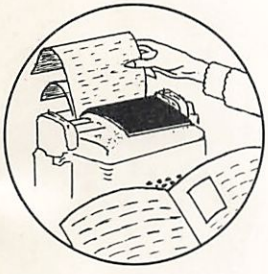
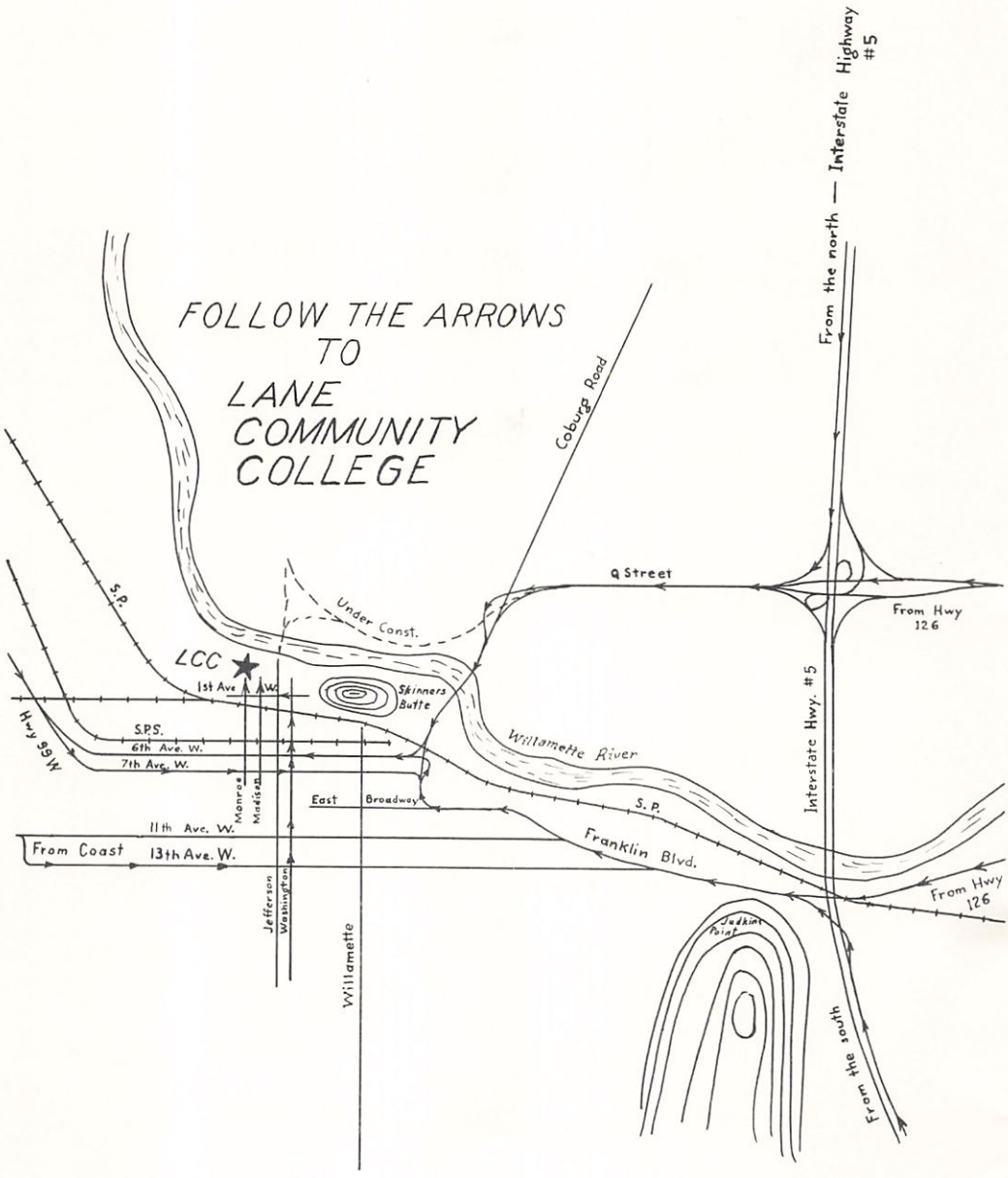
LANE COMMUNITY COLLEGE



CATALOG 1965-1966

200 N. MONROE STREET EUGENE, OREGON 97402



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Eugene School District No. 4, Eugene, Oregon

LANE COMMUNITY COLLEGE

1965-66 CATALOG

"The open door to careers and personal improvement"

