motor controls, light-operated controls and interpretation of control diagrams.

Prerequisite: Industrial Electronics 6.218 or approval of department chairman.

		LEC.	LAB.	TERM UNITS
Advanced Laboratory Procedures	5.407	2	3	3

Principles of full and partial denture prosthesis and the use of laboratory equipment. Instruction includes experience in investing and casting inlays and assisting in other advanced laboratory procedures.

Advanced Lathe Practices 4.833 2 4 3

A continuation of the machine tool series. Studies include: internal boring, threading and taper turning, external threading, taper turning, angular turning and machine reaming. Laboratory time is provided for student operation of equipment.

Prerequisite: Machine Shop Practices 4.841.

Advanced MIG Welding 4.252 1 6 3

A continuation of Basic MIG Welding 4.250. Study and practice includes mild steel, aluminum, stainless steel and pipe welding techniques. An opportunity is provided at the end of the course to take the Oregon State Department of Labor certification test at extra cost.

Prerequisite: Basic MIG Welding or approval of department chairman.

Adv. Milling Machine Practices 4.837 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.

Advertising Layout 2.101 1 4 3

Poster layout with some instruction in brush and pen lettering, using tempera paints and ink. Development of advertising ideas and rough drafts pertaining to magazine, newspaper and television advertising.

Analysis of Operation Problems 6.972 1 2 2

A wide range of typical computer operation problems and the methodology for solution are presented.

Prerequisite: Computer Center Operations 6.953.

Antennas & Transmission Lines 6.231 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.

Prerequisite: Network Analysis 6.230.

Applied Data Processing 2.682 2 3 3

A project-oriented course. The student designs a business system using RPG as the computer language.

Prerequisite: RPG-2 2.681.

Applied Fluid Power 6.117 2 2 3

Fundamental principles of fluid power systems. Included is the study of the basic components of fluid power systems, how they are combined to build up circuits and the uses of these circuits. The students learn the basics of design and use of fluid power systems and the use of various components in these circuits. Laboratory time is provided to illustrate and amplify the classroom learning.

Applied Heat Power 6.616 2 3 3

A continuation of Applied Thermodynamics 6.615. A study of the various types of heat engines including their basic cycles. Fuels and the energy available from them are analyzed to determine engine output efficiency. Valve and ignition timing are studied in relation to the fuels. Laboratory time is provided to analyze and test the various points brought out during the lectures.

Prerequisite: Applied Thermodynamics 6.615

Applied Mechanics 6.109 2 3 3

Deals with forces and the effect of forces acting upon rigid bodies at rest. This includes resolution 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.

Prerequisite: Third term standing or approval of department chairman.

Applied Mechanics 6.111 2 3 3

A study of motion of rigid bodies and the forces that produce or change their motion. The principles of rectilinear motion, curvilinear motion, rotation and plane motion are covered in the course. Laboratory time is provided for the conducting of experiments to clarify the principles and procedures covered in class.

Prerequisite: Fourth term standing or approval of department head.

Applied Roentgenology 5.408 0 3 1

Consists of practice in placement of film, cone angulation, machine manipulation and film processing to develop proficiency in taking x-rays.

Applied Roentgenology 5.413 0 3 1

A continuation of applied Roentgenology 5.408, designed to develop further skills in taking x-rays.

Applied Stenography 2.675 1 3 2

Coordinates and intensifies all the previous training. The classroom situation simulates that of an office with the student taking dictation in shorthand and from the dictating machine for transcribing at the typewriter in mailable form. This on-the-job experience offers experience in high quality production and work confidence to the student about to enter the business world.

Applied Systems & Procedures 6.945 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.

Applied Thermodynamics 6.615 2 3 3

Introduces some of the principles of thermodynamics. These principles are shown in action in relation to the many heat engines and other devices that transfer energy in the form of heat. Laboratory time is provided to achieve this, and also to enable students to consult with the instructor on areas of study which may be causing difficulty.

Architectural Design 4.235 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 department chairman.

Architectural Drafting 4.226 0 8 3

Emphasis basic architectural drafting techniques and methods. Covers architectural lettering, layout, arrangement, symbols and conventional construction methods used in residential or light commercial buildings.

Prerequisite: Two terms of drafting.

Architectural Drafting 4.227 0 8 3

Development of basic architectural drafting techniques, symbols and methods. Familiarizes the student with advance planning, detailing, design and the application of related resource materials.

Prerequisite: Architectural Drafting 4.226

Assembler I 6.969 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.

Prerequisites: System 360 Job Control 6.949. System 360 Concepts and Job Control 6.956.

Assembler II 6.970 3 6 5

A programming option for students interested in becoming systems programmers. Subprogram modules and macros are written, linked and tested.

Prerequisite: Assembler I 6.969.

Auditing 2.555 3 3 4

A study of standards and procedures observed by C.P.A.'s in the examination of financial statements. Audit standards and objectives, collection of evidence, evaluation of internal control, verification, work papers and reports.

Basic Arc Welding 4.240 2 9 5

A beginning course in arc welding, covering 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.

Basic Design 7.114 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.

Basic MIG Welding 4.250 1 4 2

Designed to develop a basic familiarity and basic skills in semi-automatic MIG welding processes. A study of the principles involved in the equipment, material and procedures is combined with demonstrations and supervised practice using standard industrial equipment. Solid and flux-cored wire will be used in typical industrial applications.

Prerequisite: Basic Arc Welding 4.240 and Basic Oxy-Acetylene 4.161 or approval of department chairman.

Basic Oxy-acetylene Welding 4.161 2 6 4

Fundamentals of oxy-acetylene welding introducing brazing and cutting processes.

		LEC.	LAB.	TERM UNITS
Basic TIG Welding	4.251	1	3	2

A practical course in the fundamentals of TIG welding. Processes, machine setting application and development of inert gas welding skills, includes welding of mild steel, aluminum, aluminum alloys, stainless steel metals and magnesium.

Prerequisites: Basic Arc Welding 4.240 and Basic Oxy-Acetylene 4.161 or approval of department chairman.

Blueprint Reading and Layout 4.810 2 3 3

Interpretation and use of mechanical drawings and shop sketches. Emphasizes blueprint reading, sketching and layout principles, tools and practices.

Blueprint Reading & Sketching 4.244 1 3 2

Covers 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.

Blueprint Reading for Construction 4.159 2 3 3

Relationship of the 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; free hand, large-scale detailing of portions of construction; material take off. Fabrication, construction, and assembly, commercial buildings and bridge or dam construction prints typify the type of plans used for study.

Prerequisite: Blueprint Reading and Sketching 4.244 or department chairman approval.

Blueprint Reading for Firemen 5.119 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.

Building Construction for Fire Protection 5.116 3 0 3

Application and use of the Uniform Building Code and applicable fire prevention codes in general use, finding and evaluating building hazards and fire hazards and simplified methods of estimating fire losses.

Prerequisite: Blueprint Reading for Firemen or instructor's consent.

Building Materials 6.281 2 4 4

Wood as an engineering material, lumber merchandising, basic methods iin residential building construction, codes and grading rules. Elementary knowledge of building materials other than wood.

Business & Public Administration 2.502 3 0 3

An introductory course concentrating on the involvement of students in the activities of the business organization and its operative and managerial functions. Emphasis is placed on decision-making. Introduction of statistics as a tool for management. The nature and functions of public administration are explored particularly as they relate to the State of Oregon.

Business Correspondence 2.672 3 0 3

A review of grammar and punctuation. Vocabulary building and spelling are included. Emphasis is on writing of various types of business correspondence letters, memorandums, reports, report format, etc.

Business Dictation 2.668 1 2 2

Development of the skill of taking dictation for 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.

Business English Fundamentals 2.673 3 0 3

Develops the student's vocabulary, spelling ability and usage of words and reviews the principles of grammar. Written and oral communications as required in business situations are emphasized.

Business Law 2.320 3 0 3

A review of the nature of law as it applies to business. Emphasis is on contractual relationships, the law of sales, bailments and the negotiable instruments. Case studies are used to illustrate the principles involved.

Business Machines 2.661 1 3 2

An introduction to the variety of up-to-date tools (dictating, transcibing and duplicating machines) used today to handle business communications. Learning the general function of the available machines, understanding their care and acquiring reasonable skills in their use is the major goal.

Business Machines Lab 2.660 0 3 1

Presents instruction in the general function of adding machines and calculators, the understanding of their application to business and the acquiring of reasonable skills in their use.

		LEC.	LAB.	TERM UNITS
Business Management Principls	2.202	3	0	3

A practical course in the five basic areas important to business management. These areas are planning, organizing, controlling, staffing and directing.

The Business of Being a Homemaker 7.100 2 2 3

Assists the student in gaining more skill while carrying the responsibility of two full-time jobs—that of working outside of the home and the homemaker. The satisfaction of working smarter, not harder, will be considered in the areas of food planning and preparation; better buying habits; wise use of time, money and energy; and selection and care of clothing and equipment in the home.

Buying 2.102 2 3 3

Study of sources, timing and terms applicable to buying decisions; the use of purchasing guides, including budgets and buying plans, catalogs, buying offices and selection criteria. How to develop a limited buying plan, steps to follow and evaluation of results.

Prerequisite: Retailing

Cadastral Surveying Field Lab and Seminar I 6.141 7

The student registers for this course before leaving school to work spring and summer terms. Upon his return in the fall he submits a written report of his work experiences. This report is reviewed and discussed with a surveying instructor.

Cadastral Surveying Field Lab and Seminar II 6.142 7

A continuation of Field Lab and Seminar I. The student submits a written report of his work experiences, which will be different as he gains knowledge of the practices of cadastral surveying.

Cam and Gear Drafting 4.225 0 8 3

Advanced mechanical and machine drafting. Study includes the calculation of various types of gears in addition to the detail drawing of gears. The principles of the cam are discussed and displacement diagrams and detail drawings illustrate various types of motion and various styles of cams in common use.

Prerequisite: Machine Drafting 4.223 and Technical Math 6.261 or Math 4.204.

Case Problems in Marketing 2.107 3 0 3

A course using cases in marketing to develop the students ability to apply what he has learned and arrive at a decision or course of action.

Chairside Assisting and Basic Lab Procedure 5.403 2 6 4

A continuation of basic chairside procedures including mixing filling materials, preparing impression materials for use and processing the impression. Provides practical dental laboratory experience in pouring models and making base plates and bite rims.

Child Nutrition 7.115 3 0 3

Nutritional needs and food habits of the young child with practical application to the day care setting.

Childhood Emergencies 7.116 4 0 4

Basic content necessary for a first aid certificate, how to plan a safe environment for groups of young children, how to handle emergencies, childhood diseases and good health habits.

Children's Literature 7.117 3 3 3

An introduction to picture books and stories appropriate to the young child, with emphasis on both classics and current literature; criteria for selection; use of books for concept formation, enjoyment and appreciation, reading, storytelling and other methods of presentation appropriate for children.

Civil Engineering Drafting 4.236 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 over-all set of plans. The student will repair selected drawings from a sewer system, a water system or similar project.

Prerequisite: 2nd year Technical Drafting standing or consent of department chairman.

COBOL I 6.961 3 6 5

An introduction to COBOL. Language structure and vocabulary are stressed. Theory and practice are applied by programming business data processing problems.

COBOL II 6.963 3 6 5

An intermediate course in COBOL. Problem definition and analysis, iterative techniques, efficiency coding and documentation are instructed.

Prerequisite: COBOL I 6.961

		LEC.	LAB.	TERM UNITS
COBOL III	**6.964**	**3**	**6**	**5**

An advanced course which places emphasis on efficiency, file organization, data retrieval and linking COBOL coded program modules.

Prerequisite: COBOL II 6.963.

Color Television Servicing	**4.273**	**3**	**6**	**5**

A practical approach to color television with both theory and practical techniques being studied and applied. Both solid state and tube type are analyzed.

Commercial and Investment Properties	**2.419**	**3**	**0**	**3**

Informatin for licensed brokers and real estate salesmen. Emphasis on the process of selecting commercial property for all types of investment purposes. All factors of influence are analyzed. Determination of actual net income is stressed.

Prerequisite: Second year standing or instructor approval.

