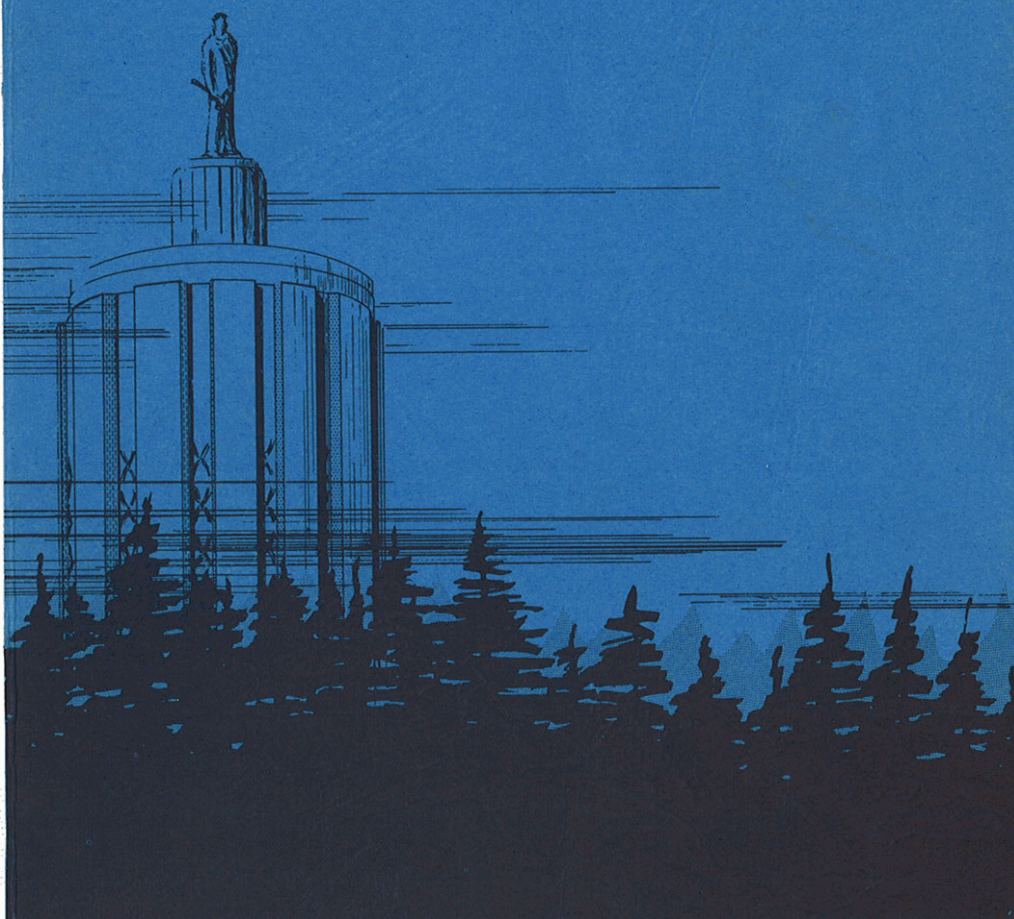


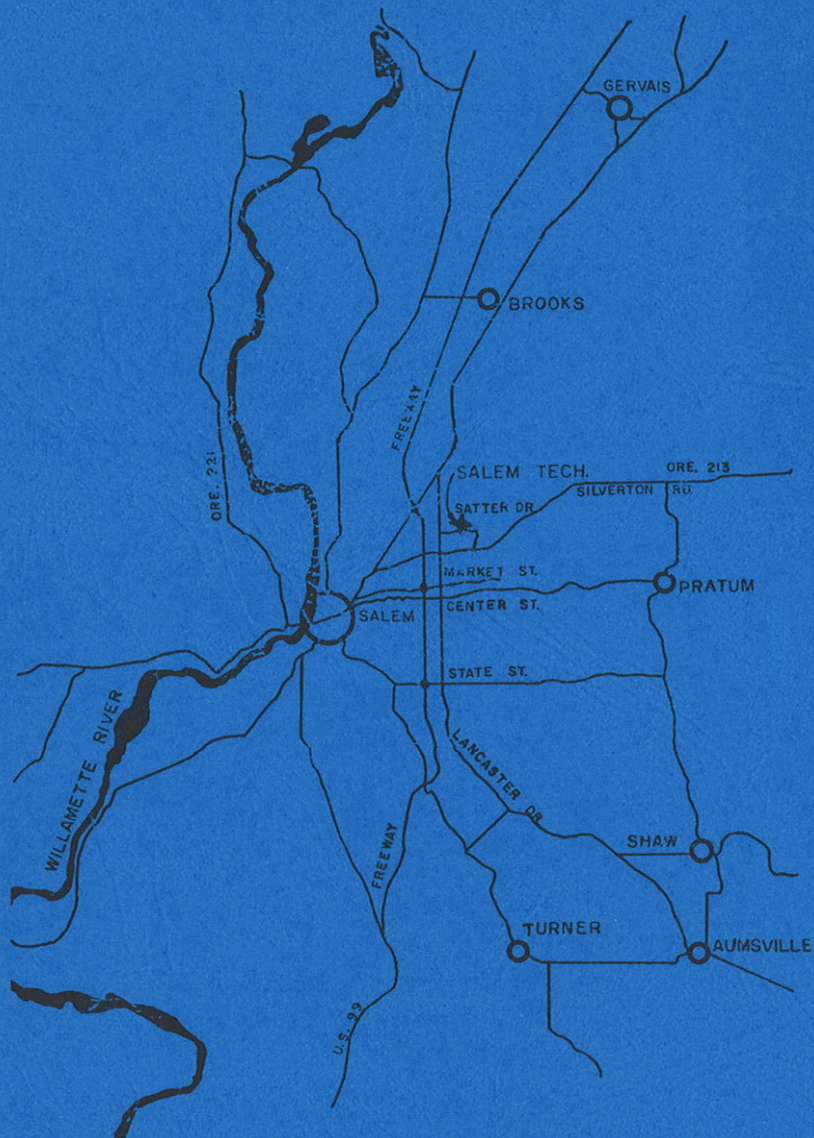
Salem TECHNICAL VOCATIONAL
Community College

SALEM PUBLIC SCHOOLS

CATALOG
1969 • 1970



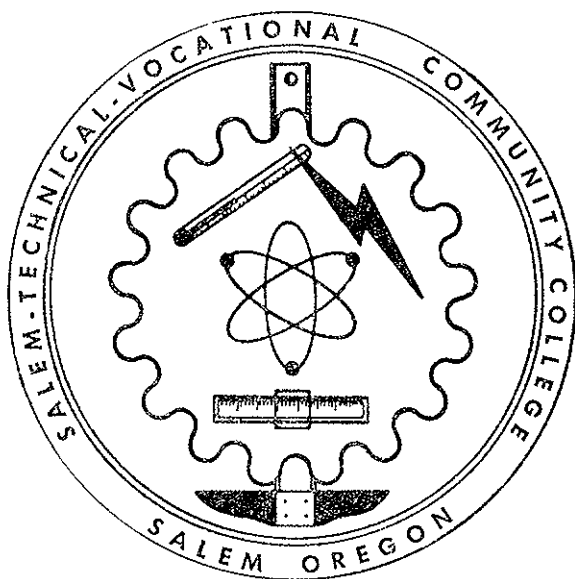
Highways leading to Salem Tech



SALEM TECHNICAL VOCATIONAL COMMUNITY COLLEGE

4389 Satter Drive N.E.

Salem, Oregon



CATALOG 1969-1970

A Public Area Education Center Serving
MARION, LINN and POLK COUNTIES

OPERATED BY SCHOOL DISTRICT No. 24J
SALEM PUBLIC SCHOOLS

School District 24J

BOARD OF EDUCATION

Maynard C. Shiffer, M.D., Chairman

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Salem Public Schools

Connell C. Ward, Deputy Clerk

PAUL F. WILMETH, Director
Technical Vocational Education

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Academic Calendar

1969-1970

Fall Term — 1969

| | | |
|------------------|--------------------|---|
| Sept. 23, 24, 25 | (Tue.-Wed.-Thur.) | Registration |
| Sept. 30 | (Tues.) | Last day to register without penalty |
| Sept. 29 | (Mon.) | Classes in regular session |
| Oct. 10 | (Fri.) | Last day to register for Fall Term |
| Oct. 10 | (Fri.) | Last day to make class or program changes |
| Nov. 3-6 | (Mon.-Thur.) | Midterm Evaluation |
| Nov. 11 | (Tue.) | Veterans' Day Holiday |
| Nov. 19 | (Wed.) | Last day to withdraw from classes without responsibility for grades |
| Nov. 27-30 | (Thur.-Sun.) | Thanksgiving Vacation |
| Dec. 18-19, 22 | (Thur.-Fri., Mon.) | Final Examination |
| Dec. 23 | (Tue.) | End of Fall Term |

Winter Term — 1970

| | | |
|---------------|-------------------|---|
| Jan. 5 | (Mon.) | Registration |
| Jan. 6 | (Tue.) | Classes in Regular Session |
| Jan. 6 | (Tue.) | Last day to register without penalty |
| Jan. 16 | (Fri.) | Last day to register for Winter Term |
| Jan. 16 | (Fri.) | Last day to make class or program changes |
| Feb. 9-12 | (Mon.-Thur.) | Midterm Evaluation |
| Feb. 25 | (Wed.) | Last day to withdraw from classes without responsibility for grades |
| Mar. 17-18-19 | (Tue.-Wed.-Thur.) | Final Examinations |
| Mar. 20 | (Fri.) | End of Winter Term |

Spring Term — 1970

| | | |
|-------------|-------------------|---|
| Mar. 30 | (Mon.) | Registration |
| Mar. 31 | (Tue.) | Classes in regular session |
| Mar. 31 | (Tue.) | Last day to register without penalty |
| Apr. 10 | (Fri.) | Last day to register for Spring Term |
| Apr. 10 | (Fri.) | Last day to make class or program changes |
| May 4-7 | (Mon.-Thur.) | Midterm Evaluation |
| May 20 | (Wed.) | Last day to withdraw from classes without responsibility for grades |
| June 5, 8-9 | (Fri., Mon.-Tue.) | Final Examinations |
| June 12 | (Fri.) | Graduation Exercises |
| June 12 | (Fri.) | End of Spring Term |

Fall Term — 1970

| | | |
|-------------|--------------|----------------------------|
| Sept. 24-25 | (Thur.-Fri.) | Registration |
| Sept. 28 | (Mon.) | Classes in regular session |

Faculty

- BERG, Betty M. (1963)
B.S. Oregon State University (1969). A.A. South Dakota State College. Ten years experience in business field.
- BETTERTON, Roe (1968)
Oklahoma A.&M. Junior College. M.A. University of Oregon (1968). M.Ed. University of Oregon (1959) B.S. University of Oregon (1955)
- BLANK, Franklin W., Jr. (1961)
B.A. Business Administration, Willamette University (1953). Nine years experience Business and Personnel Management.
- CIRCLE, Melvin W. (1957)
Sacramento Junior College. B.S. Oregon State University (1968)
- COLE, Henry T. (1963)
B.S. Oregon State University (1959). M.Ed. Oregon State University (1961).
- COOK, Conrad (1964)
Oregon State University. Registered Professional Land Surveyor. Certified Data Processor. Ten Years Business Ownership. Twelve Years Electronic Data Processing.
- DAVEY, Stanley H. (1965)
B.S., OSU (1969). Eleven years business and industrial experience.
- DAVIS, Vern F., (1968)
L.L.B., Columbus Law School, Washington, D.C., 1941. Thirty years employment with F.B.I.
- DEISCHER, Mildred E. (1964)
B.S. and M.S. Home Economics Education, Iowa State University. Advanced graduate study at Columbia University and Oregon State University. Experience in high school, college teaching, and in State Home Economics Education Supervision.
- DODGE, Thomas I. (1964)
Lewis & Clark College. Nine years sheet metal fabrication and installation experience.
- DUBY, Mary (1967)
B.S., Nursing Education, Lewis and Clark College (1953). M.S., Teaching and Supervision in Nursing Education, University of Oregon (1962).

- DUFFIELD, Donald E. (1967)
Drilling Contractor, 22 years experience. Supervisor in Division of Weights and Measures, State Department of Agriculture.
- ELLING, Kay C. (1967)
B.A. Willamette University (1960). M.Ed. Willamette University (1964).
- EMERSON, Willard B. (1966)
B.S. Oregon State University (1963). Seven years fire-fighting and fire training experience.
- FOSTER, Margaret L. (1967)
Names-Boling Business College (1943). B.S. Oregon State University (1949) .
- FOSTER, Selma A. (1963)
Tabor College, Hillsboro, Kansas. Ten years dental assisting experience, Certified Dental Assistant.
- GUSTAFSON, Jean (1962)
B.S. Oregon State University. M.S. Oregon State University (1940). M.L., Librarianship, University of Washington (1967).
- HADLEY, Marlyn M. (1966)
Seventeen years experience in mechanical field. Twenty-two years foreman and supervisor in industrial fields.
- HATFIELD, Gladys E. (1963)
B.S. Nursing Education, University of Oregon (1947). M.Ed. Oregon State University (1967). Six years teaching, five years experience in nursing.
- HESSMAN, Robert D. (1967)
Selected Navy schools. (U.S. Navy Retired).
- JEPSEN, Leland R. (1965)
B.S. Mechanical Engineering, Oregon State University (1950). Three years testing experience, U.S. Navy. Four years experience in construction.
- LATHAM, Robert S. (1964)
B.A. Colorado State College at Greeley (1950). M.Ed. Oregon State University (1963). Five years business experience, five years drafting and design experience.
- LEACH, Alvin M. (1966)
M.S. Oregon State University (1959).

- LOYD, A. Leon (1965)
B.S. Oregon College of Education (1964). Eight years experience in Data Processing.
- MAGUREN, Janet D. (1967)
Diploma, Emanuel Hospital School of Nursing (1953). B.S. University of Oregon (1962). Twelve years nursing experience.
- NEWMAN, Leah H. (1968)
Swedish Hospital School of Nursing (1931). B.S. University of Oregon (1962).
- NICHOLS, Victor (1962)
University of Washington. Seven years experience in machinist field, thirteen years boat building foreman, purchasing agent, and engineering.
- PINCKNEY, Dale E. (1968)
B.S. University of Utah (1947). Ten years teaching Social Science in the Montana University System.
- POHL, Leslie (1965)
Technical School of Budapest (1941). Los Angeles Valley College. Twenty-eight years experience as a tool and die-maker.
- RICE, Leonard (1960)
B.S. Industrial Arts Education, Oregon State University, (1959). Four years industrial experience, three years as Senior Draftsman.
- RONER, Bennie D. (1966)
Twelve years television sales and repair.
- ROSS, Gertrude L. (1965)
Southern California College. B.S. Southern Oregon College (1965). M.S. Oregon State University (1968). Ten years experience in cartographic drafting and photogrammetry.
- RUBY, George R. (1965)
B.B.A. Business Administration, University of Minnesota (1950) M.Ed. University of Oregon (1963). Ten years experience in distributive business and management.
- SALTER, Merlin E. (1966)
B.S. Oregon College of Education (1965). Elementary and secondary teaching, extensive automobile repair and maintenance experience.
- SHOWERS, Keith M. (1965)
B.S. Oregon College of Education (1963).
- SHOWERS, Lloyd D. (1966)
B.S. Oregon College of Education (1958).
M.Ed. (1965).

SLONECKER, William (1963)

A.A. Olympic Junior College. B.S. Oregon State University (1968). Ten years experience as an electronics technician working on microwave and telemetering installations.

SMITH, Joseph W. (1963)

B.S. Forest Management, University of Washington (1951)
M.Ed. Oregon State university.

SODERSTROM, Duayne M. (1966)

B.S. Forest Products, Oregon State University (1951).

WADE, DeVon D. (1967)

A.B. Asbury College (1952). M.A. University of Kentucky (1960).

WILBRECHT, Lloyd C. (1963)

A.A. North Dakota State School of Science. Purdue University, Mississippi Southern University, selected Air Force schools (U.S. Air Force, retired).

WILMETH, Paul F. (1952)

B.E. Oregon State University (1957). M.Ed. Oregon State University (1960).

PART TIME INSTRUCTORS PREPARATORY

Listella, Guido
Moorhead, George

Tebeau, William
White, Roger

SUPERVISORY, TECHNICAL

Hughes, William C.
Johnson, Kerby
Loynes, Ernest

Shattuck, Gordon
Stevens, R. E.

HOME ECONOMICS EDUCATION FOR ADULTS

Arnold, Gail
Buren, Richard
Chapman, Lella
Clausen, Doris
Erickson, Dorothy
Elwell, Lois
Ficklin, Alice
Gailbraith, Joan

Hardwick, Dorothy
Myers, Jo
Murphy, John
Redeye, Norma
Shepard, Violet
Varnum, Sara
Vejlupok, Lillis
Whittman, Floyd

Advisory Committees of Salem Technical Vocational Community College

CIVIL AND STRUCTURAL ENGINEERING TECHNOLOGY COMMITTEE

| | |
|---------------|-------------------|
| Borgen, Arlen | Johnson, Art |
| Elgin, Robert | Kuykendall, Dick |
| Hill, Willis | Light, Bill |
| Jenkins, John | Sigurdson, Edward |

DATA PROCESSING TECHNOLOGY COMMITTEE

| | |
|--------------------|---------------|
| Barker, Sam | Lind, Dorothy |
| Fisher, Neal | Mead, Jim |
| Frey, Wallace | Peer, Donald |
| Lenz, Max | Tanner, Jim |
| LeTourneux, George | Warmoth, Ed |

DENTAL ASSISTANT PROGRAM COMMITTEE

Biemler, Jessie, C.D.A.
Carr, Paul, D.M.D.
Golay, Vernon, D.M.D.
Kleen, Glenn, D.M.D.
O'Brien, John, D.M.D.
Schultz, Mabel, C.D.A.
Van Santen, Boyd, D.M.D.

DRAFTING TECHNOLOGY COMMITTEE

| | |
|------------------|-----------------------|
| Hadley, Darrell | Smith, Howard |
| Hoog, Carl G. | Stone, Frank T. |
| Nelson, Harald | Tope, Douglas O. |
| Nordquist, Swede | Youngman, C. Lawrence |

ELECTRONIC ENGINEERING TECHNOLOGY COMMITTEE

| | |
|----------------------|-------------------|
| Anderson, Frank | Fields, Eugene A. |
| Beach, Gerald | Hornicak, Dick |
| Bolf, Edward | Kleinke, Norman |
| Christianson, Robert | Lamer, Al |

FIRE PROTECTION TECHNOLOGY COMMITTEE

| | |
|-------------------|------------------|
| Boeckstiegel, Lee | Norris, Cecil |
| Brown, Dave | Shedeck, Glen |
| Carpenter, Larry | Stender, Leonard |
| Harvey, Pete | Teegarten, Irv |
| Milligan, Don | Wood, Howard |

FOREST INDUSTRIES TECHNOLOGY COMMITTEE

| | |
|-------------------|------------------|
| Alley, Tom | Emory, Newell |
| Bergman, Morris | Hughes, William |
| Boeckstiegel, Lee | Patronsky, L. A. |
| Ellicott, Ross | Tribbet, Vance |

HOME ECONOMICS COMMITTEE

| | |
|------------------------|---------------------|
| Bunnell, Mrs. James E. | Mackie, Miss Anne |
| Covey, Mrs. Marvin | Mort, Mr. Charles |
| Danskin, Mr. Richard | Swinkles, Mrs. John |
| Hillstrom, Mrs. E. W. | Thorp, Mrs. Harry |
| Leth, Mrs. Walter | |

LAW ENFORCEMENT COMMITTEE

| | |
|------------------|---------------------|
| Darby, James | Pepper, Darrell L. |
| Dougherty, Henry | Prinslow, Robert J. |
| Hyer, Karel | Skinner, Leonard |
| Jones, Woodrow | Utterback, Jack |
| Kemp, Frank | Wilkerson, John |
| Mekkers, W. L. | |

MECHANICAL-MACHINE TECHNOLOGY COMMITTEE

| | |
|------------------|-------------------|
| Baker, Irvin | Hochstetler, Glen |
| Butler, Roger | Kritzburg, Jim |
| Cooper, Ken | Lucas, Bill |
| Cummings, Truman | Steele, Walt |
| Dixon, Bob | |

MEDICAL ASSISTANT PROGRAM COMMITTEE

| | |
|-----------------|-------------------|
| Barry, Linda | Prudente, Lucille |
| Clarke, Beulah | Shangle, Verne |
| Much, Joe, M.D. | |

NURSING EDUCATION COMMITTEE

| | |
|--------------------------|------------------------|
| Colburn, Helen, L.P.N. | Shiffer, Maynard, M.D. |
| Detering, Etta Mae, R.N. | Sly, Loretta, L.P.N. |
| Edwards, Thomas A., M.D. | Vittato, Pauline, R.N. |
| Lefor, Fae, R.N. | Wade, Mary, R.N. |
| McGlynn, Robert | Wedel, Irwin |
| Murray, Helen, R.N. | Wilton, Carmella, R.N. |

OFFICE OCCUPATIONS PROGRAM COMMITTEE

| | |
|------------------|--------------------|
| Carter, Lee | Lorenz, Jewell |
| Currie, Deryl G. | Ruettgers, Helen |
| Jaeger, Don | Seeley, Marian |
| Kleinschmit, Kay | Stiles, Everett B. |
| Kroeplin, Mercel | |

REAL ESTATE TECHNOLOGY COMMITTEE

| | |
|-------------------|----------------|
| Burch, Frances | Wagner, Irving |
| Crawford, Gordon | Wallman, Lou |
| Graham, Josephine | Webb, Norman |
| Healey, William | Zeek, Charles |
| Thurlwell, Harvey | |

WELL DRILLING TECHNOLOGY COMMITTEE

| | |
|-------------------------|---------------------|
| Bartholomew, William S. | Robinson, Harry A. |
| Berry, Howard E. | Strasser, Robert L. |
| Huffman, Harlin M. | Sweet, Harold |
| Mackanness, Frank G. | |

General Information

History

In 1955, the Salem Technical Vocational Community College was established as a post high school institution to meet the increasing technical and vocational needs of Marion, Polk and parts of Linn counties. The school's first curriculum, February 1955, was in Machine Shop Practices.

Since 1955 programs have been added and expanded to cover many of the technologies, business and health occupations. A complete listing of the present offerings can be found in the table of contents of this catalog.

In 1963 the college was moved from an old site in West Salem to the present facilities on Satter Drive N.E. There is a continuing planning effort to design and develop additional space as the needs increase and the funds are available.

Through legislative and school board action, the name was changed, effective July 1, 1965, from Salem Technical Vocational School to Salem Technical Vocational Community College.

Salem Technical Vocational Community College is financially supported by funds from the State Department of Education, local School District and student tuition.

Definition and Philosophy

One of today's most rapidly growing demands on education is for technical and vocational training to support business and industry and its required skilled manpower needs. The Salem Technical Vocational Community College's purpose is to meet these demands through its one and two year post high school programs. The college anticipates and provides for local needs with well planned and well organized occupational centered curricula in the field of technical and vocational education.