200 N. MONROE
EUGENE, OREGON

NUMBER 1

APRIL, 1965

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1965-1966 SCHOOL CALENDAR

SUMMER TERM

*Registration and classes begin for Practical Nursing . Mon., July 5

FALL TERM—1965-1966

*Registration	Mon., Sept. 20, through Fri., Sept. 24
Classes begin	Mon., Sept. ~~24~~ 27
Last day to register	Fri., Oct. 8
Last day to withdraw from courses	Fri., Oct. 22
Veterans Day Holiday	Thurs., Nov. 11
Thanksgiving vacation	Thur., Fri., Nov. 25, 26
Fall term examinations	Dec. 13 - 17

WINTER TERM—1965-1966

*Registration	Mon., Jan. 3
Classes begin	Tues., Jan. 4
Last day to register	Fri., Jan. 21
Last day to withdraw from courses	Fri., Jan. 28
Winter term examinations	Mar. 14 - 18

SPRING TERM—1965-1966

*Registration	Mon., Mar. 28
Classes begin	Tues., Mar. 29
Last day to register	Fri., Apr. 8
Last day to withdraw from courses	Fri., Apr. 15
Memorial Day Holiday	Mon., May 30
Spring term examinations	June 6 - 10

*Registration for short term courses and some adult evening courses will be at other times. Dates will be given by newspaper, bulletin, radio, and television.

ADMINISTRATION

BOARD OF DIRECTORS
COMMUNITY COLLEGE

Mr. William Bristow Jr. (Zone 5) Chairman

Dr. Clifford Matson (Zone 2) Vice Chairman

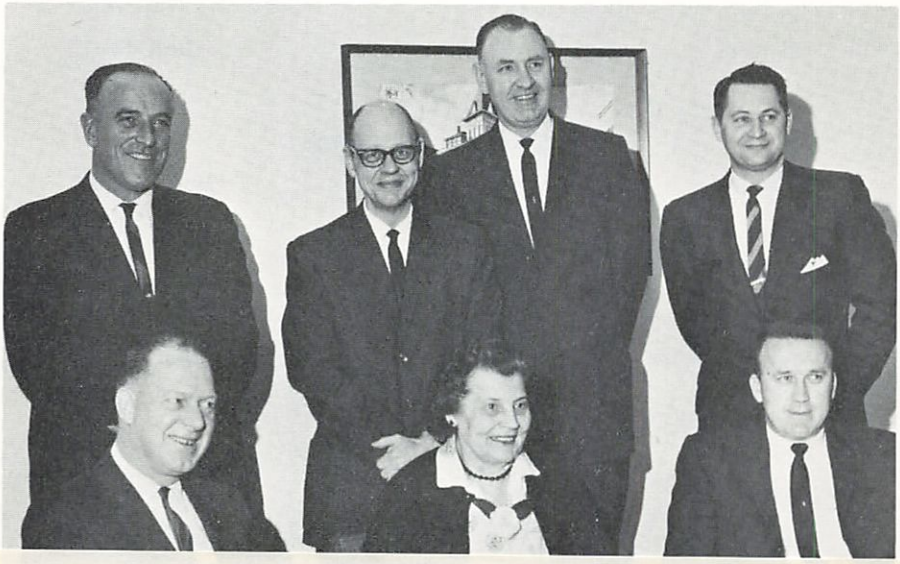
Dr. Albert Brauer (Zone 1)

Mrs. Olga Freeman (at large)

Mr. Kenneth Schmidt (Zone 3)

Mr. Lyle Swetland (at large)

Dr. Dean Webb (Zone 4)



Standing: L to R—Mr. Kenneth Schmidt, Mr. William Bristow Jr., Dr. Clifford Matson, Dr. Albert Brauer. Seated: L to R—Mr. Lyle Swetland, Mrs. Olga Freeman, Dr. Dean Webb

Operated in cooperation with Oregon State Department of Education

Leon P. Minear — Superintendent

Robert O. Hatton — Asst. Superintendent (Community Colleges)

William G. Loomis — Director (Vocational Education)

General Information

Organization and Development:

Lane County Community College was voted into existence October 19, 1964 by voters of Lane County and Harrisburg Union High School District, and Monroe Elementary District. The college begins operating as a legally constituted tax supported institution on July 1, 1965.

The EUGENE VOCATIONAL SCHOOL, which was organized in 1938 and later became known as the EUGENE TECHNICAL-VOCATIONAL SCHOOL, has become an integral part of the Lane Community College. The Eugene School District facilities are being leased and will be used for the technical-vocational programs until a new campus is developed.

The Lane Community College is organized in accordance with the provisions of the Oregon Community College Act, Chapter 602, Oregon Laws.