Community-Police Relations	**5.215**	**3**	**0**	**3**

A course which will study problems such as increasing permissiveness for the wrongdoer and law violator, lessening respect for authority, including the police, charges of police brutality relating principally to demonstrations and racial disturbances, and court decisions of recent years which have appeared to hamper police effectiveness. Guides and assists police officers becoming better informed of the conditions causing the above problems, improves the police understanding and awareness of the attitudes and feelings of the people among whom they work and enable them to relate more adequately to their communities.

Computer Center Control Operations	**2.680**	**1**	**2**	**2**

Computer center control operations is learned while providing computer services. Comprehensive instruction on both the lecture room and data center. Instruction and work experience are provided in two job titles, control clerk and librarian. Instruction covers technical duties, skills and responsibilities for each job title as relates to the operation and maintenance of a data center.

Computer Center Lab I	**6.947**	**0**	**6/18**	**2/6**

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.

Computer Center Lab II	**6.950**	**0**	**6/18**	**2/6**

Continuation of Computer Center Lab I.

Computer Center Operations	**6.951**	**3**	**0**	**3**

This course covers instruction of duties for six job titles. They are Data Center Supervision, Console Operator, Librarian, Peripheral Equipment Operator, Scheduler-Dispatcher and Control Clerk. Instruction covers technical duties, skills and responsibilities for each job title as it relates to the operation and maintenance of a data center using an IBM 360 Computer.

Prerequisite: Computer Center Lab I 6.947 must be taken concurrently.

Computer Center Operations	**6.952**	**4**	**0**	**4**

Continuation of Computer Center Operations 6.951.

Prerequisite: Computer Center Operations 6.951 and concurrent registration in Computer Center Lab II.

Computer Center Operations	**6.953**	**3**	**12**	**6**

Continuation of Computer Center Operations 6.952.

Prerequisite: Computer Center Operations 6.952.

Computer Center Operations	**6.954**	**3**	**12**	**6**

Continuation of Computer Operations 6.953.

Prerequisite: Computer Center Operations 6.953.

Computer Center Operations	**6.955**	**2**	**12**	**6**

Continuation of Computer Operations 6.954.

Prerequisite: Computer Center Operations 6.954.

Computer Operation	**6.987**	**1**	**8**	**3**

This course is a laboratory course involving the operation of a data center. It will give the student practical experience in the operation of all types of data processing machines.

Computer Problems for Engineers	**6.929**	**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.

		LEC.	LAB.	TERM UNITS
Computing Systems and Job Control	**6.949**	**2**	**1**	**3**

An introduction to the functional characteristics and general principles of the internal operation and supporting software of the IBM S/360. Lab problems include writing job control to achieve specified results.

Prerequisites: Fundamentals of Computers and Programming 6.948, S/360 Concepts.

Concerns of Parenthood	**7.118**	**3**	**0**	**3**

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 (mobility, divorce, death, illness, working mothers, etc.), adoption, foster homes, exceptional children, and community. The class content is planned to be flexible enough to be able to include specific concerns of students enrolled.

Concrete Construction & Design	**6.123**	**3**	**3**	**3**

A study of concrete materials, shear and bending stresses, and design calculations. Coverage is given rectangular, tee, and reinforced beams, reinforced floor systems and columns, foundations, retaining walls and miscellaneous members. Laboratory work consists of problem solving.

Prerequisite: Sixth term standing or approval of department chairman.

Constitutional Law	**5.213**	**3**	**0**	**3**

A study of the Constitution of the United States and its provisions and amendments. This includes various decisions of the Supreme Court in recent years with particular emphasis on the law and decisions relating to arrests, searches and seizures and confessions.

Construction	**2.418**	**0**	**4**	**2**

A comprehensive non-technical course given primarily for real estate license preparation. Includes fundamentals of building construction and materials, costs, building codes and terminology used in construction.

Prerequisite: Real Estate Principles 2.410 or instructor approval.

Construction Estimating	**6.110**	**2**	**3**	**3**

Basic skills in estimating the amount and cost of materials required and labor cost involved in various types of construction. Application of these skills of making estimates of material and labor quantities and costs for representative type of construction.

Prerequisite: Sixth term standing or approval of instructor.

Contracts and Specifications	**6.118**	**3**	**0**	**3**

Acquaint the student with common usage and practice in the preparation of contracts and attendant specifications. Examination of existing contracts covering current jobs is used whenever possible with practical problems designed to teach the application of theory.

Prerequisites: Second year standing or approval of department chairman.

Copywriting in Advertising	**2.103**	**2**	**2**	**3**

Planning and writing copy for individual ads for communication and selling through media of magazines and newspapers.

Cost Accounting	**2.576**	**3**	**0**	**3**

Involves the student in utilizing cost data as a tool to aid management in areas of analysis and control. A gradual unfolding of knowledge, skill, relationships, judgments and practical applications in job order, process and standard costing, budgeting, non-manufacturing costs, direct costs and data processing application techniques.

Prerequisite: Accounting 6.925.

Creative Activities	**7.136**	**2**	**2**	**3**

Examination of and experience with various media and activities that promote creative growth in young children. Consideration is given to the importance and value of creative activities and how to foster them in and present them to young children in families and groups. Included are art activities, crafts, use of nature, etc. A variety of resource materials and books are employed. The course encompasses theory, student involvement in the actual activities in a lab type situation and use of these activities with young children.

Prerequisite: Basic Design or consent of instructor.

Credit Procedures	**2.558**	**3**	**0**	**3**

Principles and methods of credit administration, evaluation of credit risks, credit controls, action for collection or legal remedies, assisting in determining credit policy and securing credit information.

Crime and Delinquency	**5.201**	**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, as well as the incidence among criminals and delinquents of various biological, psychological and social traits, characteristics and processes.

		LEC.	LAB.	TERM UNITS
Crime and Delinquency	5.202	3	0	3

A continuation of Crime and Delinquency 5.201. Factual materials pertaining to control of crime are related to sociological and psychological theories of punishment and treatments. Imprisonment, probation, parole, etc., are identified as society's reactions to crime and variations of those reactions are studied. Operations of police departments, courts, probation departments, parole departments and prisons are examined.

Criminal Investigations I	5.206	3	3	4

A study of the basic tools of investigation and an introduction to investigative work. Acquaints the student with the meaning of a complete investigation and stimulates interest in, and realization of the need for further study in the specialized field of crime detection. The method of the investigator at the crime scene is studied. Methods of investigation, scientific techniques, aids available, search of the scene, gathering information and evidence, recording notes and reporting findings are all a part of this course. Recent court decisions as they bear on admissibility of evidence and use of interrogations are reviewed.

Criminal Investigations II	5.207	3	0	3

A study of the technical methods and services available to the investigator through scientific and other means, in such fields as identification, chemical and physical examinations and other sources available to the investigator. Some of the more common technical avenues to be studied are in the areas of finger prints, foot and tire impressions, tool marks, cleaner and laundry marks, guns, hairs, fibers, dust, glass fractures, paints and document examinations. The investigator is apprised of the evidential possibilities of many items and processes, to better guide him through investigations in the fast-expanding technical field of law enforcement. The ultimate goal of presenting evidence in court is upper-most in the investigator's mind as he progresses with the case.

Criminal Investigations III	5.208	3	3	4

An application of the investigative techniques studied in Criminal Investigation 5.206 and 5.207 to certain specific offenses. The peculiarities and similarities of various crimes are discussed and are either more serious in nature or of frequent occurrence. The elements of proof needed in each crime are correlated with the Oregon Revised Statutes, thus following the path of investigation under the Oregon law as well as under common law. The student as an investigator learns the necessity of painstaking thoroughness and the value to his case resulting from application of scientific methods.

Criminal Law I	5.211	3	0	3

A study of the Structure and definition of various crimes. Classifications of crimes including descriptions and elements are studied to determine what crime, if any has been committed. The union of criminal intent to the criminal act to establish the corpus delecti is reviewed relating to degree of involvement of principal or accessory. The capability or incapability of persons to commit a crime either legally or physically because of age, physical condition, mental condition, etc., is considered. Exemptions as privileged communications afforded a spouse, attorney, physician, corporations, diplomats, etc., and whether crimes are justifiable or excusable, are reviewed. Crimes studied are offenses against the person, home, property, public health, safety and morals, public justice, public peace, federal governments and foreign governments.

Criminal Law II	5.212	3	0	3

A continuation of Criminal Law 5.211. Further study of criminal procedures with specific review and study of additional violations.

Criminal Law III	5.224	3	0	3

A continuation of Criminal Law 5.212, in which detailed and thorough study is pursued in the subjects of criminal intent and criminal responsibility.

DC Theory and AC Theory	4.255	12	0	9

Basic principles of DC and AC Theory. The DC and AC theory is a necessary background for the understanding of the various phases of electronics. A basis is given for the principles of operation of the radio and television circuits and their components. Basic mathematics is coordinated with the theory areas as needed.

DC Theory and AC Theory Lab	4.256	0	6	2

Basic principles of soldering, wire connecting and the proper use of hand tools and hand powered tools. Safety procedures to be used in the shop. Also practical experiments proving the theories taught in the DC Theory and AC Theory class with the use of basic meters and other equipment.

DOS/TOS Facilities	6.975	3	0	3

All aspects of disk and tape operating systems are instructed.
Prerequisite: Computer Center Operations 6.951.

DOS and OS Operations Management	6.957	3	0	3

Operation management concepts of disk operating systems and full operating systems. Subjects covered are vocabulary, job control language concepts, job scheduling and flow, documentation procedures and management of storage libraries.
Prerequisite: System 360 DOS-TOS Facilities 6.975.

		LEC.	LAB.	TERM UNITS
Data Communication	6.976	2	0	2

Concepts of data communication and real time data collection. Systems are covered and related to programming and operations management.
Prerequisites: Data Processing Management 6.946, System 360 Concepts 6.958.

Data Processing Management	6.946	3	0	3

Instruction in the fundamentals of management and coordination of a data center.
Prerequisites: Computer Center Operations 6.951 and Computing Systems 6.956, or Computing Systems and Job Control 6.949.

Dental Anatomy & Physiology	5.405	2	3	3

A study of anatomical terminology, head anatomy including skeletal structure blood supply, innervation of the face, oral anatomy and physiology, muscles of mastication and paranasal sinuses.

Dental Office Correspondence	5.412	3	0	3

A study of dental office communications pertaining to letter writing, billing, requisitioning, etc.

Dental Office Management	5.410	2	3	3

A survey of personal and vocational relationships, including the telephone, reception procedure, business office procedure, purchases, storage and care of supplies and maintenance of office equipment.

Dental Office Practice	5.409	0	16	3

Practice and observation in an ethical dental office.

Dental Sciences	5.404	3	3	4

A study of the various fields of specialized dentistry recognized by the American Dental Association and the science connected with them. Includes oral hygiene, bacteriology, sterilization, drugs, diet and nutrition.

Development In Childhood I	7.119	3	0	3

The basic principles of development, prenatal through two years old. Emphasis will be on physical, intellectual, emotional and social growth in children. Laboratory experiences as arranged.

Development In Childhood II	7.120	3	0	3

A continuation of Development in Childhood I.
Basic principles of development, ages three through six years. Emphasis is placed on physical, intellectual, emotional and social growth in children. Laboratory experiences as arranged.
Prerequisite: Development in Childhood I.

Directed Participation I	7.121	2	8	6

Supervised teaching of children in a nursery school, day care or child development center, or kindergarten.
Prerequisite: Supervised Field Experience II.

Directed Participation II	7.122	2	12	8

A continuation of Directed Participation I.
Supervised teaching of children in a nursery school, day care or child development center, or kindergarten.
Prerequisite: Directed Participation I.

Drafting	4.101	0	4	2

Fundamentals of drafting designed to give the student a basic understanding of drawing techniques. Emphasis is placed on the 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.

Drafting	4.105	0	4	2

An intermediate course to prepare students for mechanical structural, civil and architectural drafting fields. Includes isometric projection and perspective drawings. Emphasis is placed on the concept, technique of inking and the development of working drawings as used in industry. Limitations of general shop equipment are discussed.
Prerequisite: Drafting 4.101 or approval of department chairman.

Drafting Room Computation	4.126	0	2	1

A course in the presentation of technical data and computations. The use and application of the calculator in the solution of typical drafting room problems is stressed. Practical applications in the area of the graphic presentation of data are covered. The use of standard tables, the calculator and the slide rule are applied to the solution of typical industrial problems.
Prerequisite: Slide Rule Operations 6.137 and Technical Mathematics 6.261 or consent of department chairman and class instructor.