Instructors at Salem Tech are selected primarily for their proven competency in the occupational or subject area in which they will teach, educational background, and ability to impart this knowledge to others. The Technical-Vocational instructors retain contact with their occupational areas through close cooperation with advisory committees and summer employment in the field or area in which they teach.

The underlying philosophy of Salem Technical Vocational Community College is to develop and instruct youth and adults for useful employment as skilled and/or highly skilled individuals in recognized occupations. The development of skills,

abilities, attitudes, working habits and appreciations are all coordinated so that the graduate will enter and advance in his chosen occupation, and participate in the social and civil life of the community.

Academic Regulations and Information

Admission

Admittance to Salem Technical Vocational Community College will be granted to any person 16 years of age or older, who has completed high school requirements for a diploma or its equivalent (equivalency may be established by evaluation of experience and/or training, or by testing); and those who are able to benefit from specific courses.

APPLICATIONS

To be admitted to a program a student must submit an application for admittance accompanied by a \$10.00 registration fee which is applied to the student's tuition.

TRANSCRIPTS

An official transcript of all high school and college records must be forwarded for evaluation.

APPLICATION FOR HEALTH OCCUPATIONS

Applications for enrollment in one of the Health Occupation programs must be made as early as possible. Selection of students enrolling in the Health Occupations is made in the early spring preceeding the fall in which the classes will start.

ENTRANCE EXAMINATIONS

All persons applying for entrance are required to take the entrance exam which will be scheduled at the earliest possible date after the application is submitted. These examinations indicate ability to do the work required and form a basis for counseling and guidance. Remedial programs may be required to overcome deficiencies, before entrance into certain programs will be permitted.

Tuition and Fees

Tuition and fees are payable in full at time of registration. Fees and tuitions are established and maintained as low as possible in keeping with the type and scope of the program. All fees and tuitions are collected and deposited with the Clerk of District 24J.

TUITION

| | |
|--|----------------------|
| Full time students (In district) | \$ 95.00 per term |
| Full time students (Out of district) | \$120.00 per term |
| Part time students | \$9.00 per term unit |
| Out of state tuition | \$650.00 per year |

LATE REGISTRATION

A late registration fee will be charged in accordance with the schedule shown below:

| Day of Term | Late Registration Fee |
|---------------------|-----------------------|
| 1st and 2nd | No charge |
| 3rd | \$1.00 |
| 4th and 5th | 3.00 |
| 6th to closing date | 5.00 |

Registration will be closed after the day indicated in the Academic Calendar. The college will not accept student registration for the current term after this day, except part time extension courses or special programs.

OTHER FEES

| | |
|------------------|-----------------|
| Locker | \$2.50 per term |
| Transcript | \$.25 |

Each student is entitled to his first three copies free. Additional copies will be furnished at the rate of \$.25 ea.

| | |
|----------------------|--------|
| Laboratory Fee | Varied |
|----------------------|--------|

Laboratory fees will be assessed as necessary.
A schedule of lab fees will be made available at the time of registration.

BOOKS and SUPPLIES

Books and supplies may be purchased at the college book store. The cost of books and needed supplies will vary, depending on the program. For example, in the Electronics program, a full time student can expect to purchase, during the first year, approximately \$60.00 worth of texts and roughly a like amount for necessary supplies.

TUITION REFUND

Students who withdraw from the college and who have complied with the regulations governing withdrawals are entitled to a partial refund of tuition, depending on the time of withdrawal. All refunds are subject to the following regulations. Any claims for refund must be submitted on a withdrawal form at the time of withdrawal. Refunds in all cases are calculated from the date of application for refund and not from the date when the student ceased to attend classes. The following is the refund schedule adopted by the School District and is followed by the college. The registration fee will be

deducted before applying the below refund schedule in all cases of withdrawal from school, both in day and evening, part and full time.

| | |
|------------------------------|----------------|
| During the first week | 90% of tuition |
| During the second week | 70% of tuition |
| During the third week | 50% of tuition |
| During the fourth week | 40% of tuition |

Grading Systems

Grades will be issued at the close of each term as indicated by the calendar. The letters A,B,C,D,F,W, and Inc., will be used to designate relative standing in the class; A denotes outstanding performance; B of lesser excellence, but above average; C as average work; D as below average, but still passing; F as failure; W indicates withdrawal; and Inc. as incomplete.

All work that is graded is assigned a numerical point value as follows: A, 4 points per term unit; B, 3 points per term unit; C, 2 points per term unit; D, 1 point per term unit; F, 0 points per term unit. The grade-point average (GPA) is the quotient of total points divided by total term units for which grades are issued. Incompletes and withdrawals are disregarded in the computation of grade-point averages.

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 course work, an incomplete may be awarded. The incomplete must be made up within the following term and the grade recorded in the college office or the incomplete becomes an F. It is the student's responsibility to take care of incompletes.

WITHDRAWAL

Students may withdraw from a course on or prior to the date indicated in the Academic Calendar by filing an official withdrawal form with the college office. A student who registers for a course is considered in attendance unless an official withdrawal has been made.

Students are expected to process withdrawals in person. Proper withdrawal is reflected on the student's transcript and protects his academic record.

Graduation Requirements

Upon satisfactory completion of all program and degree requirements, students in two year programs are awarded an Associate in Science Degree. Students who are enrolled in one year programs are, upon satisfactory completion of program and certificate requirements, awarded the Certificate of Completion.

Awarding of the degrees and certificates is made at a formal graduation exercise which is conducted the evening of the date for graduation indicated in the Academic Calendar.

Approval for awarding the Associate in Science Degree was given to the Salem Technical Vocational Community College by the Oregon State Board of Education.

REQUIREMENTS FOR ASSOCIATE IN SCIENCE DEGREE

The Associate in Science Degree is awarded after the following requirements are met:

1. Satisfactory completion of all planned course work within a two year program.
2. Cumulative grade point average (GPA) of 2.00 or above.
3. A minimum of 18 term hours of selected general education courses or an approved equivalent.

REQUIREMENTS FOR CERTIFICATE OF COMPLETION

The Certificate of Completion is awarded after the following requirements are met:

1. Satisfactory completion of all planned course work within a one year program.
2. Cumulative grade point average (GPA) of 2.00 or above.

APPLICATION FOR GRADUATION

Students who are enrolled in two year programs working towards an Associate in Science Degree must submit written application for graduation and degree by the end of the first week of the winter term of the graduating year.

Students in one year programs for which the Certificate of Completion is awarded must submit written application for graduation and certificate before the end of the second week of spring term.

Graduation application forms are available at the college office.

Credit

The specific subject matter areas in the technical programs carry weight designated in TERM UNITS of credit. A term unit generally represents one hour of the student's time each week for one term in a theory class or three hours in a lab. The number of class/laboratory hours per week for any course may be found in the sequence of courses for each program of studies and in the section of course descriptions.

Placement

An active placement policy is maintained by the school for the benefit of the graduates of our programs. Instructors in each program are in close touch with employers and job

opportunities in the area. Every possible assistance will be given students completing programs and who are seeking jobs in the occupations for which they have been training.

The college coordinates and plans employer recruitment visitations to the school for the convenience of its graduates each spring.

Evaluation

Certain courses within the curriculum may be waived if, upon evaluation of student's past experience by the Faculty Committee, it is felt that he has covered this area. When formal credit is desired after such evaluation, an examination over content of the waived courses would be required by complying with procedures already established for such. It is the student's responsibility to petition for examination for formal credit.

Petitions for examination for formal credit must be submitted to the college office within the first week of the term in which the course is offered.

No student may take a special examination for credit in the term in which he completes his requirements for graduation.

Transcripts from other post high school institutions showing subject matter completed that compares with our offerings will be honored and credit automatically given, upon evaluation of such courses by the Faculty Committee.

Counseling and Guidance

A counseling and testing service is available to each interested individual in the community, without obligation. The service is offered to assist individuals with selecting and planning their educational futures in areas commensurate with their abilities and interests.

This service is especially helpful to young people who experience difficulty in choosing an occupation or an area of training.

Student Living Accommodations

The college does not provide living accommodations, nor does the college assume any responsibility for arrangements the student may make. However, there is a wide range of living accommodations available in the Salem area.

The two Salem daily papers are the best sources of currently available accommodations.

Veterans

All programs listed are approved by the Veterans' Administration and the State Department of Veterans' Affairs for the payment of educational benefits to eligible veterans. Twenty-five hours per week of class (inc. lab. time) in some programs and thirty hours per week of class (inc. lab. time) in others is

considered a full load for a veteran. The veteran is responsible for paying the cost of the tuition, fees, books, etc., directly to the college regardless of whether subsistence checks have been received or not.

Dates for payments of costs cannot be waived because of delay in receiving benefits. Prospective veteran students may obtain applications for educational benefits from the Book-keeper's Office at the College.

Financial Aid

Financial aid at Salem Technical Vocational Community College is available in a variety of forms and scholarships.

SCHOOL DISTRICT 24J SCHOLARSHIP

The School District has authorized a scholarship for graduates of the district high schools. The scholarship is awarded on the basis of scholastic ability, financial need, and citizenship. Information can be obtained at the college general office.

CLARK & GROFF ENGINEERS, INC., STUDENT LOAN PROGRAM

A loan of up to \$100 per month will be made available to students while maintaining satisfactory grades in their second year of Civil-Highway Engineering Technology program. Candidates for this loan are selected by a committee of three members on the basis of need, and probability of achievement in the field of Civil or Highway Engineering Technology. Requirements for application are that the student has an accumulative grade point average of at least 2.5 for the first year and a G.P.A. of at least 2.5 in the third term. Parents or guardians of minors will be required to co-sign any note.

Evening Program

The evening classes at Salem Tech consist of both full and part time students, persons just out of high school and employed workers who have been out of school for some time. The evening student may elect to take up an entirely new occupation, or enroll in a Math or Science class for refresher purposes.

The requirements for entrance into the evening program are that the individual be 16 years of age or over and be capable of profiting from the instruction. Tuition for the classes will vary depending on the number and type of courses. Generally the cost is \$9.00 per term unit.

The classes normally are held between the hours of 6 p.m. and 11 p.m.

Further information on the evening program such as cost, time, and availability of various classes can be obtained by

calling or writing Salem Tech, 4389 Satter Drive N.E., Salem, Oregon 97303. Phone 585-6166, Extension 341. Evenings 585-6176.

Special Programs

On occasion, agencies on the federal, state or local level will have cooperative training or retraining programs in session at the college.

FEDERAL MANPOWER DEVELOPMENT AND TRAINING ACT PROGRAMS

Certain programs are offered in conjunction with the Employment Service of Oregon through the Federal Manpower Training Act. Under the Act, the Employment Service makes the initial selection of the individuals for training in the programs.

For additional information concerning the college, the programs or the courses offered, Telephone, Write or Visit

SALEM TECHNICAL VOCATIONAL COMMUNITY COLLEGE

4389 Satter Drive NE, Salem, Oregon
Telephone 585-6166, Ext. 341; Evenings 585-6176

Data Processing Technology

The objective of the Data Processing Program is to provide training for individuals preparing for positions in the various fields of business data processing and for those persons already engaged in the field who desire further training.

The Technology is comprised of two options; Computer Operations Technician and Computer Programming Technician.

Computer Operations Technician Program provides for concentrated study and experience in data center operation and management. The data center has a medium size computer, operated in a job shop environment serving business and scientific users.

Computer Programming Technician Curriculum provides concentrated study and experience in business data processing, computer programming management procedures and management science. The second year provides options for systems programming, advanced business systems programming, and operations research.

Upon satisfactory completion of the requirements in the Data Processing PProgram, an Associate in Science degree will be awarded, signifying that the student is prepared to effectively function and advance in the many job areas of the Data Processing Field.

Associate in Science Degree:

Computer Operations Technician: Required 107 Term Units

Computer Programmer Technician:

Required 107 Term Units

Computer Operations Technician Curriculum

First Year

Term 1

| Hours Work Class | Lab. | Course Title | Course No. | Term Units |
|---------------------|------|---|---------------|---------------|
| 3 | | Accounting | 6.923 | 3 |
| 3 | | Communication Skills | 1.101 | 3 |
| 3 | | Data Processing Mathematics | 6.941 | 3 |
| 2 | | Introduction to Data Processing | 6.940 | 2 |
| 3 | | Fundamentals of Computers & Programming | 6.948 | 3 |
| 3 | 3 | Computer Programming (PL/1) | 6.959 | 4 |

Term 2

| | | | | |
|---|----|--|-------|---|
| 3 | | Accounting | 6.924 | 3 |
| 3 | | Communication Skills | 1.104 | 3 |
| 2 | | Data Processing Mathematics | 6.943 | 2 |
| 2 | | Computing Systems | 6.956 | 2 |
| 2 | 12 | Computer Center Operations | 6.951 | 6 |
| 3 | | Business and Public Administration | 2.502 | 3 |

Term 3

| | | | | |
|---|----|----------------------------------|-------|---|
| 3 | | Accounting | 6.925 | 3 |
| 3 | | System 360 Concepts | 6.958 | 3 |
| 3 | | Data Processing Management | 6.946 | 3 |
| 2 | 12 | Computer Center Operations | 6.952 | 6 |
| 3 | | Technical Report Writing | 6.126 | 3 |

Second Year

Term 4

| | | | | |
|---|----|--|-------|---|
| 3 | | Introduction to Systems and Procedures | 6.944 | 3 |
| 3 | | System 360 DOS/TOS Facilities | 6.975 | 3 |
| 2 | 2 | Computer Programming (PL/1) | 6.960 | 3 |
| 3 | | Introduction to Psychology | 1.606 | 3 |
| 3 | 12 | Computer Center Operations | 6.953 | 6 |

Term 5

| | | | | |
|---|----|--|-------|---|
| 3 | | Automated Systems and Procedures | 6.945 | 3 |
| 1 | 2 | Analysis of Operation Problems | 6.972 | 2 |
| 3 | | Business Economics | 1.524 | 3 |
| 3 | | DOS & OS Operations Management | 6.957 | 3 |
| 3 | 12 | Computer Center Operations | 6.954 | 6 |

Term 6

| | | | | |
|---|----|--|-------|---|
| 5 | 3 | Operations Management Case Study | 6.978 | 6 |
| 2 | | Data Communications | 6.976 | 2 |
| 3 | | Psychology of Human Relations | 1.608 | 3 |
| 2 | 12 | Computer Center Operations | 6.955 | 6 |

Computer Programming Technician Curriculum

First Year

Term 1

| Hours | Work | Course Title | Course | Term |
|-------|------|---|--------|-------|
| Class | Lab. | | No. | Units |
| 3 | | Accounting | 6.923 | 3 |
| 3 | | Communication Skills | 1.101 | 3 |
| 3 | | Data Processing Mathematics | 6.941 | 3 |
| 2 | | Introduction to Data Processing | 6.940 | 2 |
| 3 | | Fundamentals of Computers & Programming | 6.948 | 3 |
| 3 | 3 | Computer Programming (PL/1) | 6.959 | 4 |

Term 2

| | | | | |
|---|---|--|-------|---|
| 3 | | Accounting | 6.924 | 3 |
| 3 | | Communication Skills | 1.104 | 3 |
| 3 | | Data Processing Mathematics | 6.942 | 3 |
| 3 | 6 | Computer Programming (Cobol) | 6.961 | 4 |
| 2 | | Computing Systems and Job Control | 6.949 | 2 |
| 3 | | Business and Public Administration | 2.502 | 3 |

Term 3

| | | | | |
|---|---|--------------------------------------|-------|---|
| 3 | | Accounting | 6.925 | 3 |
| 3 | | Introduction to Psychology | 1.606 | 3 |
| 3 | | System 360 Concepts | 6.958 | 3 |
| 3 | 6 | Computer Programming (Fortran) | 6.962 | 4 |
| 3 | | Data Processing Management | 6.946 | 3 |
| 3 | | Technical Report Writing | 6.126 | 3 |

Second Year

Term 4

| | | | | |
|---|---|--|-------|---|
| 3 | | Cost Accounting | 2.576 | 3 |
| 3 | | Introduction to Systems & Procedures | 6.944 | 3 |
| 3 | 4 | Operations Research | 6.966 | 5 |
| 2 | 2 | Utility and Sort Programs | 6.965 | 3 |
| 3 | 6 | Computer Programming (Assembler) | 6.969 | 5 |

Term 5

| | | | | |
|---|---|--|-------|---|
| 3 | | Automated Systems and Procedures | 6.945 | 3 |
| 3 | | Business Economics | 1.524 | 3 |
| 3 | | Computer Operating Systems | 6.973 | 3 |
| | | Select One | | |
| 3 | 3 | Operations Research | 6.967 | 4 |
| 3 | | Business Law | 2.320 | 3 |
| | | Select One | | |
| 3 | 6 | Computer Programming (Assembler) | 6.970 | 5 |
| 3 | 6 | Computer Programming (Cobol) | 6.963 | 5 |

Term 6

| | | | | |
|---|---|--|-------|---|
| 3 | | Psychology of Human Relations | 1.608 | 3 |
| 3 | | Computer Operating Systems | 6.974 | 3 |
| | | Select | | |
| 2 | | Data Communication | 6.976 | 2 |
| 1 | 4 | Computer Graphics | 6.977 | 3 |
| | | Or | | |
| 3 | 4 | Operations Research | 6.968 | 5 |
| | | Select One | | |
| 3 | 6 | Computer Programming (Assembler) | 6.971 | 5 |
| 3 | 6 | Computer Programming (Cobol) | 6.964 | 5 |

Real Estate Technology

This curriculum is designed to provide depth of understanding in the requirements of the occupations in and associated with the real estate industry.

Real Estate Appraisal, Property Management, Real Estate Finance, Title and Escrow, Sales and Brokerage are among the many various fields of interest considered in this curriculum.

The two year program in Real Estate will present, in broad scope, the information essential for satisfactory performance in these occupational areas.

An evening program is also provided, presenting courses which will be of value to persons presently employed in real estate occupations and who wish to enhance their professional ability by continued study. The instructors for these courses are selected for their prominence in the various specialized areas of real estate.

Upon satisfactory completion of the requirements of the Real Estate Technology Program, an Associate in Science Degree will be awarded.

Associate in Science Degree: Required 104 Term Units

Real Estate Curriculum

First Year

Term 1

| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
|----------------|--------------|----------------------------------|---------------|---------------|
| 3 | | Introduction to Psychology | 1.606 | 3 |
| 3 | 3 | Accounting | 6.920 | 4 |
| 1 | 4 | Typing | 2.606 | 2 |
| 3 | | Business Mathematics | 6.918 | 3 |
| 3 | | Communication Skills | 1.101 | 3 |
| 1 | 3 | Business Machines | 2.660 | 2 |

Term 2

| | | | | |
|---|---|------------------------------|-------|---|
| 3 | | Business Mathematics | 6.919 | 3 |
| 3 | | Communication Skills | 1.104 | 3 |
| 3 | | Real Estate Principles | 2.400 | 3 |
| 3 | | Business Law | 2.320 | 3 |
| 3 | 3 | Accounting | 6.921 | 4 |
| 3 | | Business Economics | 1.524 | 3 |

Term 3

| | | | | |
|---|---|----------------------------------|-------|---|
| 3 | | Real Estate Principles | 2.410 | 3 |
| 3 | | Real Estate Finance | 2.406 | 3 |
| 3 | | Real Estate Law | 2.402 | 3 |
| 2 | 2 | Public Speaking | 1.610 | 3 |
| 3 | 3 | Accounting | 6.922 | 4 |
| 3 | | General Education Elective | | 3 |

Second Year

Term 4

| | | | | |
|---|---|--|-------|---|
| 1 | 4 | Real Estate Salesmanship | 2.415 | 3 |
| 2 | 3 | Real Estate Practices | 2.404 | 3 |
| 3 | | Real Estate Trends and Developments | 2.412 | 3 |
| 1 | 4 | Elements of Design and Construction | 2.418 | 3 |
| 3 | | Fundamentals of Real Estate Taxation | 2.416 | 3 |

Term 5

| | | | | |
|---|---|--|-------|---|
| 2 | | Subdividing and Community Planning | 2.438 | 2 |
| 2 | 3 | Real Estate Appraisal | 2.408 | 3 |
| 2 | 3 | Real Estate Sales Promotion | 2.420 | 3 |
| 1 | 3 | Property Management | 2.422 | 2 |
| 3 | | Fundamentals of Exchanging | 2.417 | 3 |

Term 6

| | | | | |
|---|---|--|-------|---|
| 2 | 3 | Real Estate Appraisal | 2.409 | 3 |
| 3 | 2 | Commercial and Investment Properties | 2.419 | 4 |
| 2 | 8 | Real Estate Work Experience | 2.431 | 6 |
| 5 | | Real Estate Counseling | 2.440 | 5 |
| 2 | 3 | Construction Estimating | 6.110 | 3 |

Civil and Structural Engineering Technology

The objective of the Civil and Structural Program is to prepare students to meet the requirements for entrance into various branches of employment in Civil and Structural Engineering fields and for advancement in the chosen field. Graduates will find excellent opportunities for careers in the wide areas of highway, bridge, dam, and factory development and construction. Comprehensive practical training in areas of surveying, strength of materials and construction activities provide application of the theoretical and mathematical courses which are taken concurrently.

The training is sufficiently broad so that the student can use the program as a base for further study 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 in the employ of certain federal, state, or city organizations.

On a construction project that is being planned, Civil and Structural Technicians may help in estimating costs, preparing specifications for materials, or participating 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 an Associate in Science Degree will be awarded, signifying that the student is prepared to effectively function and advance in the many job areas of Civil and Structural Engineering.

Examples of opportunities are listed here:

Construction Foreman
Assistant Engineer
Senior Draftsman
Surveyor
Civil Engineering Technician
Structural Designer
Supt. of Construction

Inspector
Construction Estimator
Cost Estimator
Contractor's Assistant
Technical Writer
Computer
Engineering Aide
Instrument Man, Survey

Associate in Science Degree: Required 104 Term Units.