Purpose of Lane Community College:

1. Counseling and guidance in vocational and educational planning.
2. Occupational education for preparation for employment in technical and vocational fields.
3. General education for personal growth, enrichment and advancement.
4. Adult evening courses to provide for job improvement, personal growth, apprentice related instruction and general information.
5. Liberal arts and pre-professional lower division collegiate education for transfer to higher institutions offering baccalaureate degrees.

ADMINISTRATION

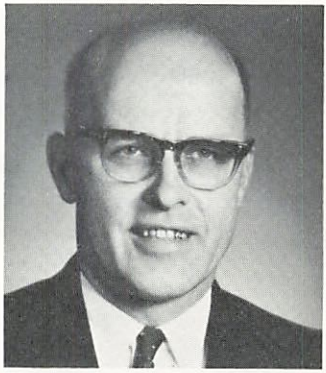
PRESIDENT
DR. DALE PARNELL

ADMINISTRATIVE ASSISTANT
TO THE PRESIDENT
BERT J. DOTSON

DEAN OF STUDENTS
I. S. HAKANSON

DEAN OF INSTRUCTION AND
ADMINISTRATIVE SERVICES
W. W. COX

DEAN OF ADULT EXTENSION
C. S. OBITZ



ADMINISTRATIVE ASSISTANT
G. R. BLOOMQUIST

LANE COMMUNITY COLLEGE FACULTY

BELL, ARCHIE A., Automotive Mechanics — Oregon Vocational Certificate

BLOOD, CARL A., Drafting Instructor —B.S., M.Ed., Oregon State University

BLOOMQUIST, GILBERT R., Administrative Assistant — B.S., University of Oregon; M.Ed., State University

COX, W. W., Dean of Instruction and Administrative Services—AB., M.A., Colorado State College of Education

CROCKER, C. N., Machine Shop Instructor—Oregon Vocational Certificate

DOTSON, BERT J., Administrative Assistant to the president—B.S., M. Ed., University of Oregon

GASKILL, MELVIN C., Head Instructor, Aircraft Mechanics—Oregon Vocational Certificate, Curtiss Wright Technical Institute of Aeronautics; F.A.A. certified A & P Mechanics, parachute rigger, and ground school instructor

GOLDSMITH, ELLENE M., Head Instructor, Practical Nursing — B.S., Univ. of Minn., M.S., Health Education, Univ. of Oregon

GRANT, PATRICK, Major and Small Appliance Repair Instructor — Oregon Vocational Certificate

HAKANSON, I. S., Dean of Students— B.A., Linfield College, M.Ed., Oregon State University

HOUGLUM, ROGER J., Manager and Chief Engineer of Educational Radio Station KRVM—B.S., M.Ed., University of Oregon (FCC Radiotelephone First Class License)

LEMKE, CARL R., Aircraft Mechanics Instructor—Oregon Vocational Certificate, F.A.A. certified A & P Mechanic, F.A.A. Mechanics Examiner, and ground school instructor

LUCK, GEORGE, Body and Fender Repair Instructor — Oregon Vocational Certificate

MARSHALL, ROBERT A., Supervisor M.D.T.A.,—B.S., M.Ed., Pennsylvania State University

MAST, GEORGE L., Diesel Mechanics Instructor—Oregon Vocational Certificate

McCARROLL, DARWIN, Radio-Television Repair Instructor — Oregon Vocational Certificate, FCC Radiotelephone First Class License

MERRILL, O. J., Civil & Structural Engineering Instructor—Oregon Vocational Certificate

OBITZ, CLARENCE S., Dean of Adult Extension—B.S., M.S., Bucknell University

PARKER, PHILIP, Civil & Structural Engineering Technician Instructor —B.S., Missouri School of Mines & Technology

PARNELL, DALE P., President—B.A., Willamette University, M.Ed., D.Ed., University of Oregon

PARRO, EUGENE Z., Carpentry & Cabinetmaking Instructor—Oregon Vocational Certificate

PHILLIPS, JOHN M., Forestry Instructor—B.S., Forestry, University of California

PRUETT, HERBERT, related subjects —B.E. in Trade and Industrial education, Oregon State University

RUSHING, ROY D., Welding Instructor—Oregon Vocational Certificate

SCALES, JACK D., Physics Instructor —Associate Degree, Electrical Technology; B.S., Technical Ed., Oklahoma State University

THYGESEN, RUTH, Business Education Instructor—Oregon Vocational and Adult Education Certificate

TRIPPETT, LEE, Electronics Engineering Technician Instructor—B.S., Physics, University of Oregon

WAGNER, DELMAR, Mathematics Instructor—B.A., Walla Walla College, Washington

Additional college transfer and technical vocational instructors will be selected.