Drilling Machine Maintenance and Repair	4.296	3	4	4

A study of drilling machine maintenance and repair problems and the economy involved for sale and economical operation. A study of tool dressing incorporates machining and welding skills developed earlier in the program.

		LEC.	LAB.	TERM UNITS
Drill Equipment, Tools and Terminology	**4.290**	**3**	**2**	**3**

A comprehensive study of drilling machines and accessory equipment to develop an understanding of the variety of tools and tool usage. Develops understanding of the terminology, vocabulary and terms used in the drilling industry through lecture, demonstration and field trips.

Drilling Setups and Operations	**4.292**	**3**	**4**	**4**

Acquaints the student with a variety of machine setups and operations under varied conditions. Lecture, demonstration and field trips.

Prerequisite: Sixth term standing in the program or approval of department chairman.

Early Childhood Curriculum Methods I	**7.123**	**4**	**0**	**4**

Developing, presenting and evaluating various concepts and activities for children. Schedules, play and selection and arrangement of play materials (including outdoor activities).

Prerequisite: Development in Childhood II or consent of instructor.

Early Childhood Curriculum Methods II	**7.124**	**4**	**0**	**4**

A continuation of Early Childhood Curriculum Methods I. Developing, presenting and evaluating various concepts and activities for children. Creative dramatics, science and nature, field trips and cognitive activities.

Prerequisite: Early Childhood Curriculum Methods I.

Earthwork Computations and Estimates	**6.528**	**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 quantities and costs on highway, bridge and heavy construction work.

Prerequisites: Fourth term standing or approval of department chairman.

Electric Arc Welding	**4.160**	**2**	**6**	**4**

Fundamentals of electric arc welding. Includes machine setting and electrode selection, development of technique and electrode manipulation.

Electrical Circuits	**6.206**	**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, bi-directional wave forms, complex waveform analysis of simple circuits, waveform analysis of series R-C circuits, waveform analysis of series R-L circuits and waveform analysis of combined networks.

Electric Arc Welding	**4.162**	**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.

Electrical Drafting	**4.103**	**0**	**4**	**2**

A course covering the techniques and methods used in the electronic-electrical industry. It includes symbols, wiring diagrams introduction to pictorial drawings, chassis layout schematic diagrams, power distribution diagrams and charts, graphs and ASA and EEIA approved symbols.

Prerequisite: Drafting 4.101 or approval of department chairman.

Electrical Theory AC	**6.202**	**3**	**3**	**4**

A continuation of electrical theory on the basis of alternating 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, the phenomena of magnetism and electro-magnetism, inductance and its characteristics, characteristics of capacitance and the electrical measurement instruments.

Prerequisite: Electrical Theory DC 6.200; Technical Mathematics 6.261, or approval of department chairman.

Electrical Theory DC	**6.200**	**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, the phenomena of magnetism and electromagnetism, inductance and its characteristics, characteristics of capacitance and electrical measurement instruments.

Electricity	**6.208**	**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.

		LEC.	LAB.	TERM UNITS
Electronic Circuit Concepts	**6.212**	**2**	**6**	**4**

A study using the basic circuits and components of electronics. Emphasis on designing and proving of the design concepts. Areas covered are vacuum tubes, amplifiers, oscillators and power supplies. In the laboratory portion of the course the circuits designed in the theory section are proven.

Electronic Data Processing	**6.240**	**3**	**0**	**3**

An introduction to the principles of electronic digital computers. Covers the application and programming of computers in business, industrial and scientific organizations. Reviews the decimal and binary numbering systems as they relate to computers; analyzes computer circuitry with emphasis on transistor and diode switching circuits; presents the fundamentals of logical design with an introduction to Boolean algebra and the use of block diagrams; analyzes the major divisions of digital computer in terms of the arithmetic element, the memory element, input and output devices and the control element.

Electronic Instruments	**6.220**	**2**	**2**	**3**

A study of service and laboratory type instruments to gain the knowledge of the fundamental operating principles and understand how the instruments work, using representative examples. Specific function of the instruments and illustration of practical applications of the instruments.

Elements of Metallurgy	**6.600**	**3**	**0**	**3**

A continuation of the Heat Treatment with emphasis on nonferrous and stainless steel. Special attention will be given on the specification of welding on exotic metals (zirconium, titanium, etc.)

Prerequisite: Heat Treatment of Steel 4.849 or department chairman approval.

Engine Theory & Maintenance	**4.291**	**2**	**4**	**3**

A continuation of Power Systems which involve the student in a more detailed study of internal combustion engine performance. A study of diesel engines will be introduced, including the operation and maintenance of such engines.

Prerequisites: Power Systems 4.172 or approval of department chairman.

Environmental Quality Control	**6.139**	**2**	**3**	**3**

Cover the major aspects of air and water pollution, their causes, the harmful effects to the environment and ways and methods of prevention and treatment. Water storage, treatment and distribution are also studied and discussed.

The Exceptional Child	**7.125**	**3**	**0**	**3**

Understanding the exceptional child: the emotionally disturbed, the mentally accelerated, the slow learner, the physically handicapped and the cultural and economically disadvantaged. Curriculum development, parent involvement and community resources.

Prerequisite: Development in Childhood II.

Expanded Duties I	**5.401**	**0**	**3**	**1**

A presentation of the theory and practice of new procedural responsibilities delegated to dental auxiliary personnel. Includes discussion and demonstration of fluoride application, rubber dam application, polishing of silver alloys and preventive dentistry.

Expanded Duties II	**5.402**	**0**	**3**	**1**

A continuation of 5.401. Includes laboratory procedures with practical application of the topics covered in Expanded Duties I 5.401.

FM and HIFI Theory	**4.270**	**3**	**0**	**3**

A study of the principles of FM receivers, different kinds of FM detectors, principles of multiplexing, principles of HIFI, operation of stereo sets, HIFI amplifiers and speaker systems.

FM and HIFI Lab	**4.271**	**0**	**3**	**1**

Application of the principles studied in theory and the maintenance of FM and HIFI equipment. Basic record player units will be set up and checked out, serviced, and lubricated and the cartridges studied and checked out.

Fabrication Practices I	**4.155**	**2**	**3**	**3**

Practices in the fabrication of metals and metal finishing, change of shape, change of physical characteristics and joining of metals.

Prerequisite: Inert Gas Welding Techniques 4.164 or department chairman approval.

Fabrication Practices II	**4.156**	**2**	**3**	**3**

Study and application of fabricated metal technology. Recognition of pattern and jig material. Positioning of fabricated sections for rapid completion. Areas where automated equipment can be utilized. Elimination of distortion problems.

Prerequisite: Fabrication Practices I or department chairman approval.

		LEC.	LAB.	TERM UNITS
Fabrication Practices III	**4.157**	**1**	**4**	**3**

A continuation of Fabrication Practices, term three, with emphasis on fabrication of structural and ornamental iron machinery frames and bases.

Prerequisite: Fabrication Practices II or department chairman approval.

Fabrication Practices IV	**4.158**	**2**	**6**	**4**

Instruction and experience in production type welding with the use of jigs, fixtures and positioners.

Prerequisite: Fabrication Practice III or department chairman approval.

Fabrication Problems	**4.169**	**0**	**8**	**3**

A continuation of Fabrication Shop Problems 4.168 with emphasis on quality control (X-ray, ultrasonic, magna-flux and sharpy Vee testing).

Prerequisite: Fabrication Shop Problems 4.168 or department chairman approval.

Fabrication Shop Problems	**4.168**	**1**	**4**	**3**

An application of drafting and math courses to problems in fabrication of structural members, bins, hoppers, pipe fittings, chutes, etc. Principles and practices of pattern development for typical shapes and fittings are included.

Prerequisites: Blueprint Reading and Sketching 4.244, Drafting 4.101, Mathematics 4.202 or approval of department chairman.

Family-Community Relationships	**7.126**	**3**	**0**	**3**

Establishing and maintaining school and community programs for parent education. Learning skills for developing rapport and communication with parents and families. Using conferences, meetings and community resources as tools for fostering parent-child relationships.

Family Living	**7.127**	**3**	**3**	**3**

Patterns of family living in modern society, including the varying roles and interaction of family members, factors affecting family life, including urban-suburan living, socio-cultural, racial and economic.

Finance Contracts and Law	**2.340**	**3**	**0**	**3**

A course designed to study the fields of finance, contracts, and the civil law as they pertain to the law, the contractor, equipment and the consumer.

Financial Management	**2.556**	**3**	**0**	**3**

Effective handling of financial problems in establishment and operation of business organizations. Study of acquisition of capital, management of income functions of financial institutions for business financing, and necessary financial adjustments for changing business conditions.

Fire Codes and Ordinances	**5.116**	**3**	**0**	**3**

Building codes, including classification of buildings, types, fire zones, fire resistance of materials; fire prevention codes, and other related state and local laws and ordinances.

Fire Department Organization and Management	**5.112**	**3**	**0**	**3**

Fire company and department organization and management, duties and responsibilities, response to alarms, public relations, fire prevention, records, reports, and communications, the individual's role and responsibilities within the organization.

Fire Fighting Tactics and Strategy	**5.113**	**3**	**0**	**3**

Pre-fire survey and planning, response and size-up, fireground tactics, analysis and post-mortem.

Fire Insurance Principles and Grading Schedules	**5.111**	**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. A study of the National Board Grading Schedule in detail and other schedules covered briefly. The fundamentals of fire insurance rating methods, loss records, municipal grading etc.

Fire Investigation	**5.107**	**3**	**2**	**3**

Effect on fire prevention by isolating cause of fire; study of burning characteristics of combustibles, interpreting clues, burn patterns leading to point of origin; identifying incendiary indications; sources of ignition and materials ignited; preservation of fire scene and evidence.

Prerequisite: Instructor approval.

Fire Protection Systems	**5.106**	**3**	**0**	**3**

Fire sprinkler and other extinguishing systems including foam, dry chemical CO_2, and halon systems, ventilation systems, fire detection and alarm systems, municipal alarm systems, etc.

		LEC.	LAB.	TERM UNITS
Fire Pump Construction and Operation	**5.105**	**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; rule of thumb fireground hydraulics calculations.

Fire Service Hydraulics	**5.104**	**3**	**2**	**4**

Review of basic mathematics; hydraulic laws and formulas as applied to the fire service; application of formulas and mental calculations to hydraulic problems; fireground water supply problems; underwriter's requirements for pumps and accessories.

Fire Training Programs and Techniques	**5.110**	**3**	**0**	**3**

Purposes of fire sevice drills and training programs. The development and operation of the departments' training program. Facilities and equipment necessary for modern training. Selecting and training the instructional staff. Psychology of learning, four-step method, lesson planning, instruction techniques, training aids, tests, workbooks, training objectives and curriculum development, conducting conferences and meetings.

First Aid	**5.450**	**1**	**2**	**2**

Standard first aid procedures and techniques designed to meet requirements for first aid certificate. Upon successful completion of the course, a standard first aid card may be secured.

First Aid	**5.513**	**1**	**0**	**1**

Skills and knowledge for the immediate and temporary care in case of accident or sudden illness and preventive measures. This is the standard Red Cross First Aid Course.

Forest Mensuration	**6.300**	**3**	**4**	**4**

A study of the measurement of the individual forest products and the standing tree in the forest. Various methods of timber cruising is studied and to work in field practice.

Forest Pathology	**3.607**	**0**	**2**	**1**

A basic course in recognition of the common rots and stains found on logs and trees. The nature and extent of these wood-destroying fungi are studied with emphasis on those prevalent in Oregon and Washington.

Forest Photogrammetry	**3.624**	**2**	**2**	**3**

Techniques and principles of forest photo interpretation; forest type mapping; volume estimating; horizontal measurement of distance, angle and area; vertical measurements, tree heights and difference of elevation of two ground points.

Forest Products	**4.280**	**3**	**3**	**4**

Fundamentals of various forest products such as poles, piling, timbers, lumber, plywood, furniture, particle board, pulp and other wood products, uses and the manufacturing process.