Civil and Structural Engineering Technician Curriculum

First Year

Term 1

| Hours | Work | Course Title | Course No. | Term Units |
|-------|------|-----------------------------|------------|------------|
| Class | Lab. | | | |
| 3 | 2 | Applied Physics | 6.370 | 4 |
| 2 | 6 | Plane Surveying | 6.101 | 4 |
| | 4 | Drafting | 4.101 | 2 |
| 3 | | Technical Mathematics | 6.261 | 3 |
| | 2 | Slide Rule Operations | 6.137 | 1 |
| 3 | | Communication Skills | 1.101 | 3 |

Term 2

| | | | | |
|---|---|-----------------------------|-------|---|
| 2 | | Engineering Problems | 6.138 | 1 |
| 3 | 2 | Applied Physics | 6.371 | 4 |
| 3 | | Communication Skills | 1.104 | 3 |
| | 4 | Drafting | 4.105 | 2 |
| 2 | 6 | Plane Surveying | 6.103 | 4 |
| 3 | | Technical Mathematics | 6.262 | 3 |

Term 3

| | | | | |
|---|---|--------------------------------------|-------|---|
| 1 | 2 | Practical Descriptive Geometry | 6.127 | 2 |
| 2 | 3 | Applied Mechanics | 6.109 | 3 |
| 1 | 6 | Surveying Computations | 6.500 | 3 |
| 2 | 3 | Strength of Materials | 6.105 | 3 |
| 3 | | Technical Mathematics | 6.266 | 3 |
| 3 | | Technical Report Writing | 6.126 | 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 Computations and Estimates | 6.528 | 2 |
| 1 | 6 | Route Surveying | 6.507 | 3 |
| 3 | | Introduction to Psychology | 1.606 | 3 |

Term 5

| | | | | |
|---|---|--------------------------------------|-------|---|
| 2 | 2 | Hydraulics | 6.112 | 3 |
| 2 | 3 | Construction Estimating | 6.110 | 3 |
| 1 | 3 | Structural Analysis and Design | 6.130 | 2 |
| 3 | 3 | Timber and Steel Construction | 6.125 | 4 |
| 3 | 3 | Fortran Computer Programming | 6.931 | 4 |
| 3 | | General Education Elective | | 3 |

Term 6

| | | | | |
|---|---|--|-------|---|
| 2 | 2 | Hydraulics | 6.114 | 3 |
| 2 | 3 | Concrete Construction and Design | 6.123 | 3 |
| | 4 | Structural Drafting | 4.111 | 2 |
| 2 | 2 | Sanitary Engineering | 6.140 | 3 |
| 2 | 3 | Soil Mechanics | 6.124 | 3 |
| 3 | | General Education Elective | | 3 |

Electronic Engineering Technology

The objective of the Electronic Technician Program is to prepare individuals for careers in the broad field of Electronics. The program was especially designed and planned to give the graduate a broad and comprehensive understanding and practical know-how, without sacrificing depth and some specialization for entrance into such areas of the electronic industry as: research and development; radio and television; micro-wave station operations and maintenance; and in commercial and domestic maintenance and many other areas using vacuum tubes and semi-conductor circuits.

The student is given a strong background in Electronics Theory, Mathematics, and Physics to enable him to handle complex technical work. The student spends the major portion of his school time gaining proficiency in the practical application of the theory; analyzing circuits; development of 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 of 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 an Associate in Science Degree will be awarded, signifying that the student is prepared to effectively function and advance in the many job areas of the Electronic Technology.

Examples of opportunities are listed here:

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

Associate in Science Degree: Required 110 Term Units.

Electronic Engineering Technician Curriculum

First Year

Term 1

| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
|----------------|--------------|-----------------------------|---------------|---------------|
| 3 | 3 | Electrical Theory DC | 6.200 | 4 |
| | 2 | Slide Rule Operations | 6.137 | 1 |
| 3 | | Technical Mathematics | 6.261 | 3 |
| 3 | 2 | Applied Physics | 6.370 | 4 |
| | 3 | Drafting | 4.101 | 2 |
| 3 | | Communication Skills | 1.101 | 3 |

Term 2

| | | | | |
|---|---|---|-------|---|
| 3 | 3 | Electrical Theory AC | 6.202 | 4 |
| | 2 | Engineering Problems | 6.138 | 1 |
| 3 | | Technical Mathematics | 6.262 | 3 |
| 3 | 2 | Applied Physics | 6.371 | 4 |
| 3 | 3 | Vacuum Tube and Transistor Analysis | 6.223 | 4 |
| 3 | | Communication Skills | 1.104 | 3 |

Term 3

| | | | | |
|---|---|-------------------------------------|-------|---|
| 3 | 3 | Electrical Circuits | 6.206 | 4 |
| 3 | 6 | Amplifier Circuits and Design | 6.217 | 5 |
| 3 | | Technical Report Writing | 6.126 | 3 |
| 3 | | Technical Mathematics | 6.266 | 3 |
| 3 | 2 | Introductory Chemistry | 6.275 | 4 |

Second Year

Term 4

| | | | | |
|---|---|---------------------------------------|-------|---|
| 3 | | Electrical Mathematics | 6.115 | 3 |
| 2 | 6 | Oscillators Circuits and Design | 6.225 | 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 Television | 6.235 | 4 |
| 2 | 3 | Advanced Industrial Electronics | 6.248 | 3 |
| 2 | 3 | Microwaves | 6.242 | 3 |
| 3 | | General Education Elective | | 3 |

Mechanical Engineering Technology

This curriculum is designed to provide depths of understanding in the technical requirements of occupations in modern mechanical design and production. This program provides the educational background necessary for many functions in such jobs as: design draftsmen, 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; and extensive knowledge of a field of specialization with an understanding of the engineering and scientific activities that distinguish the field; a facility with mathematics and proficiency in the application of physical science processes that are pertinent to the individual's field of technology.

The graduate may enter the field of manufacturing, experimental shops, and development labs, performing such tasks as re-designing 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, an Associate in Science Degree will be awarded, signifying that the student will be prepared to effectively function and advance in the many job areas of the technology.

Examples of opportunities are listed here:

| | |
|---|-----------------------------------|
| 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

First Year

Term 1

| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
|----------------|--------------|------------------------------|---------------|---------------|
| | 2 | Slide Rule Operations | 6.137 | 1 |
| 3 | | Technical Mathematics | 6.261 | 3 |
| 3 | 2 | Applied Physics | 6.370 | 4 |
| | 4 | Drafting | 4.101 | 2 |
| 3 | | Communication Skills | 1.101 | 3 |
| 1 | 3 | Welding | 4.150 | 2 |
| 3 | 2 | Introductory Chemistry | 6.275 | 4 |

Term 2

| | | | | |
|---|---|-------------------------------|-------|---|
| 2 | 3 | Metallurgy | 6.602 | 3 |
| 2 | 3 | Manufacturing Processes | 6.606 | 3 |
| | 2 | Engineering Problems | 6.138 | 1 |
| 3 | | Technical Mathematics | 6.262 | 3 |
| 3 | 2 | Applied Physics | 6.371 | 4 |
| | 4 | Drafting | 4.105 | 2 |
| 3 | | Communication Skills | 1.104 | 3 |

Term 3

| | | | | |
|---|---|--------------------------------------|-------|---|
| 2 | 3 | Manufacturing Processes | 6.610 | 3 |
| 2 | 3 | Strength of Materials | 6.105 | 3 |
| 1 | 2 | Practical Descriptive Geometry | 6.127 | 2 |
| 3 | | Technical Mathematics | 6.266 | 3 |
| 3 | | Technical Report Writing | 6.126 | 3 |
| 2 | 3 | Applied Mechanics | 6.109 | 3 |

Second Year

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 |

Industrial-Mechanical Technician Program

The courses in this program are designed to provide the basic knowledge, skills and information needed by persons preparing to enter the industrial mechanical field of employment.

This is a two-year program providing for specialization in the second year. The first year of the program provides for common industrial mechanical training which applies in several fields. After successful completion of the common first year the student may elect to continue in one of the options which will be offered.

Second year options provide for concentrated study and skill development in these specific fields.

Upon satisfactory completion of the requirements in the Industrial-Mechanical Technician Program, an Associate in Science Degree will be awarded.

Job opportunities for the graduate of this program are found in job shops, specialty shops, general machine or welding shops, production shops, and maintenance departments of large manufacturing plants such as the paper industry, or others of similar nature.

Associate in Science Degree: Required Term Units:
Machine Shop Option 103, Drafting Option 104
Welding and Fabrication Option 101

First Year

Term 1

| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
|----------------|--------------|----------------------------------|---------------|---------------|
| 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 | 4 | Bench and Layout Practices | 4.810 | 3 |
| 2 | 3 | Machine Tool Processes | 4.802 | 3 |

Term 2

| | | | | |
|---|---|----------------------------------|-------|---|
| 2 | 2 | Mathematics | 4.202 | 3 |
| 3 | | Communication Skills | 1.104 | 3 |
| | 1 | Shop Safety | 4.253 | 1 |
| 3 | 2 | Practical Physics | 4.300 | 4 |
| | 4 | Drafting | 4.105 | 2 |
| 2 | 3 | Machine Tool Processes | 4.804 | 3 |
| 3 | | General Education Elective | | 3 |

Term 3

| | | | | |
|---|---|--|-------|---|
| 2 | 2 | Mathematics | 4.204 | 3 |
| 2 | 4 | Industrial Materials and Processes | 4.170 | 3 |
| 1 | 3 | Welding | 4.150 | 2 |
| 2 | 3 | Machine Tool Processes | 4.806 | 3 |
| 3 | 2 | Practical Physics | 4.302 | 4 |
| 3 | | General Education Elective | | 3 |

Industrial-Mechanical Second Year Options

MACHINE SHOP

Term 4

| Hours Work Class | Lab. | Course Title | Course No. | Term Units |
|------------------|------|------------------------------|------------|------------|
| 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 Practices | 4.841 | 5 |

Term 5

| | | | | |
|---|---|--|-------|---|
| 2 | 3 | Hydraulic and Pneumatic Systems | 4.173 | 3 |
| 2 | 4 | Metal Fabrication and Finishing | 4.174 | 3 |
| 2 | 4 | Advanced Lathe Practices | 4.833 | 3 |
| 2 | 4 | Advanced 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 |
| 3 | | Employer-Employee Relations | 4.500 | 3 |
| 3 | | General Education Elective | | 3 |

WELDING AND FABRICATION

Term 4

| | | | | |
|---|---|---------------------------------------|-------|---|
| 3 | 3 | Mechanical Systems | 4.171 | 4 |
| 3 | 4 | Power Systems | 4.172 | 4 |
| 2 | 3 | Blueprint Reading and Sketching | 4.244 | 3 |
| 1 | 3 | Electric-Arc Welding | 4.160 | 2 |
| 1 | 3 | Oxygen-Acetylene Welding | 4.161 | 2 |

Term 5

| | | | | |
|---|---|---------------------------------------|-------|---|
| 2 | 3 | Hydraulic and Pneumatic Systems | 4.173 | 3 |
| 2 | 4 | Metal Fabrication and Finishing | 4.174 | 3 |
| 2 | 6 | Electric-Arc Welding | 4.162 | 4 |
| 2 | 3 | Metallurgy | 6.602 | 3 |
| 3 | | General Education Elective | | 3 |

Term 6

| | | | | |
|---|---|--|-------|---|
| 1 | 3 | Tungsten Inert Gas Welding | 4.247 | 2 |
| 1 | 3 | Metallic Inert Gas Welding | 4.248 | 2 |
| 2 | 6 | Welding for Certification | 4.166 | 4 |
| 2 | 2 | Welding for Production and Economy | 4.165 | 3 |
| | 4 | Fabrication Problems | 4.167 | 2 |
| 3 | | Employer-Employee Relations | 4.500 | 3 |

Mechanical Drafting

Term 3

| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
|----------------|--------------|--------------------------------------|---------------|---------------|
| 1 | 2 | Practical Descriptive Geometry | 6.127 | 2 |

Second Year

Term 4

| | | | | |
|---|---|------------------------------|-------|---|
| | 2 | Slide Rule Operations | 6.137 | 1 |
| 3 | | Technical Mathematics | 6.261 | 3 |
| 3 | 2 | Applied Physics | 6.370 | 4 |
| | 3 | Sketching | 4.118 | 1 |
| 1 | 1 | Geometric Construction | 4.120 | 1 |
| | 8 | Cam and Gear Drafting | 4.225 | 3 |
| 3 | 2 | Electricity | 6.208 | 4 |

Term 5

| | | | | |
|---|---|------------------------------|-------|---|
| | 2 | Engineering Problems | 6.138 | 1 |
| 3 | | Technical Mathematics | 6.262 | 3 |
| 1 | 9 | Project Drafting | 4.119 | 4 |
| | 8 | Technical Illustration | 4.228 | 3 |
| 3 | | Business Economics | 1.524 | 3 |
| | 4 | Electrical Drafting | 4.103 | 2 |

Term 6

| | | | | |
|---|---|----------------------------------|-------|---|
| 3 | | Technical Report Writing | 6.126 | 3 |
| 2 | | Machine Shop Automation | 4.824 | 2 |
| | 8 | Sheet Metal Drafting | 4.230 | 3 |
| | 8 | Jig and Fixture Drafting | 4.231 | 3 |
| | 5 | Technical Illustration | 4.229 | 2 |
| 3 | | General Education Elective | | 3 |

Well Drilling Technician

This is a preparation for an outdoor mechanical occupation. It is an option from a modified first year of the Industrial-Mechanical Technician Program.

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. He has a familiarity with geology, ground water location and quality, pumping and drilling techniques and equipment.

Job opportunity for the graduates of this option are found in the drilling industry in development for subterranean water resources, test holes, earth sampling, 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 105 Term Units.

Well Drilling Technician Curriculum

First Year

| Term 1 | | Course Title | Course No. | Term Units |
|-------------|-----------|---|------------|------------|
| Hours Class | Work Lab. | | | |
| 2 | 2 | Mathematics | 4.200 | 3 |
| 3 | | Communication Skills | 1.101 | 3 |
| | 4 | Drafting | 4.101 | 2 |
| 2 | 4 | Bench and Layout Practices | 4.810 | 3 |
| 2 | 3 | Machine Tool Processes | 4.802 | 3 |
| 3 | 4 | Power Systems | 4.172 | 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 | 4.804 | 3 |
| 2 | 3 | Hydraulic and Pneumatic Systems | 4.173 | 3 |
| 3 | | General Education Elective | | 3 |
| Term 3 | | | | |
| 2 | 4 | Industrial Materials and Processes | 4.170 | 3 |
| 1 | 3 | Welding | 4.150 | 2 |
| 2 | 3 | Heat-Treatment of Steel | 4.849 | 3 |
| 3 | 2 | Drilling Equipment, Tools and Terminology | 4.290 | 4 |
| 3 | 2 | Elementary Geology | 4.305 | 4 |

Second Year

| Term 4 | | | | |
|--------|---|---|-------|---|
| 3 | | Introduction to Psychology | 1.606 | 3 |
| 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 | | State Drilling Standards and Record Keeping | 4.293 | 3 |
| Term 5 | | | | |
| | 1 | Shop Safety | 4.253 | 1 |
| 3 | | Business Economics | 1.524 | 3 |
| 2 | 3 | Intermediate Arc Welding | 4.154 | 3 |
| 3 | 2 | Hydrology for Drillers | 4.294 | 4 |
| 3 | | Finance, Contracts and the Law | 2.340 | 3 |
| 2 | 2 | Topographic Map Interpretation | 4.130 | 3 |
| Term 6 | | | | |
| 2 | 6 | Welding for Certification | 4.166 | 4 |
| 3 | 4 | Small Pump Installation | 4.295 | 4 |
| 3 | 4 | Drilling Setups and Operations | 4.292 | 4 |
| 3 | | Special Drilling Problems | 4.297 | 3 |
| 3 | | General Education Elective | | 3 |

Technical Drafting

The objective of the Technical Drafting Program is to prepare individuals for positions in engineering departments, in the areas of mechanical drafting, design, or technical illustration and design. The courses within the program are specifically selected and planned to train technicians to qualify for tasks such as drawing preliminary sketches, making layouts from technical information, rendering drawings in pencil and ink, making overlays and paste ups and detailed drawing of complete and final plans.

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

Upon the satisfactory completion of the requirements in the Technical Drafting Program, an Associate in Science Degree will be awarded, signifying that the student will be prepared to effectively function and advance in the many job areas of the technical drafting field.

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

Associate in Science Degree: Required 97 Term Units.

Drafting Technician Curriculum

First Year

Term 1

| Hours | Work | Course Title | Course No. | Term |
|-------|------|----------------------------------|------------|-------|
| Class | Lab. | | | Units |
| 3 | | Communication Skills | 1.101 | 3 |
| 3 | | Introduction to Psychology | 1.606 | 3 |
| 3 | | Technical Mathematics | 6.261 | 3 |
| | 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 |
| 3 | | Technical Mathematics | 6.262 | 3 |
| 2 | 6 | Plane Surveying | 6.103 | 4 |
| 2 | 3 | Manufacturing Processes | 6.606 | 3 |
| | 2 | Engineering Problems | 6.138 | 1 |
| 2 | | Dimensioning and Layout | 4.224 | 2 |
| | 5 | Machine Drafting | 4.222 | 2 |

Term 3

| | | | | |
|---|---|--------------------------------------|-------|---|
| 3 | | Psychology of Human Relations | 1.608 | 3 |
| 3 | | Technical Mathematics | 6.266 | 3 |
| 2 | 3 | Manufacturing Processes | 6.610 | 3 |
| 1 | 7 | Mapping and Platting | 4.131 | 3 |
| 1 | 2 | Practical Descriptive Geometry | 6.127 | 2 |
| | 5 | Machine Drafting | 4.223 | 2 |

Second Year

Term 4

| | | | | |
|---|---|--------------------------------------|-------|---|
| 3 | 2 | Applied Physics | 6.370 | 4 |
| | 8 | Architectural Drafting | 4.226 | 3 |
| | 8 | Cam and Gear Drafting | 4.225 | 3 |
| | 4 | Electrical Drafting | 4.103 | 2 |
| 3 | | Introduction to Specifications | 4.102 | 3 |

Term 5

| | | | | |
|---|---|----------------------------------|-------|---|
| 3 | 2 | Applied Physics | 6.371 | 4 |
| | 8 | Architectural Drafting | 4.227 | 3 |
| | 8 | Technical Illustration | 4.228 | 3 |
| 3 | | Business Economics | 1.524 | 3 |
| 3 | | General Education Elective | | 3 |

Term 6

| | | | | |
|---|---|--------------------------------|-------|---|
| 3 | 2 | Applied Physics | 6.366 | 4 |
| | 8 | Sheet Metal Drafting | 4.230 | 3 |
| | 5 | Technical Illustration | 4.229 | 2 |
| | 4 | Structural Drafting | 4.111 | 2 |
| | 8 | Jig and Fixture Drafting | 4.231 | 3 |

Forest Industries Technology

A program of studies designed to prepare persons for employment in skilled and technical occupations related to the wood-producing and wood-using industries. The program includes courses which provide the scientific knowledge and technical skills determined by industry to be necessary for successful employment in forestry occupations.

This is a two year program which provides for specialization in the second year. The first year of the program provides for common training which applies in several fields. After successful completion of the first year, the student may elect to continue in one of the options, or seek employment at the Forestry Aide level.

Students interested in either of the options will be assisted in finding summer employment in their field.

Forest Industries Technician Curriculum

First Year

| Term 1 | | | | |
|--------|------|---|------------|------------|
| Hours | Work | Course Title | Course No. | Term Units |
| Class | Lab. | | | |
| 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 | 6.101 | 4 |
| | 2 | Slide Rule Operations | 6.137 | 1 |
| 1 | 2 | Tools and Equipment | 3.605 | 2 |
| Term 2 | | | | |
| 3 | | Communications Skills | 1.104 | 3 |
| | 4 | Drafting | 4.105 | 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 | | Technical Report Writing | 6.126 | 3 |
| 3 | 4 | Forest Mensuration | 6.300 | 4 |
| 1 | 2 | Tree Identification | 3.611 | 2 |
| | 3 | Accident Prevention and First Aid | 4.190 | 1 |
| 2 | 4 | Quality Control in Wood Products | 6.285 | 3 |
| 1 | 5 | Forest Photogrammetry | 3.624 | 3 |

Forest Products Technician Curriculum

The objectives of the Forest Products Technician Program are to qualify technicians for employment in a variety of forest product manufacturing operations and to prepare 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, an Associate in Science Degree will be awarded.

Associate in Science Degree: Required 112 Term Units.

Forest Products Technician Curriculum

Second Year

| Term 4 | | | | |
|-------------|-----------|---|------------|------------|
| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
| 3 | 3 | Forest Products | 4.281 | 4 |
| 1 | 6 | Quality Control in Wood Products | 6.287 | 3 |
| 2 | 3 | Wood Preservation and Finishing | 6.282 | 3 |
| 3 | 2 | Introductory Chemistry | 6.275 | 4 |
| 3 | 2 | Practical Physics | 4.300 | 4 |
| 3 | | Introduction to Psychology | 1.606 | 3 |
| Term 5 | | | | |
| 3 | | Wood Industry Economics | 4.286 | 3 |
| 1 | 6 | Wood Structure and Identification | 6.280 | 3 |
| 2 | 3 | Elementary Wood Physics | 6.281 | 3 |
| 3 | 2 | Chemistry | 6.276 | 4 |
| 3 | 2 | Practical Physics | 4.302 | 4 |
| 3 | | Psychology of Human Relations | 1.608 | 3 |
| Term 6 | | | | |
| 2 | 3 | Wood Products Marketing | 3.614 | 3 |
| 2 | 6 | Logging and Milling | 4.282 | 4 |
| 3 | | Methods of Supervision | 4.287 | 3 |
| 3 | | Employer-Employee Relations | 4.500 | 3 |
| 3 | | Consumer Economics | 1.525 | 3 |
| 2 | 3 | Elementary Wood Chemistry..... | 6.279 | 3 |

Forest Technician Curriculum

The Forest Technician Curriculum is designed to provide 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, an Associate in Science Degree will be awarded.

Associate in Science Degree: Required 107 Term Units.

Forest Technician Curriculum

Second Year

Term 4

| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
|-------------|-----------|-------------------------------------|------------|------------|
| 3 | 2 | Natural Cover Fire Protection | 5.151 | 4 |
| 1 | 6 | Route Surveying | 6.507 | 3 |
| 2 | 6 | Logging and Milling | 4.282 | 4 |
| 3 | 2 | Practical Physics | 4.300 | 4 |
| 3 | | Introduction to Psychology | 1.606 | 3 |

Term 5

| | | | | |
|---|---|---|-------|---|
| 3 | | Wood Industry Economics | 4.286 | 3 |
| 1 | 6 | Wood Structure and Identification | 6.280 | 3 |
| 2 | 6 | Scaling Practices | 3.617 | 4 |
| 3 | 2 | Practical Physics | 4.302 | 4 |
| 3 | | Psychology of Human Relations | 1.608 | 3 |

Term 6

| | | | | |
|---|---|-----------------------------------|-------|---|
| 2 | 3 | Wood Products Marketing | 3.614 | 3 |
| 3 | | Methods of Supervision | 4.287 | 3 |
| 3 | | Employer-Employee Relations | 4.500 | 3 |
| 3 | | Consumer Economics | 1.525 | 3 |
| | 2 | Forest Pathology | 3.607 | 1 |
| 3 | 4 | Power Systems | 4.172 | 4 |
| 3 | | General Education Elective | | 3 |

Fire Protection Technology

This curriculum will provide the student with a knowledge adequate to understand the significance and implications of those procedures to be performed at the entry level of the fire protection field he selects to pursue. He will gain sufficient skills to make a desirable employee for more than one field of fire protection.

The curriculum is designed to provide a broad base of technical and general subject matter. The instruction centers around elements that normally are not obtained through experience alone. Such background most certainly will enhance promotional and specialization opportunities.

Upon satisfactory completion of the requirements of the program, an Associate in Science Degree will be awarded, signifying that the student is prepared to effectively function and advance in an interesting, challenging and rewarding field offering a wide scope of employment opportunities. Employment opportunities for graduates are found in Municipal Fire Departments, Fire Equipment Sales Companies, Insurance Companies, Industrial Security Organizations and Forest Connected industries. The majority of opportunities are available in Municipal Fire Departments that have specific physical and social requirements. A prospective student interested in this field should check on these requirements before entrance into the program.