Forest Road Surveying	**6.510**	**1**	**6**	**3**

Principles of forest road design and layout, including circular curves, grades, cross sections, profiles and earthwork computations. Other topics included are theory and lab work in solar observations, computation of areas of land and balancing of survey coordinates.

Fortran for Users	**2.678**	**3**	**0**	**3**

A course for non-programmers covering basic input-output statements, problem definition and documentation, and the use of standard subroutines. Emphasis on using Fortran as a tool to solve problems rather than on programming techniques.

Fortran I	**6.962**	**3**	**6**	**5**

An introduction to Fortran which stresses language structure, coding techniques and input and output record descriptions while solving simple management science problems.

Prerequisite: Data Processing Math 6.941.

Fundamentals of Computers and Programming	**6.948**	**2**	**0**	**2**

A study of such techniques or tools and division tables and flowcharts, the use of computer components and programming systems and solving problems and providing adequate documentation for solutions. An introduction to programming techniques such as loops, switching routines, branches and indexing.

Fundamentals of Exchanging	**2.417**	**3**	**0**	**3**

Principles and practices in exchanging real property for like property. Analysis of tax situations involved and advantages accruing from certain exchanges.

Prerequisite: Fundamentals of Real Estate Taxation 2.416.

Fundamentals of Fire Prevention	**5.101**	**3**	**0**	**3**

Organization and function of a fire prevention bureau, fire prevention codes, state and local laws and ordinances, familiarization with principles of fire prevention, the inspector's job and public relations.

		LEC.	LAB.	TERM UNITS
Fundamentals of Real Estate Taxation	**2.416**	**3**	**0**	**3**

An advanced and intensive study of tax principles governing the acquisition, ownership, operation and disposition of real property with emphasis on tax planning and integration of tax concepts with procedural aspects.

Prerequisite: Accounting 6.921 and Applied Math in Real Estate 2.405.

General Forestry	**3.600**	**3**	**0**	**3**

An orientation and overall picture of forestry in the United States. It includes how forests and man are interdependent; 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.

Gerontology	**5.448**	**3**	**0**	**3**

The physiological development and psychological dynamics of aging are presented as a continuation of the human growth process. The course is presented from an orientation of involvement of the aging with life rather than a preparation for death.

Graphing	**6.981**	**1**	**1**	**1**

In this course the student will learn how to take numerical data and change it into an easier-to-understand graphical form.

Growth and Development	**5.524**	**3**	**0**	**3**

A study of human growth and development from conception to death. Includes physical, emotional, social and spiritual characteristics.

Hazardous Materials	**5.108**	**3**	**0**	**3**

The chemistry of fire, handling emergencies involving flammable liquids, gases and solids, cryogenics, combustible metals, plastics and oxidizing agents.

Prerequisite: Elementary Science for Firefighters or department chairman approval.

Hazardous Materials	**5.109**	**3**	**0**	**3**

Handling of emergencies involving explosive and unstable materials, rocket propellants, water reactive materials, poisons, corrosives, combustion products and radioactive materials.

Prerequisite: Hazardous Materials 5.108 or department chairman approval.

Health Occupations Overview	**5.700**	**1**	**0**	**1**

Concepts underlying the health field, health services and resources in the community and the role of the health worker as a member of the health team.

Heat Treatment of Steel	**4.849**	**2**	**3**	**3**

A study of methods and procedures for improving the characteristics of steel by hardening and tempering. Processes of heat treating include 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.

Prerequisites: Practical Physics 4.300 or approval of department chairman.

Home, Family and Career Management	**7.128**	**2**	**2**	**3**

Principles of time, energy and money management with emphasis on the problems of combining the role of homemaker and wage earner. Using human and non-human resources and those of the family and the community to meet the goals of the individual family members and the family as a whole. Human resources include attitudes, skills, knowledge and energy. Non-human resources include time, money and community facilities.

Hydraulic & Pneumatic Systems	**4.173**	**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 and Mechanical Systems or approval of department chairman.

Hydraulics	**6.112**	**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, the Archimede's 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 clarify the principles and procedures covered in class.

Prerequisite: Fourth term standing or approval of department chairman.

		LEC.	LAB.	TERM UNITS
Hydraulics	**6.114**	**2**	**2**	**3**

Fundamentals of fluid flow, Bernoulli's theorem, flow profiles, stream restrictions (such as weirs, flumes, metering runs), distribution of energy in the stream, flow through pipe, Reynold's Law, Newton's Laws of hydrodynamics, vector representation, 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.

Hydrology for Drillers	**4.294**	**3**	**2**	**4**

A study of hydraulics pertaining to water wells, including water table studies, cone of depression and areas of influence. Factors affecting quality flow; well sizes and well development will also be studied.

Prerequisite: Elementary Geology 4.305 or approval of department chairman.

Income Tax Accounting	**2.554**	**3**	**3**	**4**

A study of Internal Revenue Code Provisions, tax concepts and how both are applied in specific factual situations. A general overview of the economic, political and social ramifications of the law as well as judicial and administrative rulings.

Industrial Electronics	**6.218**	**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.

Prerequisite: Electronic Circuit Concepts 6.212 and Transistor Circuits 6.211 or approval of department chairman.

Industrial Instrumentation	**6.253**	**2**	**3**	**3**

A study dealing with pneumatic, hydraulic and electrical instruments and measurements for temperature, pressure flow and related phenomena. Employs many of the principles and laws of physics. The laboratory classes demonstrate and apply the ideas brought forth in theory sessions.

Industrial Instrumentation	**6.254**	**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 session.

Industrial Materials	**4.123**	**2**	**3**	**3**

An introduction to fabrication and engineering materials used in industry. Emphasis is placed on nonferrous 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.

Industrial Materials & Processes	**4.170**	**2**	**4**	**3**

An introduction to the materials used by modern industry to manufacture industrial products. The ferrous and nonferrous 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. From time to time industrial consultants are brought into the laboratory to orient the student to the application of industrial materials and processes in their firms.

Prerequisites: Machine Tool Processes 4.802. Welding 4.150 concurrently or approval of department chairman.

Industrial Quality Control	**6.287**	**2**	**4**	**4**

Simple quality control charts and calculations applied to mass produced items. Methods in testing and controlling effluents, industrial waste, sound, air and water quality. Selective topics in quality control of specific interest to individual students.

Industrial Television	**6.228**	**3**	**6**	**5**

A theory and lab course designed to cover television systems, scanning and synchronization, composite video signals frequency modulation, television receivers and monitors, picture tubes, power supplies, video amplification, practical design of video amplifiers, brightness-control and D-C reinsertions, video detection, automatic gain-control and sync-separation and deflection oscillator and amplifier circuits.

Industrial Television	**6.235**	**3**	**3**	**4**

A theory and lab course designed to cover television systems, picture transmission, scanning process and the composite signal, camera tubes and circuits, camera video amplifier systems, camera sync and deflection generators and several types of commercial industrial cameras with emphasis on circuit analysis, set-up procedure, operation and adjustment.

Inert Gas Welding Techniques	**4.164**	**2**	**8**	**4**

A continuation of Inert Gas Welding Processes with emphasis on exotic metals (titanium, zirconium, etc.)

Prerequisites: Inert Gas Welding Processes 4.247 or department chairman approval.

		LEC.	LAB.	TERM UNITS
Intermediate Accounting	**2.551**	**3**	**3**	**4**

Comprehensive study of accounting theory and of conventional procedures for measurement of income and presentation of financial data. A critical evaluation of accounting concepts, the conflicts and shortcomings. Brief and rapid review of data-collecting process, accounting for and controlling cash, receivables and current liabilities.

Intermediate Accounting	**2.552**	**3**	**3**	**4**

Continuation of Intermediate Accounting I. Investment in productive resources; inventories, plant and equipment and intangible assets. Issues of valuation and cost allocation.

Intermediate Accounting	**2.553**	**3**	**3**	**4**

Continuation of Intermediate Accounting II. Special problems peculiar to corporation: stockholder's equity, long-term debt, stockoption leases, pension plans and income tax allocation. Construction of accounting records from incomplete records, cash and other funds flow and analysis of financial statements.

Intermediate Arc Welding	**4.154**	**2**	**6**	**4**

A continuation of Basic Arc Welding covering ferrous and nonferrous alloys and welding procedures.

Intermediate Arc Welding	**4.241**	**2**	**12**	**6**

A continuation of Basic Arc Welding covering ferrous and nonferrous 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.

Prerequisites: Welding 4.240 or 4.150 or approval of department chairman.

Introduction To Business	**2.502**	**3**	**0**	**3**

An introductory course concentrating on the activities of the business organization and its operative and managerial functions. The course is intended to orient the student in the field of business.

Transfer Equivalent: BA 101

Introduction To Calculators	**2.658**	**0**	**2**	**1**

An introductory course to the use of printing and rotary calculators in the solution of simple mathematical problems encountered in routine business practices.

Introduction To Data Processing	**6.940**	**2**	**3**	**3**

An introduction for persons having had no prior knowledge of data processing. Includes a brief discussion of the history of data processing and the current uses of data processing. It covers how computers work and how people interface with computers and control them. In the lab the student is introduced to data processing machines and writing simple computer instructions.

Transfer Equivalent: BA 131

Introduction To Early Childhood Education	**7.129**	**2**	**2**	**3**

A beginning course in Early Childhood Education focusing on facilities, staff and program content for different preschool programs. Includes preschools, day care centers, Head Start, parent cooperatives and kindergartens. Weekly observations are scheduled.

Prerequisite: Development in Childhood I or consent of instructor.

Introduction To Fabrication Practices	**4.100**	**2**	**7**	**4**

An introductory course of observation and drafting. Students are assigned drawing projects and normally view the physical object of the drawing in order to develop visualization of the subject on the drafting board. Frequent field trips are made to observe modern methods of manufacturing, casting, forging, construction and assembly of local industry. Emphasis is placed on materials, methods of fabrication, glossary, scaling for drawing and visualization of fabricated objects or assemblies.

Introduction to Fire Protection	**5.100**	**3**	**0**	**3**

Philosophy and history of fire protection, history of loss of life and property by fire; role and 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.

Introduction to Law Enforcement	**5.200**	**3**	**4**	**4**

An overall introductory study of law enforcement. Includes a review of the philosophy and history of police work and of crime and police problems. It studies the organization and jurisdiction on local, state and federal law enforcement agencies. Surveys the professional career opportunities, the qualifications required and police ethics.

Introduction to Real Estate	**2.401**	**2**	**0**	**2**

An orientation to the Real Estate industry with emphasis on home purchasing, tax and legal considerations.

		LEC.	LAB.	TERM UNITS
Introduction to Specifications	**4.102**	**3**	**0**	**3**

Acquaints the student with common usage and practice in preparation and interpretation of specifications. Examinations of existing specifications covering current subjects are used whenever possible with the application of theory learned.

Introduction to Systems Procedures	**6.944**	**3**	**0**	**3**

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. Procedure analysis and improvement techniques, the role of systems and procedures in business management, systems charting, work simplification and measurement.

Introductory Concepts of Dental Assisting	**5.411**	**3**	**6**	**5**

A basic study of the dental assistant's role with reference to personal regimen, housekeeping, terminology, materials, instruments and equipment. Studies of dental materials and the principles of radiography also are included. Emphasis is placed on the qualifications necessary for success in the dental assistant field.

Inventory and Stock Room Control	**6.985**	**1**	**3**	**2**

This course covers all aspects of controlling inventories and supplies.

Jail Procedures	**5.204**	**2**	**0**	**2**

A detailed study of jail procedures including the legal basis for commitment of the prisoner and responsibility of the jail to society and the prisoner; the procedures for prisoner receiving, searching; identification and property control; the need for careful selection of jail personnel relating to temperament and personal habits; need for proper prisoner security and protection from contraband; proper feeding, physical and mental health; maintenance of maximum sanitation; proper selection and supervision of trusties, work crews and work releases. Include field trips to jail facilities.

Jig and Fixture Drafting	**4.231**	**0**	**8**	**3**

An advanced course in the area of tool drafting. In the lab work, the student uses ingenuity in the design and detailing of jigs and fixtures to perform a variety of machining operations. The adaption of common machine tools to high speed and high precision production is the main objective of this type of design.

Prerequisite: Sixth Term standing in Technical Drafting or consent of drafting department chairman.