Certain core courses of the curriculum can be made available to presently employed Firefighters as In-Service Training to broaden their knowledge and increase their potential in the field.

Associate in Science Degree: Required 97 Term Units.

Fire Protection Technician Curriculum

First Year

Term 1

| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
|----------------|--------------|---|---------------|---------------|
| 3 | | Introduction to Psychology | 1.606 | 3 |
| 2 | 2 | Mathematics | 4.200 | 3 |
| 3 | | Communication Skills | 1.101 | 3 |
| 3 | 2 | Elementary Science for Firefighters | 5.103 | 4 |
| 3 | | Introduction to Fire Protection | 5.100 | 3 |

Term 2

| | | | | |
|---|---|-------------------------------------|-------|---|
| 2 | 2 | Mathematics | 4.202 | 3 |
| 3 | | Communication Skills | 1.104 | 3 |
| 3 | 2 | Fire Science | 6.995 | 4 |
| 2 | 2 | Fire Apparatus and Equipment | 5.102 | 3 |
| 3 | | Blueprint Reading for Firemen | 5.119 | 3 |

Term 3

| | | | | |
|---|---|---------------------------------------|-------|---|
| 3 | 2 | Fire Science | 6.996 | 4 |
| 3 | | Fundamentals of Fire Prevention | 5.101 | 3 |
| | 9 | Firefighting Skills | 5.110 | 3 |
| 3 | | Hazardous Materials | 5.108 | 3 |
| 3 | | General Education Elective | | 3 |

Second Year

Term 4

| | | | | |
|---|---|-------------------------------------|-------|---|
| | 9 | Firefighting Skills | 5.111 | 3 |
| 3 | | Hazardous Materials | 5.109 | 3 |
| 3 | 2 | Rescue and Emergency Care | 5.120 | 4 |
| 3 | 2 | Fire Service Hydraulics | 5.104 | 4 |
| 3 | 2 | Natural Cover Fire Protection | 5.151 | 4 |

Term 5

| | | | | |
|---|---|--|-------|---|
| 2 | 2 | Pump Operations and Practical Hydraulics | 5.105 | 3 |
| 3 | | Fire Department Organization and Management | 5.112 | 3 |
| 3 | | Fire Protection Systems and Extinguishers | 5.106 | 3 |
| 3 | | Firefighting Tactics and Strategy | 5.113 | 3 |
| 3 | | General Education Elective | | 3 |

Term 6

| | | | | |
|---|---|--|-------|---|
| 3 | | Technical Report Writing | 6.126 | 3 |
| 3 | | Fire Department Communications and Alerting Systems | 5.115 | 3 |
| 3 | | Water Distribution Systems | 5.107 | 3 |
| 3 | 2 | Fire Investigation | 5.117 | 4 |
| 3 | | Building Construction for Fire Protection ... | 5.116 | 3 |

Law Enforcement

This course of study offers a curriculum in Law Enforcement designed for young men and women who wish to prepare for career employment in Police Departments, Sheriffs' Offices, State Police and law enforcement related positions. It also provides opportunities for those already engaged in law enforcement to obtain training for increased competency and advancement in their field of work. It has been developed co-operatively by the State Department of Education and the State Board on Police Standards and Training.

Those who meet minimum physical, emotional, intellectual, citizenship and moral standards are eligible, provided they meet the school entrance requirements. Local police departments make a routine investigation, including fingerprinting, of all applicants for study in the program. Student may participate in the program on a full-time or part-time basis.

Upon satisfactory completion of the requirements in the Law Enforcement Program, an Associate in Science degree will be awarded.

Associate in Science Degree: Required 112 Term Units.

Law Enforcement Curriculum

First Year

Term 1

| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
|----------------|--------------|---------------------------------------|---------------|---------------|
| 3 | | Communication Skills | 1.101 | 3 |
| 3 | | Introduction to Psychology | 1.606 | 3 |
| 3 | 4 | Introduction to Law Enforcement | 5.200 | 4 |
| 3 | 3 | Crime and Delinquency | 5.201 | 4 |
| 3 | | Constitutional Government | 1.601 | 3 |
| 1 | 4 | Typing | 2.606 | 3 |

Term 2

| | | | | |
|---|---|---------------------------------|-------|---|
| 3 | | Communication Skills | 1.104 | 3 |
| 3 | | American Institutions | 1.600 | 3 |
| 3 | | Administration of Justice | 5.203 | 3 |
| 3 | 3 | Crime and Delinquency | 5.202 | 4 |
| 1 | 4 | Typing | 2.607 | 3 |
| 2 | 3 | Jail Procedures | 5.204 | 3 |

Term 3

| | | | | |
|---|---|-------------------------------------|-------|---|
| 3 | | Police Report Writing | 5.223 | 3 |
| 3 | | Psychology of Human Relations | 1.608 | 3 |
| 3 | 3 | Criminal Investigations | 5.206 | 4 |
| 2 | 3 | Search and Rescue | 5.209 | 3 |
| 3 | | Sociology | 1.310 | 3 |

Second Year

Term 4

| | | | | |
|---|---|-------------------------------|-------|---|
| 2 | 2 | Public Speaking | 1.610 | 3 |
| 3 | 3 | Criminal Investigations | 5.207 | 4 |
| 3 | | Criminal Law | 5.211 | 3 |
| 3 | 6 | Traffic and Patrol | 5.210 | 5 |
| 2 | 3 | Photography | 5.222 | 3 |

Term 5

| | | | | |
|---|---|-------------------------------------|-------|---|
| 3 | | Criminal Law | 5.212 | 3 |
| 3 | | Community-Police Relations | 5.215 | 3 |
| 3 | | Police Administration | 5.216 | 3 |
| 1 | 2 | First Aid | 5.450 | 2 |
| 3 | 6 | Problems of Physical Evidence | 5.220 | 5 |
| 2 | 3 | Juvenile Procedures | 5.218 | 3 |

Term 6

| | | | | |
|---|---|-------------------------------------|-------|---|
| 3 | 3 | Criminal Investigations | 5.208 | 4 |
| 3 | 3 | Problems of Physical Evidence | 5.221 | 4 |
| 2 | 3 | Moot Court | 5.214 | 3 |
| 3 | | Constitutional Law | 5.213 | 3 |
| 3 | | Police Administration | 5.217 | 3 |
| 3 | | Civil-Legal Responsibilities | 5.219 | 3 |

Television-Radio Service Program

The objective of this program is to prepare the students for employment in the field of radio and television servicing. The program is designed to provide the basic principles, theory and laboratory work in the practical phases of radio and television service work. Basic mathematics and communication skills necessary to the serviceman are given as part of the theory materials as they are needed.

Upon completion of the program each trainee should be able to take an entry job in the field of radio and television servicing, have had a good background in radio and television theory and maintenance and be familiar with both vacuum tube and transistor circuits. The trainee will also have a proficient knowledge in the use and application of test equipment.

The 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.

Examples of opportunities are listed below:

| | |
|-----------------------|--------------------------------|
| Radio-TV Serviceman | Sound System Maintenance Man |
| HiFi Serviceman | Factory Service Representative |
| Auto Radio Serviceman | Electronic Parts Salesman |

Television-Radio Service Curriculum

| Term 1 | | | | |
|--------|------|---|--------|-------|
| Hours | Work | Course Title | Course | Term |
| Class | Lab. | | No. | Units |
| 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 |

Welding Program

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

This is a one year program providing 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 of this program are found in job shops, specialty shops, production and maintenance shops.

Examples of job opportunities are listed below:

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

Welding Curriculum

Term 1

| Hours Work Class Lab. | Course Title | Course No. | Term Units |
|--------------------------|---------------------------------------|---------------|---------------|
| 2 9 | Basic Arc Welding | 4.240 | 4 |
| 2 6 | Basic Oxy-Acetylene Welding | 4.242 | 4 |
| 2 3 | Blueprint Reading and Sketching | 4.244 | 3 |
| 2 2 | Shop Arithmetic | 4.246 | 3 |
| 2 2 | Shop Projects | 4.250 | 1 |

Term 2

| | | | |
|------|--|-------|---|
| 2 12 | Intermediate Arc Welding | 4.241 | 5 |
| 8 | Intermediate Oxy-Acetylene Welding | 4.243 | 2 |
| 2 3 | Layout Practices | 4.245 | 3 |
| 1 | Shop Safety | 4.253 | 1 |
| 2 | Shop Projects | 4.251 | 1 |

Term 3

| | | | |
|-----|----------------------------------|-------|---|
| 1 3 | Tungsten Inert Gas Welding | 4.247 | 2 |
| 1 3 | Metallic Inert Gas Welding | 4.248 | 2 |
| 2 6 | Welding for Certification | 4.166 | 4 |
| 3 9 | Weld Shop Problems | 4.249 | 5 |
| 2 | Shop Projects | 4.252 | 1 |

General Drafting Program

The objective of the General Drafting Program is to prepare students for employment in drafting jobs that require a broad knowledge of the fundamental aspects of drafting and a minimum of specialization. The program is designed to give the student a supporting background in basic mathematics, physical sciences, and communication skills which, along with the drafting work, serve to prepare a proficient general draftsman.

After satisfactory completion of the requirements of General Drafting Program, the student will be awarded a certificate and will be prepared to effectively function and advance in many drafting areas.

Examples of opportunities are listed below:

General Drafting
Machine Draftsman
Tracer

General Drafting Curriculum

| Term 1 | | | | |
|--------|------|---|------------|------------|
| Hours | Work | Course Title | Course No. | Term Units |
| Class | Lab. | | | |
| | 4 | Drafting | 4.101 | 2 |
| 1 | 1 | Geometric Construction | 4.120 | 1 |
| | 3 | Sketching | 4.118 | 1 |
| 2 | 7 | Introduction to Fabrication Practices | 4.100 | 4 |
| 2 | 2 | Mathematics | 4.200 | 3 |
| 3 | | Communication Skills | 1.101 | 3 |
| Term 2 | | | | |
| | 4 | Drafting | 4.105 | 2 |
| | 4 | Electrical Drafting | 4.103 | 2 |
| 1 | 9 | Project Drafting | 4.119 | 4 |
| 2 | 2 | Mathematics | 4.202 | 3 |
| 3 | | Communication Skills | 1.104 | 3 |
| 1 | 7 | Introduction to Mapping | 4.132 | 3 |
| Term 3 | | | | |
| | 4 | Mechanical Drafting | 4.109 | 2 |
| | 8 | Project Drafting | 4.121 | 3 |
| 2 | 2 | Mathematics | 4.204 | 3 |
| 3 | 2 | Practical Physics | 4.302 | 4 |
| | 7 | Architectural Drawing | 4.107 | 3 |

Office Occupation Program

The Office Occupations curriculum provides two options, both of which are designed to develop the skills and understanding necessary for entry employment in business.

The Clerk-Stenographer option stresses basic training in the stenographic skills with emphasis on shorthand and including typing, business machines, basic bookkeeping, communication skills, filing, and other office procedures.

The General Business option stresses preparation for entry into general office or junior accounting positions with emphasis on accounting and including typing, business machines, communication skills, filing, and office procedures.

The job opportunities in these fields are more than adequate in the Salem area and surrounding vicinity.

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

Office Occupations Curriculum

CLERK-STENOGRAPHER

Term 1

| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
|----------------|--------------|-----------------------------------|---------------|---------------|
| 1 | 4 | Typing | 2.606 | 3 |
| 3 | | Communication Skills | 1.101 | 3 |
| 3 | | Business Mathematics | 2.650 | 3 |
| 3 | 4 | Shorthand and Transcription | 2.620 | 4 |
| 1 | 1 | Personal Development | 2.518 | 1 |
| 2 | 2 | Records Management | 2.642 | 3 |
| 3 | | Elective | | 3 |

Term 2

| | | | | |
|---|---|-------------------------------------|-------|---|
| 1 | 4 | Typing | 2.607 | 3 |
| 1 | 3 | Business Machines | 2.660 | 2 |
| 3 | | Business English Fundamentals | 2.673 | 3 |
| 3 | 4 | Shorthand and Transcription | 2.621 | 4 |
| 3 | | Secretarial Accounting | 2.651 | 3 |
| 3 | | Elective | | 3 |

Term 3

| | | | | |
|---|---|-----------------------------------|-------|---|
| 1 | 4 | Typing | 2.608 | 3 |
| 1 | 3 | Business Machines | 2.661 | 2 |
| 3 | | Business Correspondence | 2.672 | 3 |
| 2 | 2 | Office Procedures | 2.641 | 3 |
| 3 | 4 | Shorthand and Transcription | 2.622 | 4 |
| 1 | 3 | Applied Stenography | 2.675 | 2 |

GENERAL BUSINESS

Term 1

| | | | | |
|---|---|----------------------------|-------|---|
| 1 | 4 | Typing | 2.606 | 3 |
| 3 | | Communication Skills | 1.101 | 3 |
| 2 | 2 | Records Management | 2.642 | 3 |
| 3 | | Business Mathematics | 2.650 | 3 |
| 3 | 3 | Accounting | 6.920 | 4 |
| 1 | 1 | Personal Development | 2.518 | 1 |
| 3 | | Elective | | 3 |

Term 2

| | | | | |
|---|---|-------------------------------------|-------|---|
| 1 | 4 | Typing | 2.607 | 3 |
| 1 | 3 | Business Machines | 2.660 | 2 |
| 3 | | Business English Fundamentals | 2.673 | 3 |
| 3 | 3 | Accounting | 6.921 | 4 |
| 6 | | Electives | | 6 |

Term 3

| | | | | |
|---|---|-------------------------------------|-------|---|
| 1 | 4 | Typing | 2.608 | 3 |
| 1 | 3 | Business Machines | 2.661 | 2 |
| 3 | | Business Correspondence | 2.672 | 3 |
| 2 | 2 | Office Procedures | 2.641 | 3 |
| 3 | | Psychology of Human Relations | 1.608 | 3 |
| 3 | 3 | Accounting | 6.922 | 4 |

Dental Assistant Program

The objective of this program is to prepare individuals for employment in dental offices, laboratories, and clinics, and also to provide opportunities to those already working in this field to further their knowledge and skill. The program is designed to provide training in the specialized skills necessary in dental chair assisting and in business practice ability.

The program is sufficiently comprehensive in nature so that the student acquires proficiency in assisting the dentist in a variety of capacities in the private office or in a dental health clinic. The program of study includes such activities as mixing of filling materials, instruments and their uses, preparation of patient, sterilization, and other general and specialized courses in dental science. Dental office management is an integral part of the program and includes instruction in areas such as reception of patients, office records, fees and other business practices.

Upon completion of the course of study, the graduate will be ably qualified to assist in a dental office or clinic with a minimum of familiarization and orientation from the dentist.

Typical duties will include preparation of the patients for treatment, mixing filling materials and dental cement, checking and sterilizing equipment, taking inventories and ordering supplies. Laboratory duties include studying models of teeth, casting inlays and taking and developing x-ray films. In the capacity of office manager she acts as receptionist, schedules appointments, keeps accounts and records, sends out bills and is responsible for the general appearance of the office.

Applicants for the dental assistant program must be a minimum of 16 years of age, and be a graduate of an accredited high school or the equivalent. The assistant should be neat, clean, and in good health. A pleasant personality is essential in dealing with dentist's patients. She should be able to meet people and put them at ease and be able to express herself clearly and pleasantly.

Dental Assistant Curriculum

Term 1

| Hours Class | Work Lab. | Course Title | Course No. | Term Units |
|----------------|--------------|---|---------------|---------------|
| 1 | | Health Occupation Overview | 5.700 | 1 |
| 3 | 3 | Basic Sciences for Health Occupations | 5.601 | 4 |
| 3 | | Business Mathematics | 2.650 | 3 |
| 3 | | Communication Skills | 1.101 | 3 |
| 3 | | Dental Anatomy and Physiology | 5.405 | 3 |
| 2 | 3 | Intro. to Basic Dental Office Procedures | 5.411 | 3 |
| 2 | | Roentgenology | 5.406 | 2 |

Term 2

| | | | | |
|---|---|---|-------|---|
| 2 | 6 | Chairside Assisting & Basic Lab. Procedures | 5.403 | 4 |
| | 3 | Applied Roentgenology | 5.408 | 1 |
| 3 | | Dental Sciences | 5.404 | 3 |
| 3 | | Communication Skills | 1.104 | 3 |
| 1 | 4 | *Typing | 2.633 | 3 |
| 2 | 3 | Dental Office Management | 5.410 | 3 |
| 3 | | Introduction to Psychology | 1.606 | 3 |

Term 3

| | | | | |
|---|----|---|-------|---|
| 2 | 3 | Advanced Laboratory & Chairside Procedures | 5.407 | 3 |
| | 3 | Applied Roentgenology | 5.413 | 1 |
| 1 | 4 | Typing | 2.634 | 3 |
| 3 | | Dental Office Correspondence | 5.412 | 3 |
| | 12 | Dental Office Practice | 5.409 | 2 |
| 3 | | General Education Elective | | |

*Basic Typing required of students typing less than 20 words/minute.

Medical Assistant Program

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 range of duties will be from assisting with the physical examination, to receptionist and office responsibilities. Each office will differ in its requirements.

The objectives of the Medical Assistant Program are to develop understanding for the professional nature of the physician's practice and a respect for human dignity and rights of those who seek his service, and to develop the skills needed to function safely and effectively as a health team member in three principal 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 makes provisions for supervised clinical experience in clinics, physicians' offices and selected areas of the hospitals, nurses, medical assistants and teachers of commercial and general education subjects will constitute the faculty and Advisory Committee.

Applicants for the Medical Assistant Program must be at least 17 years of age, be a graduate 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 will be given 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

Term 1

| Hours | Work | Course Title | Course No. | Term Units |
|-------|------|---|------------|------------|
| Class | Lab. | | | |
| 1 | | Health Occupations Overview | 5.700 | 1 |
| 3 | | Introduction to Medical Assisting | 5.600 | 3 |
| 3 | | Communication Skills | 1.101 | 3 |
| 2 | 3 | Medical Office Procedures | 5.604 | 3 |
| 3 | | Business Mathematics | 2.650 | 3 |
| 1 | 4 | *Typing | 2.633 | 3 |
| 3 | 3 | Basic Sciences for Health Occupations | 5.601 | 4 |

Term 2

| | | | | |
|---|---|---|-------|---|
| 3 | 3 | Medical Assisting, Basic Procedures | 5.602 | 4 |
| 3 | | Communication Skills | 1.104 | 3 |
| 1 | 4 | Typing | 2.634 | 3 |
| 3 | | Human Anatomy and Physiology | 5.608 | 3 |
| 3 | | Medical Office Management | 5.607 | 3 |
| 1 | | First Aid | 5.513 | 1 |
| 3 | | General Education Elective | | 3 |

Term 3

| | | | | |
|---|----|--|-------|---|
| 2 | | Medical Science | 5.605 | 2 |
| 2 | 3 | Medical Assisting, Advanced Procedures | 5.606 | 3 |
| 3 | | Business Correspondence | 2.672 | 3 |
| 3 | | Psychology of Human Relations | 1.608 | 3 |
| | 16 | Medical Office Practice | 5.609 | 3 |

*Basic Typing required of students typing less than 20 words/minute.

Technical Nursing Program

The Technical Nursing Program prepares selected students for the technical nurse role as a beginning staff nurse in hospitals and other health agencies. The graduate will earn an Associate Degree in Nursing and will be 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 fabric 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. Students are involved in patient-family nursing situations in the community hospitals and health agencies as an integral part of the program.

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

Upon the satisfactory completion of the requirements in the Technical Nursing Program, an Associate in Science Degree will be awarded.

Associate in Science Degree: Required 96 Term Units.

Technical Nursing Curriculum

First Year

Term 1

| Hours | Work | Course Title | Course | Term |
|-------|------|-----------------------------------|---------|-------|
| Class | Lab. | | No. | Units |
| 4 | 12 | Nursing: Fundamentals | 5.701 | 7 |
| 1 | | Health Occupations 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: Maternal & Child Health | 5.702 | 8 |
| 3 | 3 | Human Anatomy and Physiology | 5.722 | 4 |
| 3 | | General Psychology | Psy 202 | 3 |
| 3 | | English Composition | Wr 112 | 3 |

Term 3

| | | | | |
|---|----|----------------------------------|---------|---|
| 4 | 12 | Nursing: Long Term Illness | 5.703 | 8 |
| 3 | 3 | Microbiology | 5.723 | 4 |
| 3 | | General Psychology | Psy 203 | 3 |

Second Year

Term 4

| | | | | |
|---|----|---|--------|---|
| 4 | 15 | Nursing: Short Term and Acute Illness ... | 5.704 | 9 |
| 3 | | Fundamentals of Speech | Sp 111 | 3 |
| 3 | | Group Process | 5.730 | 3 |

Term 5

| | | | | |
|---|----|---|---------|---|
| 4 | 15 | Nursing: Mental Illness and Mental Retardation | 5.705 | 9 |
| 3 | | Introduction to Political Science | PS 101 | 3 |
| 3 | | Anthropology | Soc 214 | 3 |

Term 6

| | | | | |
|---|----|-----------------------------------|--------|---|
| 4 | 16 | Nursing: Advanced Nursing | 5.706 | 9 |
| 3 | | American Government | Ps 201 | 3 |
| 3 | | Nursing Trends and Practice | 5.720 | 2 |

Practical Nursing Program

The Practical Nurse is a person prepared in an approved educational 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 physician. The adequately prepared and properly utilized Practical Nurse contributes immeasurably to quality patient care.

The Practical Nursing curriculum is an occupational preparatory program. The purpose is to prepare selected people for a career in practical nursing, who are able to perform the functions of a practical nurse, and who help fulfill the need of health services in Oregon, and to prepare 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 nurse's 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.

Applicants for the Practical Nursing program must be at least 17 years of age, be a graduate of an accredited high school or the equivalent as determined by test, be 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 for the Certificate as outlined in the general information section of this catalog.

Practical Nursing Curriculum

Term 1

| Hours Work | Class | Lab. | Course Title | Course No. | Term Units |
|------------|-------|------|---|------------|------------|
| 1 | | | Health Occupations Overview | 5.700 | 1 |
| 3 | 15 | | Practical Nursing | 5.520 | 3 |
| 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

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| Wood Structure and Identification 6.280 | 107 |

COURSE DESCRIPTIONS

General Education Courses

| | | 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.

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|---------------------------|--------------|----------|----------|----------|
| Business Economics | 1.524 | 3 | 0 | 3 |
|---------------------------|--------------|----------|----------|----------|

This is an introduction to the fundamental concepts of economics that are 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.

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|-----------------------------|--------------|----------|----------|----------|
| Communication Skills | 1.101 | 3 | 0 | 3 |
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This course is designed to improve the student's communicative skills through reading, listening, writing and speaking, with emphasis on research and writing. The practical phase of communication problems is kept in the foreground. Problems in reading, note taking, gathering information, report writing, and conventional usages of mechanics and grammar are utilized.