Job Machining Practices	**4.845**	**3**	**12**	**7**

Covers typical job shop applications and sequence followed, with emphasis on speed and quality of finished product.

Prerequisite: Advanced Lathe Practices 4.833, Advanced Milling Machine Practices 4.837, Metal Fabrication and Finishing 4.174.

Juvenile Procedures	**5.218**	**2**	**0**	**2**

A study of the organization, function and jurisdiction of Police Juvenile Division and other juvenile agencies such as County Juvenile Centers. The processing and detention of juveniles, juvenile statutes, delinquency and juvenile crime prevention are reviewed in detail.

Key Punch I	**6.979**	**0**	**2**	**1**

In this course the student will learn the operation of a key punch machine. Instruction will cover the preparation and use of drum cards and extensive practice using key punch.

Key Punch II	**6.980**	**0**	**2**	**1**

This course is a continuation of Key Punch I. In this course the student will work on building speed and accuracy.

Prerequisite: Key Punch I or consent of instructor.

Laboratory Science (I)	**5.225**	**0**	**4**	**2**

A practical introduction to law enforcement and its uses of scientific knowledge and application of scientific principles. Visits are made to various law enforcement agencies to familiarize the student with organizational and operational concepts with emphasis on technical laboratory facilities and their contribution to modern criminalistics.

Laboratory Science (II)	**5.226**	**0**	**3**	**1**

Instruction and extensive practice in taking fingerprints, searching for, photographing and lifting latent fingerprints, the use of plaster casts and montage impressions in preserving physical evidence and use of various devices for collection and preservation of evidence. Includes arrests and searches in cases involving automobiles.

Laboratory Science (III)	**5.227**	**0**	**3**	**1**

A course involving police photographic techniques, operation of the police photographic laboratory and physical surveillance techniques (both stationary and moving). Includes planning and conduct of criminal arrests and raids.

Land Division and Mapping	**6.335**	**2**	**4**	**3**

An introduction to the basic principles of map layout, methods of platting and photogammetric procedures.

		LEC.	LAB.	TERM UNITS
Law Enforcement Information Systems	**5.209**	**3**	**0**	**3**

A survey of computerization and data processing of police record-keeping and communications systems employed in the use of those systems. The State of Oregon is implementing a system modeled after the National Crime Information Center. This course guides and assists officers and other police personnel in becoming better informed on how to effectively use such systems and improves the understanding and awareness of the information available and how to use it.

Layout Practices	**4.245**	**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 fittings will be included.

Legal Aspects of Real Estate	**2.400**	**3**	**0**	**4**

Fundamentals necessary for entry into the real state industry. Includes economic, social and legal bases of real estate transactions, factors of property rights, taxation, real estate instruments, finance and property ownership.

Librarian Lab	**6.984**	**0**	**6**	**2**

This course is a continuation of the lab portion of Librarian Operations I.

Prerequisite: Concurrent registration in Librarian Operations II.

Librarian Operations I	**6.982**	**1**	**3**	**2**

This course covers the methods of documenting and storing the various types of data processing records and data. The lab portion includes working with records and data in the data center.

Librarian Operations II	**6.983**	**1**	**0**	**1**

This course is a continuation of Librarian Operations I.

Prerequisite: Librarian Operations I.

Logging and Milling	**4.282**	**2**	**6**	**3**

Acquaints the student with the harvesting and transportation of logs and the manufacturing processes and machines in the lumber industry.

Logical Trouble Shooting	**4.274**	**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 given by the instructor. The use of equipment in servicing is strongly stressed in this course.

Machine Design	**4.603**	**3**	**2**	**4**

Design principles of machine elements and calculations in determining the size and shape of various machine parts. Includes factors which influence the selection of the materials to be used in designing such elements as beams, bearings, clutches, brakes, shafts, bushings, screws, rivets, gears, belts and flywheels. Attention is given to various types of loading conditions, stresses, deformations, fits, finishes and other factors which must be considered in the design of machine elements.

Prerequisite: Fourth Term standing or consent of instructor.

Machine Design Lab I	**4.232**	**0**	**8**	**3**

Cover practical design as related to the drafting room. Projects are selected that allow the student to develop sets of plans, specifications and related data for simple machines or sub-assemblies of larger machines. Production, costs and materials will be covered in addition to the design-drafting of the projects.

Prerequisite: Machine Drafting 4.223 or consent of Drafting department chairman.

Machine Design Lab II	**4.233**	**0**	**8**	**3**

A continuation of Machine Design Lab I, 4.232. More complex assemblies are covered in a manner similar to Machine Design Lab I. The application of cams, gears and descriptive geometry as related to machine drafting are stressed.

Prerequisite: Machine Design Lab I, Practical Descriptive Geometry 6.127, and Cam and Gear Drafting 4.225 or consent of department chairman.

Machine Drafting	**4.221**	**1**	**6**	**3**

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 application of problems in the area of orthographic projections, section views and auxiliary views.

Machine Drafting	**4.222**	**1**	**6**	**3**

A continuation of machine drafting 4.221. Lettering, line quality and drafting techniques continue to be stressed. Areas of study include the application of precision dimensioning, secondary auxiliary, isometric drawing and related pictorial drawings.

Prerequisite: Machine Drafting 4.221 or approval of department chairman.

		LEC.	LAB.	TERM UNITS
Machine Drafting	**4.223**	**1**	**6**	**3**

A continuation of Machine Drafting 4.222. Lettering, line quality, and drafting techniques continue to be stressed. Areas of study include revolutions, assembly and production drawings and an introduction to engineering graphics.

Prerequisite: Machine Drafting 4.222 or approval of department chairman.

Machine Shop Automation	**4.824**	**2**	**0**	**2**

A study of theory and practices of automation. Mechanical, numerical card and tape controls are studied. History, theories, trends and applications of automated machines are given attention. Field trips are scheduled to supplement classroom activities.

Prerequisites: Mathematics 4.202, Machine Tool Processes 4.804 or approval of department chairman.

Machine Shop Practices	**4.841**	**3**	**6**	**5**

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 includes advanced theory application and extended machine operations. Speed and accuracy are considered of paramount importance.

Prerequisites: Bench and Layout Practices 4.810, Machine Tool Processes 4.806, Mathematics 4.204, Drafting 4.101.

Machine Shop Problems	**4.820**	**3**	**0**	**3**

An applied mathematics course. Typical machine shop problems solved with the aid of mathematics. Sections covered include powers and roots of numbers, segments of circles, transportation of various formulae, practical trigonometry, geometrical figures, practical application of logarithms, figuring tapers, tolerances and allowances and gearing problems.

Machine Tool Processes	**4.802**	**2**	**3**	**3**

Basic machine tool operations, introduction to the principles involved in the operation of the basic machine tools, engine lathe, shaper, drill press, grinder and milling machine.

Machine Tool Processes	**4.804**	**2**	**3**	**3**

A continuation of basic Machine Tool Operations 4.802 involving typical setup and machining operations.

Prerequisite: Machine Tool Processes 4.802 or approval of department chairman.

Machine Tool Processes	**4.806**	**2**	**3**	**3**

A continuation of the Machine Tool Processes sequence. Introducing the student to production methods, inspection and quality control, generally increasing the student's understanding of common industrial practices.

Prerequisite: Machine Tool Processes 4.804 or approval of department chairman.

Manufacturing Processes	**6.606**	**2**	**3**	**3**

A background of knowledge covering various manufacturing materials and fundamental types of manufacturing methods as employed in cold working processes. Through lecture, demonstration and practical applications, the student is given 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 practice of numerical control for machine tools.

Manufacturing Processes	**6.610**	**2**	**3**	**3**

A background of knowledge covering the various casting and foundry practices. Through lectures, demonstrations and discussion the student becomes familiar with the production of simple molds, cores and castings and in basic heat treatment inspection and testing using both destructive and nondestructive methods.

Mapping and Platting	**4.131**	**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 department chairman.

Marketing Research	**2.106**	**3**	**0**	**3**

A course dealing with research design and the development of information gathering systems. Use of secondary and primary data and the interpretation of information gathered.

Mechanical Systems	**4.171**	**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.

Prerequisites: Practical Physics 4.300, Mathematics 4.204 concurrently, or approval of department chairman.

		LEC.	LAB.	TERM UNITS
Mechanisms	6.612	3	3	4

Deals with the analysis of the motion characteristics of mechanism of existing design and the applications of this study in the design of a mechanism to provide desired motion characteristics. In the motion study, absolute and relative velocities, accelerations and the use of instant centers are discussed. Centrodes are studied as they apply to mechanism. The use of belts and linkages are illustrated by problems. Cam layout is taken up in detail and appropriate problems are solved.

Prerequisite: Tech. Math 6.266, Physics 6.370 or approval of department chairman.

Medical Assisting, Advanced Procedures	5.606	2	2	3

Theory and practice of basic diagnostic and treatment procedures, collection, and preservation of specimens for diagnostic studies.

Prerequisites: Medical Assisting, Basic Procedures 5.602, Medical Terminology 5.600, or approval of department chairman.

Medical Assisting, Basic Procedures	5.602	3	3	4

A survey of the requirements and qualities for success as a medical assistant. Medical assisting 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.

Medical Machine Transcription	2.569	1	3	2

Typing from machine transcription to build speed, accuracy and understanding of medical case histories, clinical reports, medical insurance forms, medical correspondence and research materials.

Medical Machine Transcription	2.570	1	3	2

A continuation of Medical Machine Transcription 2.569.

Medical Office Management	5.607	3	0	3

Preparation for the medical assistant to handle finances and records with accuracy and efficiency and to provide an understanding of accounting, credits and collection that facilitate working with accountants, auditors and collection agencies in maintenance of good records. Includes a study of typical recording activities and systems in medical offices.

Medical Office Practice	5.609	0	16	3

Practice in clinical situations of medical assisting methods, procedures and techniques.

Prerequisites: Medical Office Procedures 5.602. Medical Terminology 5.600, or approval of department chairman.

Medical Office Procedures	5.604	3	0	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.

Medical Science	5.605	3	0	3

A survey of disease conditions, types of treatment and medical and surgical specialties.

Prerequisite: Medical Assisting, Basic Procedures 5.602, Medical Terminology 5.600, department approval or enrollment in Medical Secretary Curriculum.

Medical Secretary Procedures	2.566	2	3	4

Techniques, methods and procedures used in the medical office. Reception of patients, appointment making, filing and processing medical and health insurance records and forms.

Medical Terminology	5.600	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, tumors and descriptive terms by simple analysis of a word.

Prerequisite: Medical Assisting, Basic Procedures 5.602 or approval of department head.

Medical Terminology	5.610	3	0	3

A continuation of Medical Terminology 5.600.

Medical Transcription	5.603	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.

Mental Health Technology I Survey of Institutions & Introduction to Field Placements	5.436	3	0	3

A survey of community resources related to health and welfare problems including mental health facilities. An introduction to the historical development of roles and functions of various professional disciplines and emerging roles of paraprofessionals. Basic purposes and techniques of observation, interviewing, summarizing, recording and communicating are discussed. Professional ethics and confidentiality also are presented.

		LEC.	LAB.	TERM UNITS
Mental Health Technology II Group Dynamics & Process	5.437	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 himself as part of the group.

Mental Health Technology III Behavior Modification	5.438	3	0	3

Overview of behavior therapy and modification. A presentation of theoretical principles and application of behavior modification. Many students are given opportunities to utilize these techniques during practicum experiences.

Mental Health Technology IV Seminar-Practicum Experience	5.439	3	0	3

A three-hour session weekly to discuss agenda derived directly from work with agencies and clients.

Mental Health Technology V Transactional Analysis	5.440	3	0	3

A study of communication and personality utilizing theoretical foundations and practical applications of transactional analysis.

Mental Health Technology VI Independent Study	5.441	3	0	3

Based upon the competencies gained by students during their combined classroom and practicum experiences each student is required to submit a final paper. Included in this presentation is an identification of an existing human service need and a plan to meet such needs considering existing community and agency constraints.

Mental Health Technology and Practicum Erperience	5.446 & 5.447	0	12	4

Students spend at least 12 hours per week in a human service setting.

Merchandising	2.105	2	3	3

Study of application of principles of line and design to merchandise display problems of space utilization, improvisions, seasonal display, lighting and organization of merchandise in a display.

Metal Fabrication & Finishing	4.174	2	4	3

Designed to develop the concept of the production sequence of a completed part or machine from the fabrication and assembly processes to and including heat treating and final finishing. The student performs the procedure step by step in proper sequence, utilizing knowledge acquired in previous courses.

Prerequisites: Drafting 4.105, Machine Tool Processes 4.806, Welding 4.150, Industrial Materials and Processes 4.170.

Metallic Inert Gas Welding	4.248	1	3	2

Basic familiarity and skills in semi-automatic welding. A study of the principles involved in the equipment, materials and procedures is combined with demonstrations and supervised practice using standard industrial equipment. Solid and flux cored electrode wires will be used in typical industrial applications.

Prerequisites: Basic Arc Welding 4.240 or Welding 4.150 or approval of department chairman.

Metallurgy	6.602	2	3	3

Covers 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.

Methods of Supervision	4.287	3	0	3

Develops a basic knowledge in the techniques of supervision. The course covers all aspects of supervision such as leadership, organization, communications, morale, job analysis, job training, accident prevention, planning time studies, cost analysis, etc.

Prerequisite: Psychology of Human Relations 1.608.

Microwaves	6.242	2	3	3

Theory and laboratory course designed as an introduction to microwaves. Theoretical and practical approach to X-band techniques of measurements are emphasized. Waveguide elements and components, frequency measurement devices, ferrite devices and active microwave devices are studied. Transmission of energy from generator to receiver in a practical microwave communication system serves as the outline of the course presentation.

Prerequisite: Antenna and Transmission Lines 6.231.

Moot Court	5.214	2	3	3

A study of proper court room 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.

		LEC.	LAB.	TERM UNITS
Motor Vehicle Law	5.219	2	0	2

A study of the Oregon laws concerning motor vehicles and their operation, particularly as they relate to traffic patrol and enforcement of the traffic laws and codes.

Music for Young Children	7.130	3	0	3

An introduction to music and related activities appropriate to the preschool child; includes rhythm and dance, songs and games, use of instruments, use of music for concept formation, enjoyment and appreciation.

Natural Cover Fire Protection	5.151	3	2	4

The organization, methods, tactics, and strategy of safety controlling and extinguishing grass, brush and forest fires; use of hand tools, portable pumps, motorized apparatus, aircraft and helicopters, chemicals and other related equipment used in the suppression of natural cover fires; forest and wildland fire prevention programs.

Network Analysis	6.230	2	0	2

Develops new techniques and concepts in mastering problems encountered in design and maintenance of electronic circuits. Field theory is utilized. The concept of admittance is used in mathematical and graphical solutions.

Nursing I—II—III	5.701–5.702–5.703	4	12	8 (24 term units)

A study of the basic physio- and psycho-social concepts and principles of nursing practice. Emphasis is placed on meeting basic needs of people for health including basic nursing skills, communication, interpersonal and problem solving skills in a variety of nursing situations. Nursing I places an emphasis on physical aspects of health, Nursing II on mental aspects of health and Nursing III on physical, mental, social growth and developmental patterns in maternal and child health. The courses run concurrently. Theory and practice are correlated in appropriate areas.

Nursing IV–V	5.704–5.705	4	15	9 (18 term units)

A study of basic needs of children and adults with chronic or acute illnesses. Nursing IV includes a study of the rehabilitative process in meeting needs of people in a variety of nursing situations dealing with chronicity of illness. Nursing V is a study of fluid and electrolyte imbalance in a variety of nursing situations dealing with acuity in illness. The courses run concurrently. Theory and practice are correlated in appropriate areas.

Nursing VI	5.706	4	16	9

A study of basic needs of children and adults in more complex nursing situations. Includes the care of groups of people and the care of children and adults with multiple problems in crises and emergency situations.

Nursing VII	5.720	3		3

A study of trends and practice in the nursing profession emphasizing the present role of nursing in the promotion of individual, family and community health and its implication for social change.

Observing and Guiding Behavior I	7.131	2	2	2

Focuses upon individual patterns of growth and behavior of children with special attention to the techniques of recording and reporting; the role of the assistant in working with young children; techniques of guiding, participation, supervising and evaluating activities. Laboratory experiences are arranged.

Observing and Guiding Behavior II	7.132	2	2	3

A continuation of the experiences gained in Observing and Guiding Behavior I. Focus is still upon individual patterns of growth and behavior of young children with special attention to the techniques of recording and reporting; the role of the assistant in working with children; techniques of guiding, participating, supervising and evaluating activities. Lab experiences are included.

Prerequisite: Observing and Guiding Behavior I.

Office Management	2.643	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.

Office Procedures	2.641	2	2	3

Emphasis on duties involved in handling office supplies, mail and other transmittal services, using telephone and telegraph facilities, information sources; and preparing office records and reports. Office relations and job application are stressed.

On-the-Job Training & Seminar	2.676	1	8	3

Practical experience in the business office with a seminar to enable students to share, discuss and suggest solutions to problems developing on different jobs, including further training and instruction on job performance.

		LEC.	LAB.	TERM UNITS
On-the-Job Training & Seminar	2.677	1	4	2

Practical experience in the business office with a seminar to enable students to share, discuss and suggest solutions to problems developing on different jobs, including further training and instruction on job performance.

Operations Management Case Study	6.978	5	3	6

An in-depth course involving all aspects of data center planning, instruction and operation.

Prerequisite: Sixth Term standing or consent of department chairman

Operations Research	6.966	3	4	5

An introduction to operations research; its place in the corporate structure; concepts of simulation, model types and construction, simulation methods and techniques. Fortran is used.

Prerequisite: Data Processing Mathematics 6.942.

Operations Research	6.967	3	3	4

An elective which presents queuing theory, decision theory, assignment techniques, statistical and logarithmic methods of simulation, with case studies. Advanced Fortran methods.

Prerequisite: Operations Research 6.966.

Oxy-acetylene Cutting	4.242	0	2	1

A course in the use and care of oxy-acetylene cutting equipment.

Prerequisite: Current enrollment in the one-year welding curriculum or approval of department chairman.

Oxy-acetylene Welding	4.163	0	4	2

A continuation of Basic Oxy-Acetylene Welding with emphasis on special applications such as castings repair, hard surfacing, hard facing, etc. related to maintenance and repair work.

Personal Development	2.518	1	1	1

This course is recommended for women only and is the counterpart to course No. 2.564, Self-Management, which is for men only. It assists the student in recognizing her best potentials as an individual in a chosen vocation. Areas included are wardrobe selection and accessories, consumer education, care of skin and hair, exercise and diet, creation of pleasing image through poise and posture.

Personal Development Dynamics	7.133	2	2	3

A course designed to assist the student in reorganizing his or her best potentials as an individual in a chosen vocation. Areas include wardrobe selection and accessories, consumer education, care of skin and hair, exercise and diet and creating of pleasing image through poise and posture.

Personnel Principles and Supervision	2.685	3	2	4

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.

Photogrammetry	4.123	0	8	3

An introduction to mapping procedures using aerial photography. Map construction is developed using standard methods, equipment and symbols.

Prerequisite: Mapping and platting 4.131 or approval of department chairman.

PL·1	6.959	3	3	4

Provides a basic introduction to a high-level compiler language. Techniques of problem analysis, documentation, program coding and program testing.

Plane Surveying	6.101	2	6	4

A beginning study of surveying techniques. Fundamentals of chaining and leveling, care and adjustment of surveying instruments and office procedures. Provision is made by appropriate field work for practical application of the techniques learned.

Plane Surveying	6.103	2	6	4

A continuation of Plane Surveying 6.101. A study of the engineer's transit and its uses and an introduction to stadia surveying and leveling.

Prerequisite: Plane Surveying 6.101 and Tech. Math 6.261 or equivalent.

Plywood, Composite and Laminated Wood Products	6.285	2	2	3

Manufacture, properties, uses and testing of plywood particleboard, hardboard, insulation board and lumber laminates, plastic overlays and veneers. Commercial requirements, specifications and quality control.

		LEC.	LAB.	TERM UNITS
Police Administration	5.216	3	0	3

A study of budget, finance, care and handling of equipment of police agencies. Acquaints the working officer as well as command personnel of the problems and needs involved in administering a department. Provides a broader knowledge and understanding on the part of the law enforcement officer concerning other department operations of a parallel nature in the particular unit of government such as city government, county, etc.

Police Report Writing	5.223	3	0	3

One of the fundamental tools of any law enforcement agency is the written report. Covers the basic principles of composition and of forms of writing reports. Subjects covered are basic English, why reports are written, types of reports, format, effectiveness of writing styles, gathering and marshalling of facts, methods of writing the report, typing the report and visual aids.

Power Systems	4.172	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 concurrently or approval of department chairman.

Practical Descriptive Geometry	6.127	1	2	3

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 are stressed. Problems from industrial applications are studied.

Prerequisite: Drafting and Third Term standing or approval of department chairman.

Practical Nursing	5.520	4	12	8

A study and identification of the basic needs of self and patients. Skills involved in meeting these basic needs of patients. Introduces the roles and scope of functions of the practical nurse and her relation to other members of health and nursing teams; history, trends and organizations in practical nursing; ethical and legal implications; human relationships; personal and vocational growth.

Practical Nursing	5.521	6	24	14

A study of the needs of patients in illness. The implication of symptoms and treatment of common, representative conditions as related to basic nursing care and skills. Special diets, medications and elimination included as therapeutic needs. Students receive three weeks experience with children, three weeks nursing adults and four weeks in care of mothers and newborns. All students are able to share patient observations and experience in group conference to help integrate the age factor as it relates to needs of patients. The laboratory experiences also provide opportunity to make application of learning from the course Growth and Development which is offered concurrently.

Prerequisite: Practical Nursing 5.520, grade 2.0 or approval of department chairman.

Practical Nursing	5.522	6	24	14

Students assist in more complex nursing situations in meeting basic needs of patients. Care of the mentally ill, critically ill and chronically ill.

Prerequisite: Practical Nursing 5.521, grade 2.0 or approval of department chairman.

Practicum Experience	5.442, 5.443, 5.444	0	9	3 hrs. each

Students spend at least nine hours per week in a human service agency learning to work with client needs.

Practicum Experience	5.445	0	24	8

Students spend at least 24 hours per week in a human service agency.

Principles of Advertising	2.100	3	0	3

General principles involved in the psychological, social and economic phases of advertising and its relationship to other phases of marketing.

Principles of Marketing	2.104	3	0	3

An introductory course dealing with the consumer as the focal point of marketing activities and the application of the marketing management: pricing, products, distribution and promotion. Treats marketing as a total system.

Problems of Physical Evidence	5.220	3	3	4

Presentation of the function and purpose of the police crime laboratory, large and small, and the use of a mobile laboratory in the collection, preservation and transportation of evidence, including properly identifying it and wrapping it while preserving its evidential value. Familiarization of laboratory services available to police through crime laboratories of the state, F.B.I., large city departments and public and private laboratories. The study of laboratory techniques, capabilities, and limitations in the examination of firearms, clothing stains, blood, poisons, narcotics, automobiles, etc.

		LEC.	LAB.	TERM UNITS
Processes in Living	1.111	2	2	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.

Production MIG Welding	4.165	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: Inert Gas Welding Techniques 4.164 or department chairman approval.

Project Drafting	4.121	0	8	3

A continuation of the emphasis on industrial working conditions. Students are assigned projects (requiring use of all previously learned skills and principles) that familiarize them with many of the specialized fields of drafting. Instruction includes the basic methods for layout and detailing assemblies and sub-assemblies, reading specifications, common materials of fabrication, checking and back checking drawings and materials takeoffs. Drafting room standards of various industries are discussed. Speed and accuracy are considered of paramount importance.

Prerequisite: Fourth term standing or approval of department chairman.

Project Graphics	4.135	0	4	2

Gives some applications which may be found in Forestry and Civil Engineering. It includes the making of plot plans, working drawings and plotting of field data. The problems used are those which might be found in these fields as standard industrial applications.

Property Management	2.422	2	0	2

A study of the business practices and principles of managing the property of others for a fee. Includes such factors as maintenance and repairs and personnel supervision.

Prerequisite: Legal Aspects of Real Estate 2.400 and Real Estate Principles 2.410 or instructor approval.