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|-----------------------------|--------------|----------|----------|----------|
| Communication Skills | 1.104 | 3 | 0 | 3 |
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This course is a continuation of the processes of improving the student's speaking, reading, writing, and listening skills, with emphasis on speaking.

Practical applications are provided for the student to develop effective habits of communication through speaking, participating in conferences, presentation of reports, gathering information, listening, observing, and evaluation sources.

Prerequisite: Communication Skills 1.101 or equivalent.

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|----------------------------------|--------------|----------|----------|----------|
| Constitutional Government | 1.601 | 3 | 0 | 3 |
|----------------------------------|--------------|----------|----------|----------|

This course is a study of the Constitution of the United States and its meaning to the individual through government. This course is designed to develop in the student, an understanding of the meaning of the Constitutions provisions and an appreciation of its contemporary relevance. In the treatment employed here the historic roots of the document are studied to establish the precedents for particular institutional arrangements, e. g., bicameral legislatures.

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|---------------------------|--------------|----------|----------|----------|
| Consumer Economics | 1.525 | 3 | 0 | 3 |
|---------------------------|--------------|----------|----------|----------|

Consumer Economics 1.525 deals with the principles and problems of the consumer and how he can get the most out of life through the fullest use of his money, time and energy. Credit, Investment, Housing, Insurance, Consumer Law, 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 adult consumership.

| | | Lec. | Lab. | Term Units |
|------------------------------------|--------------|----------|----------|---------------|
| 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.

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|-----------------------------------|--------------|----------|----------|----------|
| Introduction to Psychology | 1.606 | 3 | 0 | 3 |
|-----------------------------------|--------------|----------|----------|----------|

This course is designed for the student who desires 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.

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|--|--------------|----------|----------|----------|
| Occupational Skills & Geography | 1.302 | 3 | 0 | 3 |
|--|--------------|----------|----------|----------|

This course specifies what the geographic factors are and how they exert an influence on occupational endeavors. Special emphasis is placed on the geographic factors of Oregon and Washington and upon 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.

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|--------------------------------------|--------------|----------|----------|----------|
| 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 the application to the 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 is also 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.

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|------------------------|--------------|----------|----------|----------|
| Public Speaking | 1.610 | 2 | 2 | 3 |
|------------------------|--------------|----------|----------|----------|

This course is intended to develop speaking skills with emphasis on the dual role of speech as both a speaking and listening skill, and on adjusting the approach to the specific audience. Practice is provided through individual speeches and group discussions with careful attention to the general principles of speech, stress is placed on poise and confidence and on understanding their psychological basis.

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|------------------|--------------|----------|----------|----------|
| Sociology | 1.310 | 3 | 0 | 3 |
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The study of people and the history of their problems in living together, and the development and organization of the various groups and structures that make up the interrelated facets of our modern society. Included would be the contemporary problems particularly evident in the United States, such as racial disorders, campus demonstrations and the hippie movement.

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|---------------------------------|--------------|----------|----------|----------|
| Technical Report Writing | 6.126 | 3 | 0 | 3 |
|---------------------------------|--------------|----------|----------|----------|

This is a course which supplies knowledge of the principles of composition and basic forms of writing reports. The subjects covered are: why reports are written, types of reports, make-up of reports, effectiveness of writing styles, gathering of facts for a report, planning a report, method of writing a report, layout and typing a report, and visual aids in a report.

Prerequisite: Communication Skills 1.101.

Mathematics Courses

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|----------|---------------|
| Analysis (Mathematics) | 4.207 | 2 | 2 | 3 |
| <p>A theory-lab course designed to provide for practical application and problem solving using basic mathematical concepts. Training is provided on a variety of calculating machines.</p> <p>Prerequisite: Math. 4.200 or equivalent and Slide Rule Operations 6.137.</p> | | | | |
| Business Mathematics | 6.918 | 3 | 0 | 3 |
| <p>This is a course designed to acquaint 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.</p> | | | | |
| Business Mathematics | 6.919 | 3 | 0 | 3 |
| <p>This is a course in practical business mathematics. The fundamentals of simple and compound interests, discount, annuities, and sinking funds, bond amortization tables, ratio and proportion inequalities, algebra, business graphs, percentage, redundant digit check systems, numerical relationships, and number coding systems.</p> | | | | |
| Business Mathematics | 2.650 | 3 | 0 | 3 |
| <p>This is a course in 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.</p> | | | | |
| Data Processing Mathematics | 6.941 | 3 | 0 | 3 |
| <p>An introduction to the field of mathematics used in data processing. The course covers binary numbering systems, numerical methods, boolean algebra, logic and set theory.</p> | | | | |
| Data Processing Mathematics | 6.942 | 3 | 0 | 3 |
| <p>This is an applied course in mathematics for Electronic Computer Applications. It provides a practical foundation for the solution of business, business management and applied science problems, coordinate systems and trigonometry.</p> | | | | |
| Data Processing Mathematics | 6.943 | 2 | 0 | 2 |
| <p>This course is a continuation of 6.941 with an emphasis on mathematics needed in computer operation and management.</p> <p>Prerequisite: Data Processing Mathematics 6.941.</p> | | | | |
| Electrical Mathematics | 6.115 | 3 | 0 | 3 |
| <p>An applied course in mathematics for electronic engineering technicians. Includes an introduction to calculus covering graphical methods, differentiation, and integration with direct application to electronic and electrical circuitry.</p> | | | | |
| Engineering Problems | 6.138 | 0 | 2 | 1 |
| <p>This is a course in 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 fields of engineering is presented. Practical applications will utilize diagrams, graphs, charts, tables, curves, and the slide rule.</p> | | | | |

| | | Lec. | Lab. | Term Units |
|--|--|------|------|------------|
|--|--|------|------|------------|

Mathematics 4.200 2 2 3
 This is a course in 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
 This is a course in 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
 This course 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, algebra, 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.

Practical Descriptive Geometry 6.127 1 2 2
 This course gives a brief review of advanced drafting problems and takes the student further into the field of descriptive geometry principles. In the introduction of detailed drawing from assembly drawing the principles of Descriptive Geometry are shown to be necessary for the draftsman.

Prerequisite: Third Term standing or approval of department head.

Shop Arithmetic 4.246 2 2 3
 A one term course in basic arithmetic used in the weld 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
 This course consists of a study of the slide rule applicable to problem solving in the technical fields. This study involves care, adjustment, and manipulation of the slide rule. Practical application of slide rule operation with emphasis on problem solving and accuracy.

Technical Mathematics 6.261 3 0 3
 This course covers algebraic operations including the study of first and second degree equation solutions by analytic and graphical means, exponents and radicals, and their respective applications to technologies. Concurrent with the above, a review of plane geometric principles and introduction to the fundamental trigonometry operations will be offered.

Technical Mathematics 6.262 3 0 3
 This is an applied course in mathematics on the technician level including logarithms, right and oblique triangle problem solving, trigonometric applications, and graphs of trigonometric formulas, densities and equations, and graphs of trigonometric functions.

Prerequisites: Technical Mathematics 6.261 or equivalent.

| | | Lec. | Lab. | Term Units |
|------------------------------|--------------|----------|----------|---------------|
| Technical Mathematics | 6.266 | 3 | 0 | 3 |

This is an applied course in mathematics on the technician level covering simultaneous quadratic equations, ratio and proportion, binomial theorem, arithmetic and geometric progressions, exponential functions, complex notation, and vector algebra.

Prerequisite: Technical Mathematics 6.262 or equivalent.

Science Courses

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|------------------------|--------------|----------|----------|----------|
| Applied Physics | 6.366 | 3 | 2 | 4 |
|------------------------|--------------|----------|----------|----------|

A course in 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.

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|------------------------|--------------|----------|----------|----------|
| Applied Physics | 6.370 | 3 | 2 | 4 |
|------------------------|--------------|----------|----------|----------|

A course in applied physics on the post high school level. Covers mechanics of measurement, structure of matter, heat, energy, heat engines, and sound and light. Laboratory time is provided for demonstrations and experiments to clarify principles and procedures covered in class.

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|------------------------|--------------|----------|----------|----------|
| Applied Physics | 6.371 | 3 | 2 | 4 |
|------------------------|--------------|----------|----------|----------|

A course in applied physics on the post high school level. Covers 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.

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|--|--------------|----------|----------|----------|
| Basic Sciences for Health Occupations | 5.601 | 3 | 3 | 4 |
|--|--------------|----------|----------|----------|

This course is designed to present the introductory concepts of physics, chemistry and microbiology. It includes practical application of problem solving, scientific observation and measurement, use of equipment and basic laboratory techniques.

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|---------------------------------|--------------|----------|----------|----------|
| Basic Science Principles | 5.721 | 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.

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|------------------|--------------|----------|----------|----------|
| Chemistry | 6.276 | 3 | 2 | 4 |
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A continuation of Introductory Chemistry covering the basic principles of General Chemistry.

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|---------------------------|--------------|----------|----------|----------|
| Elementary Geology | 4.305 | 3 | 2 | 4 |
|---------------------------|--------------|----------|----------|----------|

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

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|--|--------------|----------|----------|----------|
| Elementary Science for Firefighters | 5.103 | 3 | 2 | 4 |
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Characteristics and behavior of fire; fundamentals of physical laws and chemical reactions occurring in fire and fire suppression; analysis of factors contributing to fire - its cause, rate of burning, heat generation and travel, by-products of combustion, and to its confinement, control, and extinguishment.

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|----------|---------------|
| Elementary Wood Chemistry | 6.279 | 2 | 3 | 3 |
| This course is designed to acquaint the student with the basic chemical properties of wood, wood adhesives, wood preservatives, wood finishes and the basic chemistry of pulp and paper. Basic tests and testing methods are included. | | | | |
| Prerequisite: Chemistry 6.276. | | | | |
| Elementary Wood Physics | 6.281 | 2 | 3 | 3 |
| This course is designed to acquaint the student with the basic physical and mechanical properties of wood as an engineering material. Various tests and testing methods are covered. | | | | |
| Prerequisite: Practical Physics 4.300. | | | | |
| Fire Science | 6.995 | 3 | 2 | 4 |
| A course in practical physics covering matter, measurements, machines and energy. Laboratory time is provided for demonstrations and experiments to help clarify the principles and procedures covered in class. | | | | |
| Fire Science | 6.996 | 3 | 2 | 4 |
| The physical and chemical properties of substances; chemical bonds and reactions; ionization; covalent substances. Laboratory time is provided for clarifying demonstrations and experiments. | | | | |
| Human Anatomy and Physiology | 5.608 | 3 | 0 | 3 |
| 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. Presentation consists of lecture and demonstration. | | | | |
| Human Anatomy and 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. | | | | |
| Introductory Chemistry | 6.275 | 3 | 2 | 4 |
| An introductory course presenting the fundamentals of modern chemistry for students who have had little or no previous training in chemistry. The majority of the course will cover the basic principles and fundamentals of chemistry with emphasis on industrial application. | | | | |
| Microbiology | 5.723 | 3 | 3 | 4 |
| Continuation of survey of bacteria and other microorganisms, emphasizing their impact upon human health and welfare. | | | | |
| Practical Physics | 4.300 | 3 | 2 | 4 |
| This course in practical physics is designed 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 |
| This course in practical physics is designed 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

| | | Lec. | Lab. | Term Units |
|--|--------------|----------|----------|---------------|
| Accident Prevention and First Aid | 4.190 | 0 | 2 | 1 |
| 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 | 6.920 | 3 | 3 | 4 |
| An introduction to the basic procedures of accounting and the preparation of financial statements. The methods of recording business transactions, the books commonly used, the techniques of closing the books periodically. | | | | |
| Accounting | 6.921 | 3 | 3 | 4 |
| Accounting problems arising in different types of business, such as the corporation, partnerships, and individual proprietorship and interpretation of financial statements. Prerequisite: Accounting 6.920. | | | | |
| Accounting | 6.922 | 3 | 3 | 4 |
| Methods of accounting for the corporate organization including capital stock, earnings, bonds, and intangibles. An introduction to accounting for manufacturing operations. | | | | |
| Accounting | 6.923 | 3 | 0 | 3 |
| This course uses 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 | 0 | 3 |
| This is a 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 Service Center as student capabilities permit. Prerequisite: Accounting 6.923. | | | | |
| Accounting | 6.925 | 3 | 0 | 3 |
| A continuation of Accounting 6.924, this is 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 Service Center by all Data Processing students. Prerequisite: Accounting 6.924. | | | | |
| Administration of Justice | 5.203 | 3 | 0 | 3 |
| Included in this course are 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 officer; the legal procedures that must be followed by a law enforcement officer when preparing a case before the court. | | | | |
| Advanced Electronic Circuits | 6.216 | 2 | 3 | 3 |
| Each student designs and builds a project of his own. Emphasis is placed upon the design, quality of workmanship and upon the written manual for the project. | | | | |

| | | Lec. | Lab. | Term Units |
|--|--------------|----------|----------|---------------|
| Advanced Industrial Electronics | 6.248 | 3 | 3 | 4 |

A continuation of industrial electronics with emphasis on A-C principles and applications in industry. Covers alternating current characteristics, generation of A-C, vector diagram analysis, properties of electric circuits, and graphical representation of resistance, reactance, and impedance. Single phase circuits are analyzed in terms of power factor, and three phase wye and delta combinations are studied. Also includes transformers and regulators, alternating-current generators, polyphase induction motors, synchronous motors and self-synchronous devices, single phase, motors, circuit-protective and switching equipment, electrical instruments and electrical measurement.

Prerequisite: Industrial Electronics 6.218.

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|---|--------------|----------|----------|----------|
| Advanced Laboratory and Chairside Procedures | 5.407 | 2 | 3 | 3 |
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This course is designed to teach the student the principles of full and partial denture prosthesis, and the use of laboratory equipment. She will be able to invest and cast inlays and assist in other advanced laboratory procedures.

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|---------------------------------|--------------|----------|----------|----------|
| Advanced Lathe Practices | 4.833 | 2 | 4 | 3 |
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A continuation of the Machine Tool series of classes. Studies include: internal boring, threading and taper turning, external threading, taper turning and angular turning and machine reaming. Laboratory time is provided for student operation of equipment.

Prerequisite: Machine Shop Practices 4.841.

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|---|--------------|----------|----------|----------|
| Advanced Milling Machine Practices | 4.837 | 2 | 4 | 3 |
|---|--------------|----------|----------|----------|

A continuation of the Machine Tool series of classes. 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.

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|---------------------------------------|--------------|----------|----------|----------|
| Amplifier Circuits and Designs | 6.217 | 3 | 6 | 5 |
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A continuation of vacuum tube and transistor analysis. Covers the application of vacuum tubes and transistors in amplifier circuits. Analyzes the vacuum tube amplifier into its basic and equivalent circuit. Includes load-lines, distortion, and pentode and beam-power tube considerations. Analyzes transistor amplifiers in various circuit transformer analysis, transformer-coupled amplifiers, and R-C coupled amplifiers. Special amplifiers using vacuum tubes and transistors are studied. Includes push-pull circuit analysis and phase inversion; Class C amplifier analysis, and high frequency amplifiers.

Prerequisite: Vacuum tube and transistor analysis 6.223, or approval of department head.

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|---------------------------------------|--------------|----------|----------|----------|
| Analysis of Operation Problems | 6.972 | 1 | 2 | 2 |
|---------------------------------------|--------------|----------|----------|----------|

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

Prerequisite: Computer Center Operations 6.953.

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|--|--------------|----------|----------|----------|
| Antennas and Transmission Lines | 6.231 | 2 | 0 | 2 |
|--|--------------|----------|----------|----------|

A course in both the practical and theoretical aspects of transmission lines and antennas. Basic antenna 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.

| | | Lec. | Lab. | Term Units |
|----------------------------|--------------|----------|----------|---------------|
| Applied Fluid Power | 6.117 | 2 | 2 | 3 |

A course designed to provide instruction in the 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 will 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.

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|---------------------------|--------------|----------|----------|----------|
| Applied Heat Power | 6.616 | 2 | 3 | 3 |
|---------------------------|--------------|----------|----------|----------|

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

Prerequisite: Applied Thermodynamics 6.615.

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|--------------------------|--------------|----------|----------|----------|
| Applied Mechanics | 6.109 | 2 | 3 | 3 |
|--------------------------|--------------|----------|----------|----------|

This course 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 the conducting of experiments to clarify the principles and procedures covered in class.

Prerequisite: Third Term standing or approval of department head.

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|--------------------------|--------------|----------|----------|----------|
| Applied Mechanics | 6.111 | 2 | 3 | 3 |
|--------------------------|--------------|----------|----------|----------|

This course deals with the motion of rigid bodies and with 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.

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|------------------------------|--------------|----------|----------|----------|
| Applied Roentgenology | 5.408 | 0 | 3 | 1 |
|------------------------------|--------------|----------|----------|----------|

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

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|------------------------------|--------------|----------|----------|----------|
| Applied Roentgenology | 5.413 | 0 | 3 | 1 |
|------------------------------|--------------|----------|----------|----------|

This course is a continuation of Applied Roentgenology 5.408, designed to develop further skills in taking x-rays.

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|----------------------------|--------------|----------|----------|----------|
| Applied Stenography | 2.675 | 1 | 3 | 2 |
|----------------------------|--------------|----------|----------|----------|

This course will coordinate and intensify all the training the student has received. The classroom situation will simulate that of an office with the student taking dictation in shorthand and from the dictating machine for transcribing at the typewriter in mailable form. It is planned that the student upon completion of this term of work will have gained from this on-the-job type experience confidence in her ability to enter the business world and that her production work will be of the highest quality.

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|-------------------------------|--------------|----------|----------|----------|
| Applied Thermodynamics | 6.615 | 2 | 3 | 3 |
|-------------------------------|--------------|----------|----------|----------|

The purpose of this course is to initiate the student into some of the principles of thermodynamics. More important, these principles are to be shown in action, that is, 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 end, and also to enable students to consult with the instructor on any parts of their study which may be causing difficulty.

| | | Lec. | Lab. | Term Units |
|-------------------------------|--------------|----------|----------|---------------|
| Architectural Drafting | 4.226 | 0 | 8 | 3 |

A course emphasizing basic architectural drafting techniques and methods. The course will cover architectural lettering, layout, arrangement, symbols, and conventional construction methods used in residential or light commercial buildings.

Prerequisite: Two terms of drafting.

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|-------------------------------|--------------|----------|----------|----------|
| Architectural Drafting | 4.227 | 0 | 8 | 3 |
|-------------------------------|--------------|----------|----------|----------|

A course emphasizing basic architectural drafting techniques and methods. The course will familiarize the student with advance planning, detailing, design, presentation drawing, and rendering.

Prerequisite: Architectural Drafting 4.226.

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|------------------------------|--------------|----------|----------|----------|
| Architectural Drawing | 4.107 | 0 | 7 | 3 |
|------------------------------|--------------|----------|----------|----------|

This course is designed to train the student in the area of architectural detailing. Typical units of study will be footings and foundation walls, sill construction details, conventional house framing, window details, stairway details, fireplace details, floor plans, and elevations. The student will prepare a complete set of detail plans for an average sized home in meeting the requirements for this course.

Prerequisite: Drafting 4.101.

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|---|--------------|----------|----------|----------|
| Automated Systems and 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.

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|--------------------------|--------------|----------|----------|----------|
| Basic Arc Welding | 4.240 | 2 | 9 | 4 |
|--------------------------|--------------|----------|----------|----------|

This is a beginning course in arc welding, covering arc welding equipment, materials, and procedures as they are used in industry. This course is 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 will be included.

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|------------------------------------|--------------|----------|----------|----------|
| Basic Oxy-Acetylene Welding | 4.242 | 2 | 6 | 4 |
|------------------------------------|--------------|----------|----------|----------|

This is a beginning course in oxy-acetylene welding covering basic procedures and techniques used in flame cutting and welding. Related information concerning metallurgy and the control of distortion will be included. This course is designed to develop basic techniques in flat, horizontal, vertical, and overhead welding by demonstration and supervised practice.

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|-----------------------------------|--------------|----------|----------|----------|
| Bench and Layout Practices | 4.810 | 2 | 4 | 3 |
|-----------------------------------|--------------|----------|----------|----------|

This is a course on bench tools and their use, with layout principles. The bench tools and their use, with layout principles and applications. The bench tools studied will include hand tools such as: hammers; screwdrivers; files; chisels; wrenches; hand taps and reamers; hacksaws and threading dies. Layout work will consist of the use of tools, measurements, coating materials, and applications of bench and surface plate layout.

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|--|--------------|----------|----------|----------|
| Blueprint Reading and Sketching | 4.244 | 2 | 3 | 3 |
|--|--------------|----------|----------|----------|

This course covers basic sketching techniques, and reading of three view drawings for welders. Included will be: dimensioning practices, scaling, line alphabet, notes and symbols. Emphasis will be placed on developing an ability in reading detail and weldment drawings.

| | | Lec. | Lab. | Term Units |
|--------------------------------------|--------------|----------|----------|---------------|
| Blueprint Reading for Firemen | 5.119 | 3 | 0 | 3 |

A course designed to teach the 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.

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| Building Construction for Fire Protection | 5.116 | 3 | 0 | 3 |
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Classification of buildings, structural features effecting fire spread; effect of fire on structural strength; fire stops and ratings of materials; fire retardants; Sanborne maps.

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|---|--------------|----------|----------|----------|
| Business and Public Administration | 2.502 | 3 | 0 | 3 |
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This introductory course concentrates around the involvement of students in the activities of the business organization and its operative and managerial functions. Emphasis is placed on decision-making and the 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.

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|--------------------------------|--------------|----------|----------|----------|
| Business Correspondence | 2.672 | 3 | 0 | 3 |
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A review of grammar and punctuation. Vocabulary building and spelling will receive emphasis. The majority of the emphasis of the course, however, will be on the writing of various types of business correspondence . . . letters, memorandums, reports, report format, etc.

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| Business English Fundamentals | 2.673 | 3 | 0 | 3 |
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The purpose of this course is to develop the student's vocabulary, spelling ability, usage or words, and provides a review of the principles of grammar. Written and oral communications as required in business situations are emphasized.

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| Business Law | 2.320 | 3 | 0 | 3 |
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A review of the nature of law as necessary. Emphasis is on contractual relationships, the law of sales, bailments, and the negotiable instruments. Case studies are used to illustrate the principles involved.

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|--------------------------|--------------|----------|----------|----------|
| Business Machines | 2.660 | 1 | 3 | 2 |
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Business Machines presents instruction in the application of office machines to bookkeeping and other office procedures. The general function of adding machines and calculators, the understanding of their application in business, and the acquiring of reasonable skill in their use is the goal.

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|--------------------------|--------------|----------|----------|----------|
| Business Machines | 2.661 | 1 | 3 | 2 |
|--------------------------|--------------|----------|----------|----------|

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

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| Business Management | 2.202 | 3 | 0 | 3 |
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A practical course to give an understanding in five basic areas important to business. These areas are the billing of customers, the art of letter writing, simplified accounting, inventory control, and business advertising.

| | | Lec. | Lab. | Term Units |
|------------------------------|--------------|----------|----------|---------------|
| Cam and Gear Drafting | 4.225 | 0 | 8 | 3 |

This is an advanced course in the area of mechanical and machine drafting. The course work involved will include the calculation of various types of gears in addition to the detail drawing of gears. The principles of the cam will be discussed and displacement diagrams and detail drawings will be made to 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.

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| Chairside Assisting and Basic Lab Procedure | 5.403 | 2 | 6 | 4 |
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A continuation of Basic Chairside procedures including mixing filling materials, preparing impression materials for use, and processing the impression. The course also provides practical dental laboratory experience in pouring models and making base plates, and bite rims.

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|-----------------------------------|--------------|----------|----------|----------|
| Civil-Legal Responsibility | 5.219 | 3 | 0 | 3 |
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A study of law enforcement uses of weapons and force and the legal and moral aspects involved in police operations.

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| Commercial and Investment Properties | 2.419 | 3 | 0 | 3 |
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A course designed to provide information for licensed brokers and real estate salesmen. Emphasis is placed on process of selecting commercial property of all types for investment purposes. All factors of influence are analyzed. Determination of actual net income is stressed.

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|-----------------------------------|--------------|----------|----------|----------|
| Community-Police Relations | 5.215 | 3 | 0 | 3 |
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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. This course will guide and assist the police officers to become better informed of the conditions causing the above problems, and will improve the police understanding and awareness of the attitudes and feelings of the people among whom they work, and will enable them to relate themselves more adequately to their communities.

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|-----------------------------------|--------------|----------|-----------|----------|
| Computer Center Operations | 6.951 | 2 | 12 | 6 |
|-----------------------------------|--------------|----------|-----------|----------|

The student learns computer center operations while providing computer services. Comprehensive instruction is provided in both the lecture room and data center. Instruction and work experience are provided in six job titles. They are data center supervisor, console operator, librarian, peripheral equipment operator, scheduler-dispatcher, and control clerk. Instruction will cover technical duties, skills and responsibilities for each job title as they relate to the operation and maintenance of a data center using an IBM 360 computer.

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|-----------------------------------|--------------|----------|-----------|----------|
| Computer Center Operations | 6.952 | 2 | 12 | 6 |
|-----------------------------------|--------------|----------|-----------|----------|

Continuation of Computer Center Operations 6.951.
Prerequisite: Computer Center Operations 6.951.

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|-----------------------------------|--------------|----------|-----------|----------|
| Computer Center Operations | 6.953 | 3 | 12 | 6 |
|-----------------------------------|--------------|----------|-----------|----------|

Continuation of Computer Center Operations 6.952.
Prerequisite: Computer Center Operations 6.952.

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|-----------------------------------|--------------|----------|-----------|----------|
| Computer Center Operations | 6.954 | 3 | 12 | 6 |
|-----------------------------------|--------------|----------|-----------|----------|

Continuation of Computer Center Operations 6.953.
Prerequisite: Computer Center Operations 6.953.

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|-----------|---------------|
| Computer Center Operations | 6.955 | 2 | 12 | 6 |
| Continuation of Computer Center Operations 6.954. Prerequisite: Computer Center Operations 6.954. | | | | |
| Computer Graphics | 6.977 | 1 | 4 | 3 |
| Graphic techniques for drawing charts, graphs and three dimensional displays on printers, display units and plotters are instructed using problem oriented computer languages. Prerequisites: Computer Programming (COBOL) 6.963, Operations Research 6.967. | | | | |
| Computer Operating Systems | 6.973 | 3 | 0 | 3 |
| A comprehensive study of disk and tape operating systems. Prerequisites: Computing Systems and Job Control 6.949, System 360 Concept 6.958, Programming (Assembler) 6.969. | | | | |
| Computer Operating Systems | 6.974 | 3 | 0 | 3 |
| A study of operating systems used on large computers. Topics covered are data management coding, operations management and programmer system control. Prerequisites: Computer Operating Systems 6.973 and Programming (Assembler) 6.970 or Computer Programming (COBOL) 6.963. | | | | |
| Computer Programming (Assembler) | 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: Computer Systems and Job Control 6.949, System 360 Concepts 6.958, Computer Programming (COBOL) 6.961, Computer Programming (Fortran) 6.962. | | | | |
| Computer Programming (Assembler) | 6.970 | 3 | 6 | 5 |
| This course is a programming option for those students who are interested in becoming systems programmers. Subprogram modules and macro's are written, linked and tested. Prerequisite: Computer Programming (Assembler) 6.969. | | | | |
| Computer Programming (Assembler) | 6.971 | 3 | 6 | 5 |
| An advanced systems programming course. Programs are written using the universal instruction set. Theory and construction of monitors, interpreters, simulators, assemblers, and compilers. Prerequisite: Programming (Assembler) 6.970. | | | | |
| Computer Programming (COBOL) | 6.961 | 3 | 6 | 4 |
| An introduction to COBOL. Language structure and vocabulary are stressed. Theory and practice will be applied by programming business data processing problems. | | | | |
| Computer Programming (COBOL) | 6.963 | 3 | 6 | 4 |
| An intermediate course in COBOL. Problem definition and analysis, iterative techniques, efficiency coding and documentation are instructed. Prerequisite: Computer Programming (COBOL) 6.961. | | | | |

| | | Lec. | Lab. | Term Units |
|--|--|------|------|---------------|
| Computer Programming (COBOL) 6.964 | | 3 | 6 | 4 |
| An advanced course which places emphasis on efficiency, file organization, data retrieval and linking COBOL coded program modules. Prerequisites: Computer Programming (COBOL) 6.963. | | | | |
| Computer Programming, Fortran 6.962 | | 3 | 6 | 4 |
| An introduction to Fortran which stresses language structure, coding techniques, input and output record descriptions while solving simple management science problems. Prerequisites: Data Processing Math 6.942. Computer Programming (PL/I) 6.960. | | | | |
| Computer Programming (PL/I) 6.959 | | 3 | 3 | 3 |
| This course provides a basic introduction to a high level compiler language. Techniques of problem analysis, documentation, program coding and program testing are taught. | | | | |
| Computer Programming (PL/I) 6.960 | | 2 | 2 | 3 |
| A continuation of Programming PL/I. Advanced techniques of problem analysis, documentation, program coding and testing are taught. Prerequisite: Computer Programming 6.959. | | | | |
| Computing Systems 6.956 | | 2 | 0 | 2 |
| Instruction in the use of decision tables and flow charts, computer components and programming systems in problem solving; and provide adequate documentation for a solution. | | | | |
| Computing Systems and Job Control 6.949 | | 2 | 0 | 2 |
| This course is an introduction to the functional characteristics and general principles of the internal operation and supporting software of the IBM System 360 Computer. Prerequisite: Fundamentals of Computers and Programming 6.948. | | | | |
| Concrete Construction and Design 6.123 | | 2 | 3 | 3 |
| A study of concrete materials, shear and bending stresses and design calculations. Coverage is given to rectangular, tee, and reinforced beams, reinforced floor systems and columns, foundations, retaining walls and miscellaneous members. Laboratory work will consist of problem solving. Prerequisite: Sixth term standing or approval of department head. | | | | |
| Constitutional Law 5.213 | | 3 | 0 | 3 |
| A study of the Constitution of the United States and its provisions and amendments. This will include 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 Estimating 6.110 | | 2 | 3 | 3 |
| Designed to develop skills in estimating the amount and cost of materials required, and labor cost involved in various types of construction. An opportunity is provided for the application of these skills by requiring the student to make estimates of material and labor quantities and costs for representative type of construction. Prerequisite: Sixth term standing or approval of department head. | | | | |

| | | Lec. | Lab. | Term Units |
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| Contracts and Specifications | 6.118 | 3 | 0 | 3 |

This is a course designed to acquaint the student with common usage and practice in the preparation of contracts and attendant specifications. Examination of existing contracts covering current jobs will be used whenever possible with practical problems designed to teach the application of theory learned.

Prerequisites: Second Year Standing or approval of dept. head.

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| Cost Accounting | 2.576 | 3 | 0 | 3 |
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This course is developed to involve the student in utilizing cost data as a tool to aid management in areas of analysis and control. It leads through 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.

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| Crime and Delinquency | 5.201 | 3 | 3 | 4 |
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The course examines facts of crime and delinquency and relates them to factual 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.

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| Crime and Delinquency | 5.202 | 3 | 3 | 4 |
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The course is 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 society reactions are studied. Operations of police, courts, probation departments, parole departments, and prisons are examined.

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| Criminal Investigations | 5.206 | 3 | 3 | 4 |
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A study of the basic tools of investigation and an introduction to investigative work. To acquaint the student with the meaning of a complete investigation and to stimulate his 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 utilized. Investigative methods and scientific techniques, and aids available, search of the scene, gathering of information and evidence, recording of notes and reporting of the findings all are a part of this course. Recent court decisions as they bear on admissibility of evidence and use of interrogations are reviewed.

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| Criminal Investigations | 5.207 | 3 | 3 | 4 |
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A course in the 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; 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 the evidence in court is constantly uppermost in the investigator's mind as he progresses with the case.

| | | Lec. | Lab. | Term Units |
|--------------------------------|--------------|----------|----------|---------------|
| Criminal Investigations | 5.208 | 3 | 3 | 4 |

The course involves 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.

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| Criminal Law | 5.211 | 3 | 0 | 3 |
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Various crimes are studied as to their structure and definitions. 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 delicti 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.

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| Criminal Law | 5.212 | 3 | 0 | 3 |
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A continuation of Criminal Law 5.211 by which further study is made of criminal procedures and specific review and study is made of additional violations.

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| Data Communication | 6.976 | 2 | 0 | 2 |
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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.

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| Data Processing Management | 6.946 | 3 | 0 | 3 |
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This course provides 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.

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| DC Theory and AC Theory | 4.255 | 12 | 0 | 9 |
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This is a course covering the 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 taught and coordinated with the theory areas as needed.

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| DC Theory and AC Theory Lab. | 4.256 | 0 | 6 | 2 |
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This course uses the 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 as needed.

| | | Lec. | Lab. | Term Units |
|--------------------------------------|--------------|----------|----------|---------------|
| Dental Anatomy and Physiology | 5.405 | 3 | 0 | 3 |

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

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| Dental Office Correspondence | 5.412 | 3 | 0 | 3 |
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A course designed to provide the Dental Assistant student with a study of Dental Office communications pertaining to letter writing, billing, requisitioning, etc.

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| Dental Office Management | 5.410 | 2 | 3 | 3 |
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A course designed to help the student with personal and vocational relationships, including the telephone, reception procedure, business office procedure, purchases, storage and care of supplies, and maintenance of office equipment.

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| Dental Office Practice | 5.409 | 0 | 12 | 2 |
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This course consists of practice and observation in an ethical dental office.

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| Dental Sciences | 5.404 | 3 | 0 | 3 |
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A study of the various fields of specialized dentistry recognized by the American Dental Association and the science connected with them. The course includes such subjects as oral hygiene, bacteriology, sterilization, drugs, and diet and nutrition.

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| Design Problems | 4.605 | 2 | 6 | 4 |
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Opportunities in advanced drafting room practice are offered in this course. The student applies knowledge of mathematics, science, and drawing to practical problems while he is designing complete machines or component parts machines. He analyzes the problem, gathers data, sketches ideas on paper, does all necessary mathematical calculations, makes working drawings, and finally checks his work. Throughout the course he is encouraged to use his judgment and work on his initiative.

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| Dictating Machine Operation | 2.663 | 1 | 4 | 3 |
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The student develops skill in the dictation of letters, memos, reports and in the techniques of transcribing from the recorded voice to the typewriter. The student learns to operate the transcriber and to transcribe a mailable copy with speed and efficiency.

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| Dimensioning and Layout | 4.224 | 2 | 0 | 2 |
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This is a theory course designed to give a detailed presentation of modern dimension and layout techniques. Typical area of study in this course will include principles and rules of dimensioning, datums, elements of gaging, layout practices, and projective and descriptive geometry as related to layout drawings.

Prerequisite: Machine Drafting 4.221.

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| DOS and OS Operations Management | 6.957 | 3 | 0 | 3 |
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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, management of storage libraries.

Prerequisite: System 360 DOS/TOS Facilities 6.975.

| | | Lec. | Lab. | Term Units |
|-----------------|--------------|----------|----------|---------------|
| Drafting | 4.101 | 0 | 4 | 2 |

This is a fundamental course in drafting designed to give the student a basic understanding of drawing techniques. Emphasis will be 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 will be covered.

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| Drafting | 4.105 | 0 | 4 | 2 |
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This is an intermediate course designed to prepare students to enter mechanical, structural, civil, and architectural drafting. It includes isometric projection, 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 head.

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| Drill Equipment, Tools and Terminology | 4.290 | 3 | 2 | 3 |
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A comprehensive study of drilling machines and accessory equipment, to develop an understanding of the variety of tools and tool usage. To develop a further understanding of the terminology, vocabulary and terms as used in the drilling industry to be accomplished through lecture, demonstration and field trips.

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| Drilling Machine Maintenance and Repair | 4.296 | 3 | 4 | 4 |
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A study of drilling machine maintenance and repair problems and the economy involved for safe and economical operation. A study of tool dressing is further undertaken to incorporate machining and welding skills which were developed earlier in the program.

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| Drilling Setups and Operations | 4.292 | 3 | 4 | 4 |
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A course designed to acquaint the student with a variety of machine setups and operations under varied conditions. The study to be made with the assistance of lecture, demonstration and field trips.

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

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| Earthwork Computations and Estimates | 6.528 | 1 | 3 | 2 |
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Problems in computing cuts and fills in highway work, mass diagrams, 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 dept. head.

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| Electric Arc Welding | 4.160 | 1 | 3 | 2 |
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A course in fundamentals on electric arc welding. Machine setting and electrode selection. Development of technique and electrode manipulation.

Prerequisite: Welding 4.150.

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| Electric Arc Welding | 4.162 | 2 | 6 | 4 |
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A continuation of Electric Arc Welding 4.160. Providing additional laboratory time for development of technique and understanding.

| | | Lec. | Lab. | Term Units |
|--|--------------|----------|----------|---------------|
| Electrical Circuits | 4.206 | 3 | 3 | 4 |
| A continuation of electrical theory with an emphasis on the analysis of the characteristics of complex waveform 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 wave-form analysis of combined networks. | | | | |
| 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 dept. head. | | | | |
| 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 electromagnetism, inductance and its characteristics, characteristics of capacitance, the electrical measurement instruments. | | | | |
| Prerequisite: Electrical Theory DC 6.200; Technical Mathematics 6.261, or approval of department head. | | | | |
| Electrical Theory DC | 6.200 | 3 | 3 | 4 |
| Presents 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. Students will study electricity and magnetism, circuits and components, currents, power, basic electronics and motors and controls. | | | | |
| 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 both service and laboratory type instruments, to gain the knowledge of the fundamental operating principles, to understand how the instruments work, using representative examples and explaining the specific function of the instruments and illustrate practical applications of the instruments. | | | | |

| | | Lec. | Lab. | Term Units |
|--|--------------|----------|----------|---------------|
| Elements of Design and Construction | 2.418 | 0 | 4 | 2 |
| A comprehensive non-technical course given primarily for real estate licensees to familiarize them with building construction and materials, costs, building codes, terminology used in construction. | | | | |
| Engine Theory and Maintenance | 4.291 | 2 | 4 | 3 |
| A continuation of the course Power Systems which will involve the student in a more detailed study of internal combustion engine performance. A study of Diesel Engines will be introduced concerning the operating and maintenance of such engines. | | | | |
| Prerequisites: Power Systems 4.172 or approval of department head. | | | | |
| Fabrication Problems | 4.157 | 0 | 4 | 2 |
| 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: Bench and Layout Practices, 4.810, Drafting 4.101, Mathematics 4.202 or approval of department head. | | | | |
| 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. | | | | |
| Fire Apparatus and Equipment | 5.102 | 2 | 2 | 3 |
| Familiarization with different types of fire apparatus; principles of application, care, and preventive maintenance; safe operating practices, emergency and non-emergency; National Board standards. | | | | |
| Fire Department Communications and Alerting Systems | 5.115 | 3 | 0 | 3 |
| Receiving, dispatching and radio communication procedures; FCC regulations; municipal alarm; telephone and tone-activated alarm; recording messages; tap-out procedures, running cards, etc. | | | | |
| 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. Basics of why and how various functions of administration are carried out; authority and responsibilities of command officers, chiefs, and elected officials. | | | | |
| Fire Fighting Skills | 5.110 | 0 | 9 | 3 |
| Individual skills using small tools and minor equipment; practices in forcible entry, use of masks, salvage and overhaul, and different applications of small tools and minor equipment, safety practices. | | | | |
| Fire Fighting Skills | 5.111 | 0 | 9 | 3 |
| Practice in team skills in various fire ground operations including hose and ladder evolutions, ventilation and coordinated attack simulation. | | | | |
| Fire Fighting Tactics and Strategy | 5.113 | 3 | 0 | 3 |
| Pre-fire survey and planning; response and size-up; fire ground tactics; analysis and post-mortem. | | | | |

| | | Lec. | Lab. | Term Units |
|--|--------------|----------|----------|---------------|
| Fire Investigation | 5.117 | 3 | 2 | 4 |
| Effect on fire prevention by isolating cause of fire; interpreting clues and burn patterns leading to point of origin; identifying sources of ignition and materials ignited; preservation of the fire scene. | | | | |
| Fire Protection Systems and Extinguishers | 5.106 | 3 | 0 | 3 |
| Portable extinguisher equipment; sprinkler system; protection systems for special hazards; fire detection systems; ventilating systems. | | | | |
| 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; fire ground water supply problems; Underwriter's requirements for pumps and accessories. | | | | |
| First Aid | 5.450 | 1 | 2 | 2 |
| A class in 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 |
| This course is designed to develop skills and knowledge for the immediate and temporary care in case of accident or sudden illness; preventive measures. This will be the standard Red Cross First Aid Course. | | | | |
| FM and HIFI Lab | 4.271 | 0 | 3 | 1 |
| This lab consists of applying the principles studied in the theory course 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. | | | | |
| FM and HIFI Theory | 4.270 | 3 | 0 | 3 |
| In this course a study is made of the principles of FM receivers, the different kinds of FM detectors, the principles of multiplexing, the principles of HIFI, the operation of stereo sets, a study of HIFI amplifiers, the speaker systems. | | | | |
| Forest Mensuration | 6.300 | 3 | 4 | 4 |
| This course is devoted to measuring the individual forest products and the standing tree in the forest. The student studies the various methods of timber cruising and puts this knowledge to work in actual field practice. | | | | |
| Forest Pathology | 3.607 | 0 | 2 | 1 |
| A course designed to enable the student to recognize 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 | 1 | 5 | 3 |
| This course is designed to introduce the student to the basic principles of mapping methods with particular emphasis on the uses of photogrammetry in the forest industries. | | | | |
| Forest Products | 4.280 | 3 | 3 | 4 |
| This course is designed to familiarize the student with the various forest products such as poles, piling, timbers, lumber, plywood, furniture, Particle board and other manufactured wood products. Emphasis is placed upon the properties, uses and the manufacturing processes. | | | | |

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|----------|---------------|
| Forest Products | 4.281 | 3 | 3 | 4 |
| This course is designed to familiarize the student with the various chemical processes that convert wood and wood residues into pulp, cellulose, turpentine, charcoal and other products through chemical means. | | | | |
| Fortran Computer Programming | 6.931 | 3 | 3 | 4 |
| Theory and practice in solving engineering and scientific data processing problems on modern digital computers. Principles of problem analysis, block diagramming, coding and checkout of programs. | | | | |
| Prerequisite: Technical Mathematics 6.266. | | | | |
| Fundamentals of Computers and Programming | 6.948 | 3 | 0 | 3 |
| This course teaches such techniques or tools as decision tables and flowcharts; the use of computer components and programming systems; solving problems and providing adequate documentation for his solutions. This course also provides an introduction to programming techniques such as loops, switching routines, branches and indexing. | | | | |
| Fundamentals of Exchanging | 2.417 | 3 | 0 | 3 |
| The principles involved and practices followed in exchanging of real property for like property. Analyze tax situations involved, and advantages accruing from certain exchanges. | | | | |
| Prerequisite: Real Estate Principles 2.400 and 2.410. | | | | |
| 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; public relations. | | | | |
| 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 special emphasis on tax planning, and integration of tax concepts with procedural aspects. | | | | |
| Prerequisite: Real Estate Principles 2.400 and 2.410. | | | | |
| General Forestry | 3.600 | 3 | 0 | 3 |
| This course presents an orientation and over-all 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. | | | | |
| Geometric Construction | 4.120 | 1 | 1 | 1 |
| A course designed to develop an understanding of the basic geometric construction used in drafting. Laboratory time is provided for practice of construction and application of concepts. | | | | |
| Group Process | 5.730 | 3 | 0 | 3 |
| The dynamics of human behavior in group process; concepts applied to group and family action; and the basic concept and generalization of group dynamics. | | | | |

| | | Lec. | Lab. | Term Units |
|--|--------------|----------|----------|---------------|
| Growth and Development | 5.524 | 3 | 0 | 3 |
| A study of human growth and development from conception to death. It studies the whole person including physical, emotional, social and spiritual characteristics. | | | | |
| Hazardous Materials | 5.108 | 3 | 0 | 3 |
| Review of basic chemistry; safe practices for storage and handling of flammable liquids, and gases; identification of hazardous materials by color, symbol, and marking; recommended methods for fire control. | | | | |
| Hazardous Materials | 5.109 | 3 | 0 | 3 |
| Tactics for combating fires involving hazardous chemicals and other materials; radiation hazards of the fire service; space age fuel; highway transportation, explosives, etc. | | | | |
| Health Occupations Overview | 5.700 | 1 | 0 | 1 |
| Concepts underlying the health field; health services and resources in the community; the role of the health worker as 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. Process 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. | | | | |
| 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, the measurement of fluid properties. The relationship of hydrostatic pressure and center of gravity and the effect of hydrostatic pressure exerted against plane surfaces will also be discussed. Time is provided for demonstrations and experiments to help clarify the principles and procedures covered in class. | | | | |
| Prerequisite: Fourth term standing or approval of department head. | | | | |
| Hydraulics | 6.114 | 2 | 2 | 3 |
| Consists of the 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, Reynolds' 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. | | | | |
| Hydraulic and Pneumatic Systems | 4.173 | 2 | 3 | 3 |
| The course is designed to provide instruction in the fundamental principles of hydraulic and pneumatic systems. The course 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. The student will learn the factors to be considered in the selection, installation and maintenance of hydraulic and pneumatic systems. | | | | |
| Prerequisites: Mathematics 4.202 and Mechanical Systems or approval of department head. | | | | |

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|----------|---------------|
| 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 head. | | | | |
| Industrial Electronics | 6.218 | 3 | 3 | 4 |
| An introductory class and laboratory course covering the principles and applications of electronics in industry. Involves a review of the principles of D-C motor controls with emphasis on electronic controls. Also covers relays and time-relay circuits; industrial photo-electric control and typical applications; electronic power-control with saturable core reactors and the amplidyne; and electronic control of welding. | | | | |
| Prerequisite: Amplifier Circuit and Design. | | | | |
| 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. Employing 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 sessions. | | | | |
| Industrial Materials and Processes | 4.170 | 2 | 4 | 3 |
| A course designed to familiarize the student with the materials used by modern industry to manufacture industrial products. The ferrous and non-ferrous metals and alloys are covered as well as a number of the newly developed "exotic" metals. Emphasis is placed on the non-metallic materials used in industry. Included in the course are the study of the processes and methods of utilizing these industrial materials. 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 head. | | | | |
| Industrial Television | 6.228 | 3 | 6 | 5 |
| A theory and lab course designed to cover television systems, scanning and synchronization, composite video signal, 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 synchronization, 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. | | | | |
| Intermediate Arc Welding | 4.154 | 2 | 3 | 3 |
| This is a continuation of Basic Arc Welding covering ferrous and non-ferrous alloys and welding procedures. | | | | |

| | | Lec. | Lab. | Term Units |
|---------------------------------|--------------|----------|-----------|---------------|
| Intermediate Arc Welding | 4.241 | 2 | 12 | 5 |

This is a continuation of Basic Arc Welding covering ferrous and non-ferrous alloys and welding procedures. Demonstration and supervised practice of techniques on various metals, applied in fabrication and repair will run concurrently with related information concerning the use and structure of these metals.