Psychology for the Police Officer	5.217	3	0	3

A specialized study in the field of psychology as it applies to criminal behavior, including deviant and abnormal behavior and relating the law enforcement officer to his daily contacts with the public in the communities where he is employed.

Public Land Survey	6.134	3	0	3

A review of the laws and procedures for the surveying and subdivision of public lands including the preparation of field notes and plats.

Pulp and Paper Technology	4.281	3	3	4

Fundamental processes of the pulp and paper industry. Mechanical and chemical pulping, refining, screening, filling, sizing and sheet formation. Cooking liquors, recovery of chemicals, fiber recycling and testing of pulp and paper products.

Radio Principles	4.262	2	0	2

A study of the circuits and components which make up a radio. The principles of how and why they operate with studies of individual circuit problems in both vacuum tube and transistor radios.

Radio Principles Laboratory	4.263	0	6	2

A laboratory course covering the principles in the Radio Principles classes. The student builds up breadboard models of the circuits for analysis and components are changed to show the effects of these changes.

Radio Servicing	4.264	2	0	2

A study of overall radio circuits and the problems of these circuits. Service techniques, procedures and case histories are studied. The radios are broken into basic types for study and each type analyzed according to its peculiar characteristics.

Radio Servicing Laboratory	4.265	0	6	2

An application of the materials covered in the Radio Servicing theory class. Some circuits are breadboarded for analysis. The remaining time is spent on actual receivers—doing voltage measurements, resistance measurements, circuit tracing, alignment and general circuit analysis. Trouble is installed in radios to simulate actual field conditions.

Real Estate Appraisal	2.408	3	0	3

Theories, functions, and purposes of appraisal. Residential, income property and land appraisal; principles of valuation, including cost, market and income approach; techniques for determining condemnation, insurance, loan, purchase and sales values.

Prerequisite: Fundamentals of Real Estate Taxation 2.416.

Real Estate Appraisal	2.409	3	0	3

Continuation of Real Estate Appraisal 2.408 with emphasis on specific problem areas such as commercial appraisals, farm appraisals, industrial appraisals.

Prerequisite: Real Estate Appraisal 2.408.

		LEC.	LAB.	TERM UNITS
Real Estate Counseling	2.440	3	0	3

A case study approach to the problems of counseling with clients on real estate purchases, exchanges, speculation and investment.
Prerequisite: Sixth Term standing or instructor approval.

Real Estate Finance	2.406	3	0	3

Policies, problems and risks involved in financing and investing in various types of real property. Includes analysis of taxation, exchanges, sources of loan funds, institutional and government policies and instruments and methods of loan processing.
Prerequisite: Real Estate Principles 2.410 or instructor approval.

Real Estate Law	2.402	3	0	3

A practical study of Oregon real estate law emphasizing the more complex aspects of ownership, use and transferability of real estate as encountered by brokers and others who deal with real property. Covers contracts, titles, deeds, leases, liens, covenants, conditions, restrictions, easements, estates, probate and landlord-tenant relationships. Includes a review of significant Oregon cases.
Prerequisite: Real Estate Principles 2.410 or instructor approval.

Real Estate Practices	2.404	3	0	3

Covers the phases of day-to-day operations in real estate sales and brokerage such as procedures of listing, prospecting, advertising and financing. The closing process, escrow and sales methods and techniques are treated, with emphasis on the ethics, legal responsibility and function of the broker and salesman.
Prerequisite: Real Estate Principles 2.410 or instructor approval.

Real Estate Principles	2.410	3	0	3

A continuation of Legal Aspects of Real Estate 2.400 to further prepare for entry into the real estate industry. Includes a basic approach to brokerage and licensing as applied to the State of Oregon covering operating an office, selling and advertising. Introduces student to accept standards of ethical conduct, property management, titles, valuation, planning zoning, urban renewal, public housing and developments.
Prerequisite: Legal Aspects of Real Estate 2.400 or instructor approval.

Real Estate Salesmanship	2.415	2	0	2

A course which covers the characteristics and qualifications of successful real estate salesmen. Includes prospecting for sales, sales aids and tools, sales letters, records and reports, handling objections and public relations for salesmen.

Real Estate Salesmanship and Promotion	2.420	3	0	3

A study of all factors involved in promoting increased sale, including the analysis of advertising points, writing of realty ads and general promotion of sales, brochures, and mail advertising. Characteristics and qualifications of successful real estate salesmen, including prospecting for sales, sales aids and tools, sales letters, records and reports, handling objections and public relations for salesmen will be emphasized.

Real Estate Trends and Development	2.412	3	0	3

A study of the economic aspects of real estate land use and patterns of growth in Oregon. Provides a grasp of the dynamic factors that create values and an analysis of residential and urban planning, zoning and governmental control factors that influence development and market. Especially valuable as a background course and preparation for more specialized courses.
Prerequisite: Legal Aspects of Real Estate 2.400 and Real Estate Principles 2.410 or instructor approval.

Records Management	2.642	2	2	3

The study of principles of efficient control of business records including criteria for determining storage, disposition or retention and selection of equipment and supplies. Detailed instruction in alphabetic indexing and numerical systems is presented through lecture, reading and practical application.

Rescue and Emergency Care	5.120	3	2	4

A combination of first aid and rescue practices. Standard procedures in the aid and care of victims of the most common emergencies. First aid emphasis is on the handling of respiratory, burn, cardiac, fracture and shock victims. Practical methods of carrying out rescues in a number of types of emergencies are covered.

Retailing	2.108	3	2	4

Study of functions of retail store operation such as buying and selling, sales promotion, pricing, store operation, finance and control and personnel.

Route Survey	6.507	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 Computations 6.500, Fourth Term standing, or approval of department chairman.

		LEC.	LAB.	TERM UNITS
RPG for Programmers	6.988	2	2	3

This course consists of a study of all the features of the RPG I language. The student will write a number of computer programs, using RPG, that print reports and build and maintain files.

RPG—I	2.679	2	3	3

An introduction to RPG. Techniques of problem analysis, documentation, program coding and program testing.

RPG—II	2.681	2	3	3

An in-depth study, using RPG language, of reports relating to accounting courses that have been taken.
Prerequisite: RPG—I 2.679.

Salesmanship	2.109	3	0	3

A study of techniques of personal selling and the relationship of personal selling to advertising, sales promotion and customer services. Treats personal selling as a part of the total marketing system.

Sanitary Engineering	6.140	2	2	3

A study of domestic and industrial water supply and waste disposal collection, storage and treatment facilities.

Scaling Practices	3.617	2	6	4

Theory and principles of scaling. Considerable time is spent scaling logs for net scale. Types of defect and deductions for each are discussed in conjunction with mill observations.

Secretarial Accounting	2.651	3	0	3

Fundamentals of bookkeeping such as recording of transactions in journals, posting to ledgers, preparation of the trial balance and the use of controlling accounts and related schedules with practice in opening, adjusting and closing various professional sets of books.

Self-Management	2.564	1	1	1

This course is recommended for men only and is the counterpart to course No. 2.518, Personal Development, which is for women only. It is an exploration of the concept of self-management and the ability to develop courage, determination, leadership, initiative and imagination. Assistance will be given the student in understanding the value of good personality traits and appearance in getting ahead. Some time will be devoted to experience in how to conduct oneself in business and society.

Semi-Conductors	6.237	2	3	3

Covers 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 and practice.
Prerequisite: Transistor Circuits 6.211 or approval of department chairman.

Sheet Metal Drafting	4.230	0	8	3

A study of the production of sheet metal development patterns. Parallel line development, radial line development and triangulation are covered. Typical methods and materials of pattern development are stressed.
Prerequisite: Descriptive Geometry 6.127 or consent of department chairman.

Shop Projects	4.254	1	2	2

Practical experience in maintenance and repair of weld shop machines, accessories and fixtures. Selected fabrication and repair projects also are used to develop resourcefulness and confidence in the application of skills and knowledge developed in concurrent courses.
Prerequisite: Concurrent registration as a full-time student in the welding program or approval of department chairman.

Shop Safety	4.253	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.

Shorthand and Transcription	2.620	2	3	3

Beginning Gregg Diamond Jubilee Shorthand. A study of simplified principles which should enable the student to take simple dictation and transcribe it in the early part of the course.

Shorthand and Transcription	2.621	2	3	3

Advanced vocabulary, phrase building, and word building principles. All of these are based on the basic shorthand principles learned in Shorthand 2.620 and 2.622.

Shorthand and Transcription	2.622	2	3	3

A continuation of Shorthand Theory and Transcription 2.620. Deals with special forms, abbreviated forms, punctuation and compound words in connection with writing and transcribing exercises.

		LEC.	LAB.	TERM UNITS
Sketching	**4.118**	**0**	**3**	**1**

Technical sketching techniques and skills as used in drafting room and industrial applications. Laboratory time is devoted to identification of freehand sketching techniques and application.

Small Business Operation	**2.557**	**3**	**0**	**3**

A study of general functions and procedures used in operation of a small business.

Small Pump Installation	**4.295**	**3**	**4**	**4**

Practice and understanding of the skills necessary for pump installation and operation under a variety of conditions. Various pumps and pump installations are studied with an emphasis placed on efficient economical operation. Water flow measurement is studied to determine adequate well flow.

Soil Mechanics	**6.124**	**2**	**3**	**3**

A study of index of properties of soil, hydraulic, and mechanical properties; soid drainage and plastic equilibrium. Laboratory experiments and projects cover each phase of study.

Prerequisite: Second year standing or approval of department chairman.

Solid State Servicing	**4.272**	**3**	**3**	**4**

A study of the principles of trouble shooting solid state circuits. The students circuit trace and trouble shoot solid state circuit of projects constructed by the student. Commercial units also are worked on with emphasis on how the circuits operate and the effects of problems within these circuits.

Special Dictation and Transcription (Medical)	**2.567**	**2**	**3**	**3**

Further development of shorthand, typewriting, and English into efficient skills with emphasis on vocabulary of different business areas.

Prerequisite: Speed Building 2.549.

Special Dictation and Transcription (Medical)	**2.568**	**2**	**3**	**3**

A continuation of Special Dictation and Transcription 2.567 (Medical).

Special Dictation and Transcription (Professional)	**2.537**	**2**	**3**	**3**

Further development of shorthand, typewriting and English into effective skills with emphasis on vocabulary of different business areas.

Prerequisite: Speed Building 2.549.

Special Dictation and Transcription (Professional)	**2.538**	**2**	**3**	**3**

A continuation of Special Dictation and Transcription 2.537 (Professional)

Special Drilling Problems	**4.297**	**3**	**0**	**3**

An introduction to a variety of special drilling problems which might be caused by geological formations, tool or machine failure. A study is made of a variety of methods used for tool recovery.

Prerequisite: Sixth Term standing in the program or approval of department chairman.

Speed Building	**2.549**	**2**	**3**	**3**

A thorough and extensive review of shorthand, advanced principles, phrases and shortcuts. Emphasis on speed development in dictation and transcription, vocabulary development, efficient and correct procedure for preparation of business correspondence.

Prerequisite: Shorthand 2.620, 2.621, 2.622 or SS 111, 112, and 113.

State and Local Government	**5.221**	**3**	**0**	**3**

A study of state and local government structure and operations. Emphasis on understanding how governments are organized and operate, legal status and implications and interrelationship of governmental functions and agencies.

State Drilling Standards and Record Keeping	**4.293**	**3**	**0**	**3**

A survey the state standards as set down 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 also are included.

Strength of Materials	**6.105**	**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 Tech. Math 6.266 or equivalent.

		LEC.	LAB.	TERM UNITS
Strength of Materials	**6.128**	**2**	**3**	**3**

A study of index of properties of soil, hydraulic and mechanical combination of forces and their effects on various structural members. Includes a study of failure of structural connection and laboratory tests of materials.

Prerequisite: Strength of Materials 6.105 or equivalent.

Structural Analysis and Design	**6.130**	**1**	**3**	**2**

Determination of stresses induced by loads on structures of wood, steel, concrete; selection of appropriate constructional members and suitable connections; loading conditions causing compression, tension, shear, torsion and bending; practical design procedures relating to various structural members, beams, girders, columns and footings.

Prerequisite: Applied Mechanics 6.109; Strength of Materials 6.105.