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|---|--------------|----------|----------|----------|
| Intermediate Oxy-Acetylene Welding | 4.243 | 0 | 8 | 2 |
|---|--------------|----------|----------|----------|

This is a continuation of Basic Oxy-Acetylene Welding covering ferrous and non-ferrous alloys and welding procedures. Demonstrations and supervised practice in heating, hard and soft soldering, brazing, hard surfacing, etc., will run concurrently with technical and related information concerning materials and features of various fused and bonded joints. This course is designed to complete a thorough preparation and familiarization with the oxy-acetylene flame as used in industry.

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|---|--------------|----------|----------|----------|
| Introduction to Basic Dental Office Procedures | 5.411 | 2 | 3 | 3 |
|---|--------------|----------|----------|----------|

This course is designed to give the student basic knowledge and practical experience in all of the general dental office procedures including seating and dismissing patients, charting cavities, making basic set-ups for general operative procedures, and acquaint the student with the dental assisting curriculum and the qualifications necessary for success in that field.

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|--|--------------|----------|----------|----------|
| Introduction to Data Processing | 6.940 | 2 | 0 | 2 |
|--|--------------|----------|----------|----------|

This course is designed for persons having no prior knowledge of data processing. Includes a brief discussion of the history of data processing, and the need for automatic means of processing information. The course is a general survey of the data processing field and introduces the student to data processing terminology. This course also charts the students two year educational path.

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|--|--------------|----------|----------|----------|
| Introduction to Fabrication Practices | 4.100 | 2 | 7 | 4 |
|--|--------------|----------|----------|----------|

An introductory course of observation and drafting. Students will be assigned drawing projects and will normally view the physical object of the drawing in order to develop their visualization of the subject on the drafting board. Frequent field trips should be made to observe modern methods of manufacturing, casting, forging, construction, and assembly of local industry. Emphasis will be 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.

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|--|--------------|----------|----------|----------|
| Introduction to Law Enforcement | 5.200 | 3 | 4 | 4 |
|--|--------------|----------|----------|----------|

This course provides an over-all introductory study of the field of law enforcement. It includes a review of the philosophy and history of police work and of crime and police problems. It studies the organization and jurisdiction of local, state, and federal law enforcement agencies. It surveys the professional career opportunities, the qualifications required, and police ethics.

| | | Lec. | Lab. | Term Units |
|--------------------------------|--------------|----------|----------|---------------|
| Introduction to Mapping | 4.132 | 1 | 7 | 3 |

This course is designed to acquaint the student with the basic principles of map construction and uses. The material is presented in such a manner so as to lead the student to an understanding of the basic principles of map drafting.

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|--|--------------|----------|----------|----------|
| Introduction to Medical Assisting | 5.600 | 3 | 0 | 3 |
|--|--------------|----------|----------|----------|

A survey of the requirements and qualities for success as a medical assistant; patient-physician legal relationships, professional liability, health and accident programs, medical ethics, types of medical practice, types of medical care, government medical care programs, and an introduction to medical terminology.

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|---------------------------------------|--------------|----------|----------|----------|
| Introduction to Specifications | 4.102 | 3 | 0 | 3 |
|---------------------------------------|--------------|----------|----------|----------|

This is a course designed to acquaint the student with the common usage and practice in preparation and interpretation of specifications. Examinations of existing specifications covering current subjects will be used whenever possible with practical problems to teach the application of theory learned.

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|---|--------------|----------|----------|----------|
| Introduction to Systems and 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. Procedures analysis and improvement techniques, the role of systems and procedures in business management, systems charting, working simplification and measurement.

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|------------------------|--------------|----------|----------|----------|
| Jail Procedures | 5.204 | 2 | 3 | 3 |
|------------------------|--------------|----------|----------|----------|

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 trustees, work crews and work-releases. Will include field trips to jail facilities.

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|---------------------------------|--------------|----------|----------|----------|
| Jig and Fixture Drafting | 4.231 | 0 | 8 | 3 |
|---------------------------------|--------------|----------|----------|----------|

This is an advanced course in the area of tool drafting. In the lab work the student will use his 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 head.

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|--------------------------------|--------------|----------|-----------|----------|
| Job Machining Practices | 4.845 | 3 | 12 | 7 |
|--------------------------------|--------------|----------|-----------|----------|

This course covers typical job shop applications. Students repair and manufacture a variety of machines, equipment, parts and tools. Typical job shop sequence will be followed with emphasis on speed and quality of finished product.

Prerequisites: Advanced Lathe Practices 4.833, Advanced Milling Machine Practices 4.837, Metal Fabrication and Finishing 4.174.

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|----------------------------|--------------|----------|----------|----------|
| Juvenile Procedures | 5.218 | 2 | 3 | 3 |
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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.

| | | Lec. | Lab. | Term Units |
|----------------------------------|--------------|----------|----------|---------------|
| Land Division and Mapping | 6.335 | 2 | 4 | 3 |

This course is designed to introduce the student to the basic principles of map layout, methods of platting, and photogrammetric procedures.

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|-------------------------|--------------|----------|----------|----------|
| Layout Practices | 4.245 | 2 | 3 | 3 |
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This is a course on 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.

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|----------------------------|--------------|----------|----------|----------|
| Logging and Milling | 4.282 | 2 | 6 | 3 |
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A course designed to acquaint the student with the harvesting and transportation of logs, and the manufacturing processes and machines in the lumber industry.

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|-----------------------|--------------|----------|----------|----------|
| Machine Design | 4.603 | 3 | 2 | 4 |
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A course in which the design principles of machine elements are taken up and calculations are made in determining the size and shape of various machine parts. It 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.

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|-------------------------|--------------|----------|----------|----------|
| Machine Drafting | 4.221 | 1 | 6 | 3 |
|-------------------------|--------------|----------|----------|----------|

This is an introductory course in the general area of machine drafting. Lettering, the use of drafting machines and instruments, and line quality will be stressed in this course. Shape description and elements of modern dimensioning will be taught through the application of problems in the area of orthographic projections, section views, and auxiliary views.

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|-------------------------|--------------|----------|----------|----------|
| Machine Drafting | 4.222 | 0 | 5 | 2 |
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This is a continuation of Machine Drafting. Lettering, line quality, and drafting techniques will continue to be stressed. Areas of study will include the application on precision dimensioning, secondary auxiliary, isometric drawing, and related pictorial drawings.

Prerequisite: Machine Drafting 4.221.

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|-------------------------|--------------|----------|----------|----------|
| Machine Drafting | 4.223 | 0 | 5 | 2 |
|-------------------------|--------------|----------|----------|----------|

This is a continuation of Machine Drafting. Lettering, line quality, and drafting techniques will continue to be stressed. Areas of study will include revolutions, assembly and production drawings, and an introduction to engineering graphics.

Prerequisite: Machine Drafting 4.222.

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|--------------------------------|--------------|----------|----------|----------|
| Machine Shop Automation | 4.824 | 2 | 0 | 2 |
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A study of theory and practices of automation. Mechanical, numerical card and tape controls will be studied. History, theories, trends and applications of automated machines will be given attention. Field trips will be scheduled to supplement classroom activities.

Prerequisites: Mathematics 4.202, Machine Tool Processes 4.804 or approval of department head.

| | | Lec. | Lab. | Term Units |
|--|--|------|------|---------------|
|--|--|------|------|---------------|

Machine Shop Practices 4.841 3 6 5

This course stresses the working conditions of a typical machine shop. Students will be assigned projects that will require the related technical information and shop skills previously acquired. Instruction will include advanced theory application and extended machine operations. Speed and accuracy will be 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 are 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

A basic machine tool operations course. Introducing the student 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 the basic course Machine Tool Operations 4.802 involving typical setup and machining operations.

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 head.

Manufacturing Processes 6.606 2 3 3

This course is designed to provide a background of knowledge covering the various manufacturing materials and fundamental types of manufacturing methods as employed in cold working processes. Through lecture, demonstrations 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

This course is designed to provide 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 non-destructive methods.

Mapping and Platting 4.131 1 7 3

Principles of map platting using field survey data. Office procedure: Basic earthwork computation, legal description, and subdivision planning. Simulated problems are used for application of principles.

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|-----------|---------------|
| Mechanical Drafting | 4.109 | 0 | 4 | 2 |
| An advanced course emphasizing mechanical design. It includes sketching, cam and gear layout, isometric drawings, welding drawings, tolerance and allowances, and tool jig drawings. Simplified drawing techniques will be covered and general shop procedures will be discussed. Emphasis will be placed on the industrial requirements of drawings. | | | | |
| Prerequisite: Drafting 4.105 and Mathematics 4.202 or approval of department head. | | | | |
| Mechanical Systems | 4.171 | 3 | 3 | 4 |
| A course designed to familiarize the student with 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 head. | | | | |
| Mechanisms | 6.612 | 3 | 3 | 4 |
| A course dealing 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. Centroids 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 head. | | | | |
| Medical Assisting, Advanced Procedures | 5.606 | 2 | 3 | 3 |
| Theory and practice of basic diagnostic and treatment procedures; collection, preparation and preservations of specimens for diagnostic studies; assisting with treatment procedures: physical therapy, diet therapy, and dressing application. | | | | |
| Prerequisite: Medical Assisting, Basic Procedures 5.602. | | | | |
| Medical Assisting, Basic Procedures | 5.602 | 3 | 3 | 4 |
| Medical assisting techniques, methods and procedures; reception of patients, assisting the physician with examinations, sterilization of equipment and supplies, tray set-ups, use of instruments, care of equipment and supplies including drugs and solutions, and common prescription abbreviations. | | | | |
| Prerequisite: Introduction of Medical Assisting 5.600. | | | | |
| Medical Office Management | 5.607 | 3 | 0 | 3 |
| This course is designed to prepare the medical assistant to handle finances and records with accuracy and efficiency and to provide an understanding of accounting, credits, and collection that will facilitate working with accountants, auditors, and collection agencies in maintenance of good records. It will include 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. | | | | |
| Medical Office Procedures | 5.604 | 2 | 3 | 3 |
| This course consists of instruction in techniques of telephoning, receiving patients, appointment making, filing, medical insurance forms, medical office transcriptions, and correspondence. | | | | |

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|----------|---------------|
| Medical Science | 5.605 | 2 | 0 | 2 |
| Survey of disease conditions, types of treatment, and medical and surgical specialties. | | | | |
| Metal Fabrication and Finishing | 4.174 | 2 | 4 | 3 |
| A course 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 will perform 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 |
| A course designed to develop a basic familiarity and basic skills in semi-automatic welding. A study of the principles involved in the equipment, materials, and procedures will be 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 head. | | | | |
| Metallurgy | 6.602 | 2 | 3 | 3 |
| This course 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 |
| This course is designed to develop the student's knowledge in the techniques of supervision. The course will cover 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 |
| A 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 mw 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 course furnishing 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, his maintenance of a strictly unbiased and impartial attitude all are reviewed and studied. The student participates in moot court sessions gaining experience to familiarize himself with court procedures. | | | | |
| Natural Cover Fire Protection | 5.151 | 3 | 2 | 4 |
| The organization, methods, tactics, and strategy of safely 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. | | | | |

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|-----------|---------------|
| Network Analysis | 6.230 | 2 | 0 | 2 |
| A course to develop 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: Advanced Nursing | 5.706 | 4 | 15 | 7 |
| Meeting the needs of children and adults in more complex nursing situations. Nursing care of a group of children or adults, of a child or adult with multiple problems, a child or adult in a crisis situation, a child or adult in emergency situations. | | | | |
| Nursing: Fundamentals | 5.701 | 4 | 12 | 8 |
| The course is designed to develop understanding of technical nursing and to provide a foundation for nursing practice. The rationale for the course is to introduce the student to nursing practice based on meeting basic health needs of patients. | | | | |
| Nursing: Long Term Illness | 5.703 | 4 | 12 | 8 |
| Meeting the basic needs of children and adults with long term illness; nursing care during the rehabilitative process; caring for patient with metabolic disorders, limited motion handicaps, audio-visual handicaps and neurological handicaps. | | | | |
| Nursing: Maternal and Child Health | 5.702 | 4 | 12 | 8 |
| The study and practice of maternal and child health, based on family-centered nursing, incorporates normal health processes occurring in mothers during the maternity cycle, and in the children from birth through adolescence. The abnormal health processes are emphasized only as they enable the student to understand the normal. | | | | |
| Nursing: Mental Illness and Mental Retardation | 5.705 | 4 | 15 | 9 |
| Meeting the basic needs of children and adults with mental illness and mental retardation. Nursing care of patients with patterns of withdrawal, depression patterns, anxiety reaction patterns, antisocial patterns, behavior patterns expressed through the use of alcohol and drugs, and mental retardation. | | | | |
| Nursing: Short Term or Acute Illness | 5.704 | 4 | 15 | 9 |
| Meeting the basic and therapeutic needs of children and adults with acute or short term illness; caring for patients with common communicable diseases and fluid-electrolyte imbalance due to common acute gastrointestinal disorders and renal, respiratory, cardiovascular and neoplastic disorders. | | | | |
| Nursing Trends and Practices | 5.720 | 2 | 0 | 2 |
| Survey of nursing history and a study of the present role of nursing as a profession in the promotion of individual, family and community health. Designed to establish a base for further study of nursing. | | | | |
| Office Procedures | 2.641 | 2 | 2 | 3 |
| Emphasis will be on duties involved in handling of office supplies, handling of mail and other transmittal services, using telephone and telegraph facilities, using information sources, and preparing office records and reports. Office relations and job application will be stressed. | | | | |

| | | Lec. | Lab. | Term Units |
|--|--------------|----------|----------|---------------|
| 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 in this course. | | | | |
| Prerequisite: Data Processing Mathematics 6.942. | | | | |
| Operations Research | 6.967 | 3 | 3 | 4 |
| An elective course which presents queuing theory, decision theory, assignment techniques, statistical and algorithmic methods of simulation, with case studies. Advanced Fortran methods are instructed. | | | | |
| Prerequisite: Operations Research 6.966. | | | | |
| Operations Research | 6.968 | 3 | 4 | 5 |
| An advanced elective course which presents information theory, system dynamics, feed back and stability of business management control systems, with case studies. A knowledge of Fortran is used in this course. | | | | |
| Prerequisite: Operations Research 6.967. | | | | |
| Oscillator Circuits and Design | 6.225 | 2 | 6 | 4 |
| A continuation of amplifier circuits and design. Involves the study of single-phase rectifier circuits and filters with calculation of the ripple-factor. Introduces the fundamental feedback equation and covers positive and negative feedback. Various types of feedback oscillators including the Hartley and the Colpitts are analyzed. Covers negative-resistance oscillators, miscellaneous sine-wave oscillators, non-sinusoidal oscillators, including various multivibrator circuits. The principles of AM and FM modulation and detection are studied and the theory and application of the cathode-ray oscilloscope is included. | | | | |
| Prerequisites: Amplified Circuits and Design 6.216 or approval of department head. | | | | |
| Oxyacetylene Welding | 4.161 | 1 | 3 | 2 |
| A course in fundamentals on oxyacetylene welding, introducing brazing and cutting processes. | | | | |
| Prerequisite: Welding 4.150. | | | | |
| Personal Development | 2.518 | 1 | 1 | 1 |
| A course designed to assist the student in recognizing his or 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 a pleasing image through poise and posture. | | | | |
| Photography | 5.222 | 2 | 3 | 3 |
| The study and practice of the various uses of photography in police work, including the identification of persons and things; use in storing of information, evidence, and proof; uses in crime solving, surveillances and other offender action; use of photographs as court exhibits; use as training aids and in building and maintaining public relations. | | | | |

| | | Lec. | Lab. | Term Units |
|------------------------|--------------|----------|----------|---------------|
| Plane Surveying | 6.101 | 2 | 6 | 4 |

A beginning course in surveying techniques designed to give the student an understanding of the 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.

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|------------------------|--------------|----------|----------|----------|
| Plane Surveying | 6.103 | 2 | 6 | 4 |
|------------------------|--------------|----------|----------|----------|

A continuation of Plane Surveying 6.101 designed to familiarize the student with the engineer's transit and its uses and an introduction to stadia surveying and leveling.

Prerequisites: Plane Surveying 6.101 and Tech. Math. 6.261 or equivalent.

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|------------------------------|--------------|----------|----------|----------|
| Police Administration | 5.216 | 3 | 0 | 3 |
|------------------------------|--------------|----------|----------|----------|

A course to study budget, finance, care, and handling of equipment of a police agency: It is designed to acquaint the working officer as well as command personnel of the problems and needs involved in administering a department. It will also provide 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.

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|------------------------------|--------------|----------|----------|----------|
| Police Administration | 5.217 | 3 | 0 | 3 |
|------------------------------|--------------|----------|----------|----------|

A companion course with Police Administration 5.216 to: First, study the organizational and administrative structure of a police agency; secondly, it analyzes and reviews all phases of police personnel matters, including the processing of applicants, hiring and training of personnel, resolving of personnel problems, issuance of efficiency merit ratings, and awarding of advancements.

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|------------------------------|--------------|----------|----------|----------|
| Police Report Writing | 5.223 | 3 | 0 | 3 |
|------------------------------|--------------|----------|----------|----------|

One of the fundamental tools of any law enforcement agency is the written report. This course covers the basic principles of composition and of forms of writing reports. The subjects covered are: Basic English, why reports are written, types of reports, format of reports, effectiveness of writing styles, gathering and marshalling of facts, method of writing the report, typing the report and visual aids in a report.

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|----------------------|--------------|----------|----------|----------|
| Power Systems | 4.172 | 3 | 4 | 4 |
|----------------------|--------------|----------|----------|----------|

A course designed to familiarize the student with the operation, maintenance and minor repair of 2 cycle and 4 cycle gasoline and diesel engines and to provide for learning the proper procedures in making minor service adjustments and repairs to these units. Through laboratory and classroom experiences the student will gain knowledge of the theory of operation and will have an opportunity to study the component parts of these engines.

Prerequisite: Practical Physics concurrently, or approval of department head.

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|--------------------------|--------------|----------|-----------|----------|
| Practical Nursing | 5.520 | 3 | 15 | 8 |
|--------------------------|--------------|----------|-----------|----------|

This course provides opportunities for students to identify basic needs of self and patients, and to develop skills in meeting the basic needs of patients. It 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.

| | | Lec. | Lab. | Term Units |
|--------------------------|--------------|----------|-----------|---------------|
| Practical Nursing | 5.521 | 6 | 24 | 14 |

This course centers around needs of patients in conditions of illness; the implication of symptoms and treatment of common, representative conditions as related to basic nursing care and skills. Special diets, medications and oxygen are included as therapeutic needs. Students will share patient observations and experiences in group conference to integrate the age factor as it relates to needs of patients, and will make applications of learning about growth and development.

Prerequisite: Practical Nursing 5.520.

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|--------------------------|--------------|----------|-----------|-----------|
| Practical Nursing | 5.522 | 6 | 24 | 14 |
|--------------------------|--------------|----------|-----------|-----------|

This course provides opportunities for students to assist in more complex nursing situations in meeting basic needs of patients . . . care of mothers and newborn, mentally ill, critically ill and chronically ill.

Prerequisite: Practical Nursing 5.521.

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|--------------------------------------|--------------|----------|----------|----------|
| Problems of Physical Evidence | 5.220 | 3 | 6 | 5 |
|--------------------------------------|--------------|----------|----------|----------|

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 transporting of evidence, including properly identifying it and wrapping it while still preserving its evidential value. The familiarization of laboratory services available to police through crime laboratories of the state F.B.I., large city departments and other public and private laboratories. The study of laboratory techniques, capabilities, limitations in the examinations of firearms, clothing, stains, blood, poisons, narcotics, automobiles, etc.

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|--------------------------------------|--------------|----------|----------|----------|
| Problems of Physical Evidence | 5.221 | 3 | 3 | 4 |
|--------------------------------------|--------------|----------|----------|----------|

A further study of reasons and methods of presenting articles of evidence to be admitted in court. How physical evidence should be identified and preserved both at time of discovery and later laboratory examinations, with the evidentiary chain of custody being maintained. Techniques in fingerprinting, lifting and comparing latent prints, casting impressions, examining miscellaneous particles, hairs, fibers, bullets, and documents.

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|-------------------------|--------------|----------|----------|----------|
| Project Drafting | 4.119 | 1 | 9 | 4 |
|-------------------------|--------------|----------|----------|----------|

This course emphasized working conditions of the industrial drafting room. Students will be assigned projects that will include one or more drawings requiring all of the skills previously acquired. Instruction will include the methods for detail layout, reading specifications, common materials of fabrication, checking and back checking drawings, and material takeoffs. Discussion will cover the administration of drafting room, issuing drawings and revisions. Speed and accuracy will be considered of paramount importance.

Prerequisite: Drafting 4.105 which may be taken concurrently.

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|-------------------------|--------------|----------|----------|----------|
| Project Drafting | 4.121 | 0 | 8 | 3 |
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A continuation of the emphasis on industrial working conditions. Students will be assigned projects (requiring use of all previously learned skills and principles) that will familiarize them with many of the specialized fields of drafting.

Instruction will include 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 will be discussed. Speed and accuracy will be considered of paramount importance.

Prerequisite: Project Drafting 4.119 or equivalent.