Structural Drafting	**4.111**	**0**	**4**	**2**

Deals with the utilization of structural design data for the production of structural working drawings. Specifically, drafting and coordinating plans and details for a specific structure emphasizing layouts, procedures and terms standard to the construction industry.

Prerequisite: Sixth Term standing or approval of department chairman.

Subdividing and Community Planning	**2.438**	**2**	**0**	**2**

A study of the methods by which land is divided for more intensive utilization and the placing of restrictions of this land use. Covers provisions for water and sewage.

Prerequisite: Legal Aspects of Real Estate 2.400 and Real Estate Principles 2.410 or approval of instructor.

Supervised Field Experience I	**7.134**	**0**	**6**	**3**

Gaining experience in working with children in an organized group setting. Assisting with supervision of the various daily activities in a preschool program.

Prerequisite: Observing and Guiding Behavior II.

Supervised Field Experience II	**7.135**	**0**	**6**	**3**

A continuation of Supervised Field Experience I. Gaining experience in working with young children in an organized group setting. Assisting with supervision of the various daily activities in a preschool program. Includes some planning, executing and evaluating of curriculum materials.

Prerequisite: Supervised Field Experience I.

Survey Computations	**6.500**	**1**	**6**	**3**

A study of trigonometric and geometric formulas, mechanical computers and integrating instruments, area computations, traverse calculations, leveling and plotting surveys. Field trips and problems are used as needed.

Survey Law	**6.132**	**3**	**0**	**3**

A course in which the student studies the changes in requirements of a land surveyor, his legal responsibilities, obligations and liabilities.

System 360 Concepts and Job Control	**6.956**	**3**	**0**	**3**

This course consists of a study of the hardware and software components of the IBM System/360 Model 25 DOS System as well as an introduction to job control.

System 360 DOS Job Control	**6.949**	**3**	**0**	**3**

An advanced study of DOS Job Control. Includes linkage editor statements, dish and tape label statements as well as utilization of system libraries.

Systems Generation	**6.973**	**1**	**5**	**3**

A study of the generation of a Disk Operating System. The student will generate an operating system that will run the Computer Center computer.

Technical Illustration	**4.228**	**0**	**8**	**3**

Various methods of pictorial drawing. Exploded view drawings are stressed and pencil and ink shading is used. Both free-hand and template drawings are covered.

Prerequisite: Second year standing.

Technical Illustration	**4.229**	**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.

Television Principles	**4.266**	**3**	**0**	**3**

An introduction to the principles of television theory and circuits. 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.

		LEC.	LAB.	TERM UNITS
Television Principles Lab.	4.267	0	8	3

A laboratory study of the principles of the Television Principles theory class. Receiver circuits are traced and analyzed. Trouble shooting procedures are practiced. Time is spent on reading and interpreting schematics. Closed circuit TV is used to demonstrate signal origination.

Television Servicing	4.268	3	0	3

A study of the overall television receiver and the problems of the television receiver circuits. Service techniques, service procedures and case histories are studied. The theory of color TV and its allied circuits and the adjustments of the color receiver are studied.

Television Servicing Laboratory	4.269	0	8	3

Circuits of the television receivers are analyzed, both within the receivers and with the use of breadboards. Some of the breadboard models are substituted within the receiver for the like section of the receiver. Voltage readings, oscilloscope patterns, resistance readings and other testing procedures are used and results analyzed. Troubles are installed in TV receivers and practice gained in analyzing, determining and correcting troubles. Black and white sets are given complete audio and video alignment including tuners. Color TV receivers are worked on and the color controls set up.

Timber and Steel Construction	6.125	3	3	4

A study of steel and wood fasteners and connectors, timber beams and columns. Structural members are analyzed for design features. Field trips give visual application. Laboratory time is used for testing.

Prerequisite: Structural Analysis and Design 6.130 or equivalent.

Title Insurance and Escrow	2.423	3	0	3

An abstract of title as a chain of statements to the obligations of a title company in examination of the title and to insure against undiscovered defects, as used in most states, with emphasis on the title insurance policy and its four parts will be introduced. The student will understand the ordinary workings of the escrow agent; the significance of the third party to hold on deposit the valuable documents between the purchaser and seller until the terms of the contract shall be completely executed.

Tool & Fixture Design and Application	4.847	2	4	3

An overview of design and machining of tool fixtures and jigs. Application of drill jigs, special work holding devices, indexing work holders, templates for form turning and other application. Class time is devoted to design theory with laboratory time spent on design of special fixtures for production runs.

Prerequisite: Advanced Lathe Practices 4.833, Advanced Milling Machine Practices 4.837, Metal Fabrication and Finishing 4.174.

Tools and Equipment	3.605	1	2	2

Principles of the proper use of the hand tools and power tools most 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, sledges and chain saws.

Topographic Map Interpretation	4.130	2	2	3

A study of topographical map interpretation in relationship to water location including the principles governing interpretation of water table maps, developing water table profiles and the effect of surface topography.

Prerequisite: Concurrent enrollment in Hydrology for Drillers 4.294 or approval of department chairman.

Traffic and Patrol	5.210	3	3	4

Methods of movement of traffic with safety through the use of public education, enforcement and engineering. Also, the different phases of the uniform patrol division and its relationship to other divisions of the police department. The duties of the patrolman as the first officer at the crime scene are studied.

Transcribing Machine Operation	2.663	1	2	2

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.

Transistor Circuits	6.211	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 department chairman.

Transistor Fundamentals	6.210	3	3	4

Fundamentals of semiconductor physics, presenting the junction diode, 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 last half of the course. Laboratory experiments illustrate diode and transistor theory and operation.

Prerequisite: Electrical Theory DC 6.200 and Technical Mathematics 6.261, or approval of department chairman.

		LEC.	LAB.	TERM UNITS
Transistors & Circuits Theory	4.259	3	6	5

A study of electron 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 the course.

Tree Identification	3.610	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.

Tree Identification	3.611	1	2	2

A continuation of Tree Identification 3.610 with emphasis on the native hardwoods of Oregon. The common forest shrubs are included.

Trends In Nursing	5.523	2	0	2

Additional information as to the role and responsibility of a graduate practical nurse emphasizing such areas as interpersonal relationships, communications, legal aspects, code of ethics, nursing organization and career opportunities.

Typing	2.606	1	4	3

Required only of those students having had no previous typing or students typing fewer than 30 words per minute.

Beginning typing for those with no previous typing instruction or a minimum of typing instruction. Covers the parts and construction of the more common makes of typewriters, learning of the keyboard and the basic techniques of the touch system. The student should develop rhythm in his movements and attain a typing speed of at least 30 words per minute for an average grade of C.

Typing	2.607	1	4	3

A continuation of typing with emphasis on increasing the typing speed to at least 40 words per minute while mastering various forms of business communications.

Prerequisite: Successful completion of Typing 2.606 or by placement test. (30 wpm. net requirement must be met).

Typing	2.608	1	4	3

Corrective and acceleration drills to develop a minimum typing speed of 40 words per minute. Training in the various papers encountered in a business office.

Typing	2.633	1	4	3

Beginning typing for those with no previous typing instruction. It covers the parts and construction of the more common makes of typewriters, learning of the keyboard and the basic techniques of the touch system. The student should develop rhythm in his movements and attain a typing speed of 20 to 30 words per minute. Students with previous typing training may have this certified by a typing instructor or a test will be given at the college and 2.633 will be waived.

Typing	2.634	1	4	3

A continuation of Typing 2.633 with emphasis on increasing speed and accuracy. The student also receives training in the various papers encountered in a business office.

Use of Instruments I	4.260	2	0	2

A study of various instruments used in the servicing of radio, hi-fi, television and other equipment. The principles and the usage of the instruments are studied as they apply to the field of servicing. Both regular and short-cut methods of usage are discussed and demonstrated. The materials of the course closely follow the needs of the servicing courses and applications may be made in the service labs.

Use of Instruments II	4.261	2	0	2

A continuation of the Use of Instruments with more advanced instruments and methods.

Utilities and Data Management	6.965	2	2	3

This course consists in studying the various file organization methods as well as the criteria for determining one organization method over another and DOS Utility program used to manipulate and generate data files. Exercises will involve designing and creating data files, given various manual systems for controlling business records.

Prerequisite: System 360 Concepts and Job Control 6.956.

Vacuum Tubes and Circuits Theory	4.257	6	0	6

Theory of vacuum tubes and their applications to circuits. A study of the principles of operation of the various types of vacuum tubes, their symbols and usage. The use of tube characteristcs in practical work and the construction and use of load line. The study of basic amplifiers, power supplies and oscillator circuits. The math necessary for this course is taught as part of the course.

		LEC.	LAB.	TERM UNITS
Vacuum Tubes and Circuits Laboratory	**4.258**	**0**	**6**	**2**

Principles of construction of the vacuum tube, identification of tube elements, working with the theories taught in the theory classes, also basic trouble shooting procedures. The breadboard building of the amplifiers, power supplies and oscillator circuits studied in the theory classes.

Water Distribution Systems	**5.107**	**3**	**0**	**3**

Main systems: hydrants — size, gridding, distribution; residential and commercial districts; fire flow requirements; pumping stations; high pressure systems; storage tanks and cisterns; mobile supplies.

Wave Generation and Shaping	**6.234**	**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 circuits, and D-C restoration. Various multivibrator circuits, synchronization circuits, and applications of multivibrators are studied.

Prerequisite: Fourth Term standing or approval of department chairman.

Weld Shop Problems	**4.249**	**2**	**12**	**6**

A review and application of the welding, layout, and fabrication processes covered during the year. A study and practice of production welding methods, electrode consumption and method selection is included. Fabrication and assembly projects are selected to present typical layout, fabrication and production problems.

Prerequisite: Satisfactory completion of the first and second terms with concurrent registration in Tungsten Inert Gas Welding 4.247 and Metallic Inert Gas Welding 4.248 or approval of department chairman.

Welding	**4.150**	**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 oxy-acetylene and arc welding equipment; demonstrations and practice in welding, brazing and soldering ferrous and nonferrous metals and their alloys.

Welding for Certification	**4.167**	**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 gauge welding is included.

Prerequisite: Third Term standing and 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.

		LEC.	LAB.	TERM UNITS
Welding Metallurgy I	**4.247**	**2**	**0**	**2**

The fundamentals of metallurgy pertaining to welders. Covers identification of ferrous metals, distortion, stress relieving, flame straightening, hardening plus various metallurgical problems.

Prerequisite: Successful completion of term one of the one-year welding curriculum or approval of department chairman.

Welding Metallurgy II	**4.248**	**2**	**0**	**2**

A continuation of Welding Metallurgy I covering the common nonferrous metals and chromium alloys.

Wood Adhesives and Coatings	**6.279**	**3**	**2**	**4**

Basic physical and chemical nature of wood. Wood finishing, synthetic resins, adhesion principles and coating techniques. Quality control practices in paint, furniture and glue manufacturing plants and laboratories.

Wood Industry Economics	**4.286**	**3**	**0**	**3**

An introduction to the position of the wood industry in the economics structure; factors involved and production costs, marketing and sales.

Wood Preservation and Drying	**6.282**	**3**	**2**	**4**

Problems and control of wood-destroying agencies. Pressure and non-pressure treatments, fire-retardant chemicals. Methods of drying lumber and processed wood. Practices, equipment and plant visits.

Wood Products Marketing	**3.614**	**2**	**3**	**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 merchandising.

Prerequisite: Quality Control in Wood Products 6.287.

Wood Structure & Identification	**6.280**	**1**	**6**	**3**

Basic wood structure and the gross features of wood. Provides the student with the ability to identify the common species of the softwoods and hardwood in the form of solid wood and wood fiber.

Work Experience	**5.122–5.127**	**0**	**9**	**3**

A continuing on-the-job training program providing practical training in areas of firefighting skills, fire prevention work, apparatus and equipment, operation and maintenance, alarm and dispatching, station organization and management, responsibility and leadership, inspections, prefire planning and other fire fighting duties.

Zoning Ordinances	**2.425**	**3**	**0**	**3**

General provisions, public hearing, special set back lines, lot area, height restriction adjustments, nonconforming buildings and uses, conditional uses, planned unit development, variances, the zone change procedures and definitions which all realtors and city planners should be knowledgeable of, will be projected.

Prerequisite: Second Term standing or instructor approval.

College Staff . . .

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General Index

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