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|----------|---------------|
| Property Management | 2.422 | 1 | 3 | 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, personnel supervision. | | | | |
| Prerequisite: Real Estate Principles 2.400 and 2.410. | | | | |
| Pump Operation and Practical Hydraulics | 5.105 | 2 | 2 | 3 |
| Principles of fire apparatus pumping operations; fire ground water supply; construction and operation of fire service pumps and accessories; pump operation under emergency conditions; rule of thumb hydraulics. | | | | |
| Quality Control in Wood Products 6.285 | | 1 | 6 | 3 |
| This course is designed to give the student a practical working knowledge of the quality control methods and the ability to perform various quality control tests as used in the industry. Areas covered include lumber, plywood, particle board, hardboard, pulp and paper, etc. | | | | |
| Quality Control in Wood Products 6.287 | | 1 | 6 | 3 |
| This course is a continuation of Quality Control in Wood Products 6.285. The subject matter is continued in greater depth. | | | | |
| Prerequisite: Quality Control in Wood Products 6.285. | | | | |
| Radio Principles | 4.262 | 2 | 0 | 2 |
| A study of the circuits and components which go to 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 Lab. | 4.263 | 0 | 6 | 2 |
| A laboratory course covering the principles covered in the Radio Principles classes. The student will build up bread board models of the circuits for analysis and components will be changed to show the effects of these changes. | | | | |
| Radio Servicing | 4.264 | 2 | 0 | 2 |
| The 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 as to their own peculiar characteristics. | | | | |
| Radio Servicing Lab. | 4.265 | 0 | 6 | 2 |
| An application of the materials covered in the Radio Servicing theory class. Some circuits are bread boarded for analysis and the rest of the 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 | 2 | 3 | 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: Real Estate Principles 2.400 and 2.410. | | | | |
| Real Estate Appraisal | 2.409 | 2 | 3 | 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 | 5 | 0 | 5 |
| A case study approach to the problems of counseling with clients on real estate purchases, exchanges, speculation, and investment. | | | | |
| Prerequisite: 6th Term Standing. | | | | |
| 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 2.400 and 2.410. May be taken concurrently with Real Estate Principles 2.410. | | | | |
| 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 2.400 and 2.410. May be taken concurrently with Real Estate Principles. 2.410. | | | | |
| Real Estate Practices | 2.404 | 2 | 3 | 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 2.400 and 2.410. May be taken concurrently. | | | | |
| Real Estate Principles | 2.400 | 3 | 0 | 3 |
| A fundamental course to prepare for entry into the real estate industry. Includes economic, social, and legal bases of real estate transactions, factors of property rights, taxation, real estate instruments, finance, and property ownership. | | | | |
| Real Estate Principles | 2.410 | 3 | 0 | 3 |
| A continuation of Real Estate Principles 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: Real Estate Principles 2.400. | | | | |
| Real Estate Salesmanship | 2.415 | 1 | 4 | 3 |
| 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 Sales Promotion | 2.420 | 2 | 3 | 3 |
| In this course, consideration is given to all factors involved in promoting increased sale, including the analysis of advertising points, writing of realty ads, and general promotion of sales, brochures, mail advertising. | | | | |

| | | Lec. | Lab. | Term Units |
|--|--------------|----------|----------|---------------|
| Real Estate Trends and Developments | 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: Real Estate Principles 2.400 and 2.410.

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| Real Estate Work Experience | 2.431 | 2 | 8 | 4 |
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Cooperative part-time training in the field of real estate, utilizing the facilities of the business community. The real estate department cooperates with the employer in supervising the student. Students meet twice weekly in a class to discuss on-the-job progress and problems.

Prerequisite: Concurrent enrollment in two other real estate courses and department approval.

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|---------------------------|--------------|----------|----------|----------|
| Records Management | 2.642 | 2 | 2 | 3 |
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The study of the 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.

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| Rescue and Emergency Care | 5.120 | 3 | 2 | 4 |
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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 will be on the handling of respiratory, burn, cardiac, fracture and shock victims. Practical methods of carrying out rescues in a number of types of emergencies will be covered.

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| Roentgenology | 5.406 | 2 | 0 | 2 |
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A course teaching the history and discovery of X-Ray. Acquainting the student with the X-Ray equipment. Stressing safety and protective measures.

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|------------------------|--------------|----------|----------|----------|
| Route Surveying | 6.507 | 1 | 6 | 3 |
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This course is designed to acquaint the student with modes of transportation and the individual problems involved. The material is presented in such a manner so the student will become familiar with the methods and requirements of the various types of transportation.

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|-----------------------------|--------------|----------|----------|----------|
| Sanitary Engineering | 6.140 | 2 | 2 | 3 |
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A study of domestic and industrial water supply and waste disposal collection, storage, and treatment facilities.

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|--------------------------|--------------|----------|----------|----------|
| Scaling Practices | 3.617 | 2 | 6 | 4 |
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This course is designed to acquaint the student with the theory and principles of scaling. Considerable time will be spent actually scaling logs for net scale. Types of defect and deductions for each are discussed in conjunction with mill observations.

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|--------------------------|--------------|----------|----------|----------|
| Search and Rescue | 5.209 | 2 | 3 | 3 |
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A course in Search and Rescue is particularly appropriate in the Western Section of the United States, as in Oregon where outdoor recreation of all kinds of wilderness areas, largely uninhabited, is so common. This study is afforded to assure that the law enforcement officer understands and is familiar with techniques of organizing and operating

a search party in mountainous, uninhabited areas, including knowledge of equipment, supplies and personnel required. Surface and underwater rescue operations are covered including location and recovery of the bodies of drowning victims. The care and evacuation of injured victims are studied.

| | | Lec. | Lab. | Term Units |
|-------------------------------|--------------|----------|----------|------------|
| Secretarial Accounting | 2.651 | 3 | 0 | 3 |

The 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.

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|------------------------|--------------|----------|----------|----------|
| Semi-Conductors | 6.237 | 2 | 3 | 3 |
|------------------------|--------------|----------|----------|----------|

This course covers the physical principles underlying the behavior of semi-conductors, transistors, and other solid state devices as well as their application to various electronic circuits. The physics pertinent to transistors and semi-conductors is discussed as are their characteristics and the ways in which they operate. The use of transistors 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: Approval of department head.

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|-----------------------------|--------------|----------|----------|----------|
| Sheet Metal Drafting | 4.230 | 0 | 8 | 3 |
|-----------------------------|--------------|----------|----------|----------|

A course in sheet metal drafting procedures, developments, and layouts, using a variety of development methods.

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|----------------------|--------------|----------|----------|----------|
| Shop Projects | 4.250 | 0 | 2 | 1 |
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A course designed to provide practical experience in maintenance and repair of weld shop machines, accessories, fixtures. Selected fabrication and repair projects are also used to develop resourcefulness and confidence in the application of skills and knowledge developed in concurrent courses.

Prerequisites: Concurrent registration as full time student in the welding program or approval of department head.

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|----------------------|--------------|----------|----------|----------|
| Shop Projects | 4.251 | 0 | 2 | 1 |
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A continuation of Shop Projects 4.250.

Prerequisite: Second term standing in the welding program or approval of department head.

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|----------------------|--------------|----------|----------|----------|
| Shop Projects | 4.252 | 0 | 2 | 1 |
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The final course in the shop projects sequence.

Prerequisite: Third term standing in the welding program or approval of department head.

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|--------------------|--------------|----------|----------|----------|
| Shop Safety | 4.253 | 0 | 1 | 1 |
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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.

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|------------------------------------|--------------|----------|----------|----------|
| Shorthand and Transcription | 2.620 | 3 | 4 | 4 |
|------------------------------------|--------------|----------|----------|----------|

This is a beginning in Gregg Diamond Jubilee Shorthand. It is a study of simplified principles which should enable the student to take simple dictation and transcribe it in the early part of the course.

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|------------------------------------|--------------|----------|----------|----------|
| Shorthand and Transcription | 2.621 | 3 | 4 | 4 |
|------------------------------------|--------------|----------|----------|----------|

This course includes advanced vocabulary, phrase building, and word building principles. All of these are based on the basic shorthand principles learned in Shorthand 2.62 and 2.622.

| | | Lec. | Lab. | Term Units |
|------------------------------------|--------------|----------|----------|---------------|
| Shorthand and Transcription | 2.622 | 3 | 4 | 4 |

This course is a continuation of Shorthand Theory and Transcription 2.620. It deals with special forms, abbreviated forms, punctuation, and compound words, in connection with writing and transcribing exercises.

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| Sketching | 4.118 | 0 | 3 | 1 |
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This is a course designed to develop 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.

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|--------------------------------|--------------|----------|----------|----------|
| Small Pump Installation | 4.295 | 3 | 4 | 4 |
|--------------------------------|--------------|----------|----------|----------|

A course to develop an understanding and practice in the skills necessary for pump installation and operation under a variety of conditions. Various pumps and pump installations are studied with an emphasis being placed on efficient economical operation. Water flow measurement is studied to determine adequate well flow.

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|-----------------------|--------------|----------|----------|----------|
| Soil Mechanics | 6.124 | 2 | 3 | 3 |
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A study of index of properties of soil, hydraulic and mechanical properties, soil drainage and plastic equilibrium. Laboratory experiments and projects cover each phase of study.

Prerequisite: Second year standing or approval of department head.

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|----------------------------------|--------------|----------|----------|----------|
| Special Drilling Problems | 4.297 | 3 | 0 | 3 |
|----------------------------------|--------------|----------|----------|----------|

A course designed to acquaint the student with 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 head.

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|--|--------------|----------|----------|----------|
| State Drilling Standards and Record Keeping | 4.293 | 3 | 0 | 3 |
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A course designed to develop an understanding of 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 is also included.

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|------------------------------|--------------|----------|----------|----------|
| 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.

Prerequisites: Applied Mechanics 6.109 and Tech Math 6.266 or equivalent.

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|------------------------------|--------------|----------|----------|----------|
| 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 upon various structural members. This course includes a study of failure of structural connection and laboratory tests of materials.

Prerequisites: Strength of Materials 6.105 or equivalent.

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|---------------------------------------|--------------|----------|----------|----------|
| Structural Analysis and Design | 6.130 | 1 | 3 | 2 |
|---------------------------------------|--------------|----------|----------|----------|

The course deals with the determination of stresses induced by loads on structures of wood, steel, concrete, selections of appropriate structural 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.

Prerequisites: Applied Mechanics 6.109; Strength of Materials 6.105.

| | | Lec. | Lab. | Term Units |
|----------------------------|--------------|----------|----------|---------------|
| Structural Drafting | 4.111 | 0 | 4 | 2 |

An advanced course emphasizing civil and structural drafting procedures. It includes the function and design of: the general plan, stress diagrams, shop drawings, foundation or masonry plans, erection diagrams, falsework plans, and sheet metal layout. Also, bill of materials, rivet lists, drawing indexes, design considerations, and strength of joints will be covered. The student will become acquainted with structural shapes: bridges, dam, and earthwork constructions.

Prerequisite: Sixth Term standing or approval of department head.

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|---|--------------|----------|----------|----------|
| Subdividing and Community Planning | 2.438 | 2 | 0 | 2 |
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Includes 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: Real Estate Principles 2.400 and 2.410, and approval of department head.

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|-------------------------------|--------------|----------|----------|----------|
| Surveying Computations | 6.500 | 1 | 6 | 3 |
|-------------------------------|--------------|----------|----------|----------|

A study of trigonometric and geometric formulas, logarithms, mechanical computers and integrating instruments, area computations, traverse calculations, leveling, plotting surveys. Field trips and problems will be used as needed.

Prerequisite: Third Term standing or approval of department head.

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|----------------------------|--------------|----------|----------|----------|
| System 360 Concepts | 6.958 | 3 | 0 | 3 |
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Functional characteristics and principles of operation of System 360 Computer. Major topics include central processing unit; program execution; programming systems; input/output channels; control units and devices.

Prerequisites: Computing Systems 6.956 or Computing Systems and Job Control 6.949.

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|--------------------------------------|--------------|----------|----------|----------|
| System 360 DOS/TOS Facilities | 6.975 | 3 | 0 | 3 |
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All aspects of disk and tape operating systems are instructed.

Prerequisite: Computer Center Operations 6.952.

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|-------------------------------|--------------|----------|----------|----------|
| Technical Illustration | 4.228 | 0 | 8 | 3 |
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This course will cover the various methods of pictorial drawing. Exploded view drawings will be stressed and pencil and ink shading will be used. Both free-hand and template drawing will be covered.

Prerequisite: Second year standing.

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|-------------------------------|--------------|----------|----------|----------|
| Technical Illustration | 4.229 | 0 | 5 | 2 |
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This course is a continuation of Technical Illustration. The illustration of more complex equipment along with color rendering will be covered in this course. The use of colored pencil, pastel and air brush will be applied to a variety of illustrations.

Prerequisite: Technical Illustration 4.228.

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|------------------------------|--------------|----------|----------|----------|
| Television Principles | 4.266 | 3 | 0 | 3 |
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An introduction to the principles of television theory and circuits. A study of underlying principles of television transmission, the make-up of the television signal, and the receiver circuits. Each receiver circuit is individually analyzed as to the principle of operation and possible trouble causes.

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| Television Principles Lab. | 4.267 | 0 | 8 | 3 |
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A laboratory course applying 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 will be used to demonstrate signal origination.

| | | Lec. | Lab. | Term Units |
|-----------------------------|--------------|----------|----------|---------------|
| 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 procedure and case histories are studied. The theory of color TV and its allied circuits and the adjustments of the color receiver are studied.

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|----------------------------------|--------------|----------|----------|----------|
| Television Servicing Lab. | 4,269 | 0 | 8 | 3 |
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Circuits of the television receivers are analyzed, both within the receivers and with the use of bread boards. Some of the bread board models will be 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.

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|--|--------------|----------|----------|----------|
| The Business of Being a Homemaker | 7,100 | 2 | 2 | 3 |
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This course is designed to assist 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; selection and care of clothing and equipment in the home.

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|--------------------------------------|--------------|----------|----------|----------|
| Timber and Steel Construction | 6,125 | 3 | 3 | 4 |
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A study of steel and wood fasteners and connections, timber beams and columns. Structural members will be analyzed for design features. Field trips will be used to visualize application. Laboratory time will be used for testing.

Prerequisite: Structural Analysis and Design 6.130 or equivalent.

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|--|--------------|----------|----------|----------|
| Tool and Fixture Design and Application | 4,847 | 2 | 4 | 3 |
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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 applications. Class time is devoted to design theory with laboratory time spent on design of special fixtures for production runs.

Prerequisites: Advanced Lathe Practices 4.833, Advanced Milling Machine Practices 4.837, Metal Fabrication and Finishing 4.174.

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|----------------------------|--------------|----------|----------|----------|
| Tools and Equipment | 3,605 | 1 | 2 | 2 |
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This course covers principles relating to the proper use of hand tools and power tools; sharpening edged tools; first aid and safety in the woods. Hand tools studied will include hammers, saws, files, planes, brace and bit, square, wrenches, axes, pulaskis, hazel hoes, shovels, and pack pumps. Power tools include drills, chain saws, portable fire pumps and brush cutting "disc-type" saws.

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|---------------------------------------|--------------|----------|----------|----------|
| Topographic Map Interpretation | 4,130 | 2 | 2 | 3 |
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A study to acquaint the student with 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 head.

| | | Lec. | Lab. | Term Units |
|---------------------------|--------------|----------|----------|---------------|
| Traffic and Patrol | 5.210 | 3 | 6 | 5 |

On the subject of traffic this course teaches the methods of movement of traffic with safety by means of public education, enforcement and engineering. Also, in this course 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.

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| Transistors and Circuits Theory | 4.259 | 3 | 6 | 5 |
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This course is to consist 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 the theories and materials covered in the theory section of the course.

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| Tree Identification | 3.610 | 1 | 2 | 2 |
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This course presents a review of basic botany necessary for tree identification including taxonomy, flower and plant parts with emphasis on fruit, bark and twig characteristics. This first course deals with the common commercial coniferous species of the Pacific Northwest with emphasis on those species native to Oregon.

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|----------------------------|--------------|----------|----------|----------|
| Tree Identification | 3.611 | 1 | 2 | 2 |
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This is a continuation of Trees Identification 3.610 with the emphasis on the native hardwoods of Oregon. The common forest shrubs are included in this course.

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|--------------------------|--------------|----------|----------|----------|
| Trends in Nursing | 5.523 | 2 | 0 | 2 |
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This course provides the student with additional information as to her role and responsibility as a graduate practical nurse emphasizing such areas as interpersonal relationships, communications, legal aspects, code of ethics, nursing organization, and career opportunities.

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|-----------------------------------|--------------|----------|----------|----------|
| Tungsten Inert Gas Welding | 4.247 | 1 | 3 | 2 |
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A course designed to develop a familiarity and basic skills in "helarc" welding, covering the equipment, materials and principles involved in their use. It includes demonstrations and supervised practice on mild steel, aluminum and stainless steel using standard industrial equipment and materials.

Prerequisites: Basic Oxy-acetylene Welding 4.242 or Welding 4.150 or approval of department head.

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| Typing | 2.606 | 1 | 4 | 3 |
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This is a beginning course in typing for those with no previous typing instruction or a minimum of typing instruction. It covers the parts and construction of the more common makes of typewriters, learning of the keyboard, the basic techniques of the touch system. The student should develop rhythm in his movements and attain a typing speed of at least 20 words per minute.

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| Typing | 2.607 | 1 | 4 | 3 |
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This is a continuation of typing with emphasis on increasing the typing speed to at least 30 words per minute while mastering various forms of business communications.

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| Typing | 2.608 | 1 | 4 | 3 |
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A course including corrective and acceleration drills to develop a minimum typing speed of 40 words per minute. The student will receive, in addition, training in the various business papers encountered in a business office.

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|----------|---------------|
| Typing | 2.633 | 1 | 4 | 3 |
| This is a beginning course in 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, 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. Provision will be made for those students having previous typing training to build up their speed and accuracy as well as review composition arrangements. | | | | |
| Typing | 2.634 | 1 | 4 | 3 |
| This is a continuation of Typing 2.633 with emphasis on increasing speed and accuracy. The student will also receive training in the various business papers encountered in a business office. | | | | |
| Use of Instruments | 4.260 | 2 | 0 | 2 |
| The 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 will be discussed and demonstrated. The materials of the course will closely follow the needs of the servicing courses and applications may be made in the service labs. | | | | |
| Use of Instruments | 4.261 | 2 | 0 | 2 |
| A continuation of the Use of Instruments with more advanced instruments and methods. | | | | |
| Utility and Sort Programs | 6.965 | 2 | 2 | 3 |
| Disk operating system utility programs, sort/merge and programming support utilities are instructed. | | | | |
| Prerequisite: Computing Systems and Job Control 6.949. | | | | |
| Vacuum Tube and Transistor Analysis | 6.223 | 3 | 3 | 4 |
| An introductory course to the analysis of the electrical characteristics of vacuum tubes and transistors. Includes a review of electron physics with emphasis on electron emission and fundamental transistor theory. Covers two element electron devices including hot and cold-cathode vacuum and gas diodes and semi-conductor diodes; three element vacuum tubes and transistors; multi-grid tubes including tetrodes, pentodes, and beam-power tubes; special transistors and diodes. Includes a review of auxiliary electronic components including potentiometers, transformers, and relays, and a review of several electronic circuits involving series and parallel resonance, bandwidth and coupled-circuit theory. Also covers elementary filter design, harmonic analysis, network theorems, and four-terminal networks. | | | | |
| Prerequisite: Electrical Theory DC 6.200, Technical Mathematics 6.261, or approval of department head. | | | | |
| Vacuum Tubes and Circuits Lab. | 4.258 | 0 | 6 | 2 |
| This course consists of: The 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 bread board building of the amplifiers, power supplies and oscillator circuits studied in the theory classes. | | | | |

| | | Lec. | Lab. | Term Units |
|----------------------------------|--------------|----------|----------|---------------|
| Vacuum Tubes and Circuits | | | | |
| Theory | 4.257 | 6 | 0 | 6 |

The 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 characteristics 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 will be taught as part of the course.

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|-----------------------------------|--------------|----------|----------|----------|
| Water Distribution Systems | 5.107 | 3 | 0 | 3 |
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Main systems: hydrants—size, gridding, distribution; residential and commercial districts; fire flow requirements; pumping stations; high pressure systems; storage tanks and cisterns; mobile supplies.

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| Wave Generation and Shaping | 6.234 | 2 | 3 | 3 |
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A class and laboratory course designed as an 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 the 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. Also covers blocking oscillators of several types, their principle of operation, and application.

Prerequisite: Fourth term standing or approval of department head.

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| Weld Shop Problems | 4.249 | 3 | 9 | 5 |
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This course is designed to be 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.

Prerequisites: 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 head.

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|----------------|--------------|----------|----------|----------|
| Welding | 4.150 | 1 | 3 | 2 |
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An introductory survey course in welding technology correlating technical information with actual practice to provide the student with 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 non-ferrous metals and their alloys.

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|----------------------------------|--------------|----------|----------|----------|
| Welding for Certification | 4.166 | 2 | 6 | 4 |
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This course is designed to turn out 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.

| | | Lec. | Lab. | Term Units |
|---|--------------|----------|----------|---------------|
| Welding for Production and Economy | 4.165 | 2 | 2 | 3 |

A study and practice of production welding methods, electrode consumption, method selection. Adaption of jigs and fixtures to the weld process.

Prerequisites: Sixth Term standing and completion of basic and advanced welding courses.

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|--------------------------------|--------------|----------|----------|----------|
| Wood Industry Economics | 4.286 | 3 | 0 | 3 |
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A course designed to acquaint the student with the position of the wood industry in the economics structure; factors involved and production costs, marketing and sales.

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| Wood Preservation and Finishing | 6.282 | 2 | 3 | 3 |
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This course is designed to acquaint the student with the problems and control of wood-destroying agencies; the kind of preservatives and their application; the methods of prefinishing forest products.

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|--------------------------------|--------------|----------|----------|----------|
| Wood Products Marketing | 3.614 | 2 | 3 | 3 |
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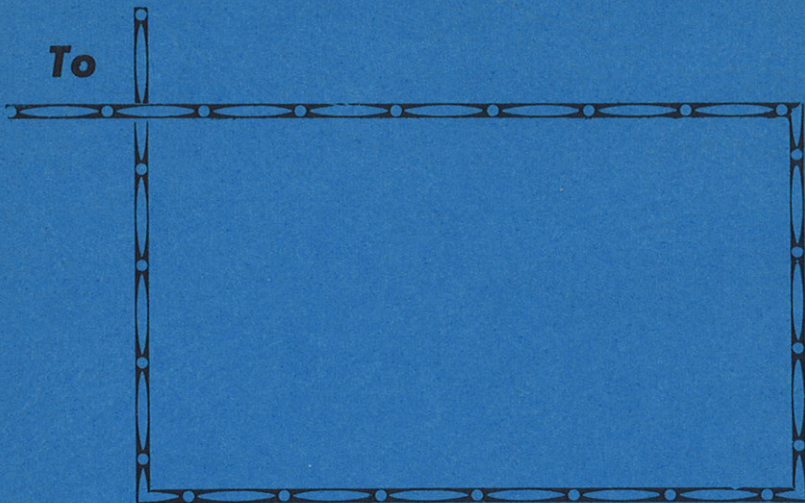
This course is designed to acquaint the student with all aspects of Wood Products marketing from the producer to the consumer taking in to consideration the relationships of quality control, traffic, wholesaling, retailing, financing, ordering, and merchandising.

Prerequisite: Quality Control in Wood Products 6.287.

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|--|--------------|----------|----------|----------|
| Wood Structure and Identification | 6.280 | 1 | 6 | 3 |
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This course covers the basic wood structure and the gross features of wood and is designed to provide the student with the ability to identify the common species of the softwoods and hardwoods in the form of solid wood and wood fiber.

To



4389 SATTER DRIVE N. E., SALEM, OREGON 97303