ADMISSION AND REGISTRATION

Regular Students:

Students who wish to enter the Lane Community College must be high school graduates, or at least 18 years of age, and, in the judgment of the administrator of the college, capable of profiting from the instruction offered.

Applicants for enrollment in Electronic Technology and Civil Engineering Technology must be high school graduates, or the equivalent, and will be required to pass a special entrance examination.

Applicants must submit a written application together with a transcript of their high school record or other education prior to acceptance. Entrance testing may be required after a review of the applicant's transcript. If the applicant has taken the College Board entrance examination, the score should be sent to the registrar.

Part-Time Students:

Students wishing to enroll for the pre-employment program of study on a part-time basis will be considered on an individual basis. The courses involved, the capacity of the classes and the outside employment of the student will be the determining factors in such cases.

Transfer Students:

Applicants transferring from other post-high school educational institutions must present a transcript of courses completed if credit is requested. Transfer courses will be considered individually if applicable to a curriculum. If the course is similar to a course required, but not identical, petition may be made to take an examination to allow credit. Credit for course by examination will be considered only after applicant has enrolled.

Auditors:

Students regularly enrolled may request admittance to a class as an auditor. Auditors will be accepted only if space is available in the class.

TUITION AND FEES FOR PRE-EMPLOYMENT AND LIBERAL ARTS PROGRAMS

In District Tuition:

Full time student: (11 units or more) ..... $55.00 per term
If more than 50 miles from school ..... 25.00 per term
40 to 50 miles from school ..... 30.00 per term
30 to 40 miles from school ..... 40.00 per term
Part time student: $6.00 per unit per term up to and including 10 units.

Out of District Tuition, but in state:

Full time student ..... $110.00 per term
Part time student ..... $12.00 per unit, per term

Out of State Tuition

Full time student ..... $200.00 per term

Fees:

Radio Communications, Auto Body & Fender, or Diesel ..... $10.00 per term
Welding (Related Course) ..... 10.00 per term

ADULT EVENING PROGRAMS:

Apprentice Courses ..... 54 clock hours—$12.00
State approved adult courses ..... 30 clock hours— 12.00
Self improvement courses ..... 30 clock hours— 20.00
Driver Education ..... $47.00 per course
High School completion courses ..... 30 clock hours—$12.00 per course

Textbooks may be purchased at the school. Costs will vary from $5.00 to $10.00 per course. Cost of books will average $50.00 to $75.00 per year, for full time students. A minimum basic tool kit will be required in the mechanic programs.

Residence:

A minor student whose parents are bona fide residents of Lane County, or Monroe elementary or Harrisburg school districts, Oregon, qualifies for enrollment under the resident fee; a student whose residence is independent of his parents qualifies for enrollment under the resident fee if he presents evidence that he established his residence in Lane Community College district three months prior to his first registration.

All other students are required to pay the non-resident fee.

Course Changes:

Students who want to make course changes after registration must clear with their major advisor and the Registrar's office.

Withdrawal:

Withdrawal from a course or a curriculum must be cleared with the Registrar. A (**W**) is entered on the record if withdrawal is made before the fifth week.

A withdrawal after the fifth week will be recorded as an incomplete (**I**). Arrangements must be made to clear the incimplete before the next school year, or it automatically becomes a failure (**F**).

Refunds of tuition and fees:

One week or less .....three-fourths
Second week .....one-half
Third, fourth and fifth week .....one-fourth
No fees refunded when credit load reduced.

Evening and short unit courses:

No refunds after second class session.

GRADUATION REQUIREMENTS

Diplomas:

Diplomas will be issued to persons completing a curriculum according to the standards of the school.

Terminology:

A **term unit** is earned by attendance in a theory class for one hour a week for a term. Approximately 3 laboratory or shop hours a week for a term will represent one term unit.

A **pre-employment curriculum** includes a group of planned courses which prepare the students to enter employment in a specific field.

Grading System:

A. Exceptional, 4 points; B. above average, 3 points; C. Average, 2 points; D. Below Average, 1 point; F. Failure, 0 points; Inc. Incomplete; W. Withdrawn.

Probation:

A student falling below a 2.0 grade point average will be placed on probation. A student placed on probation two successive terms will be dropped from the program he is taking. He may reapply for another curriculum on approval of the departmental dean.

STUDENT SERVICES

Counseling and Guidance:

Interested applicants who are undecided regarding a career objective, will be given vocational guidance services without charge. Aptitude testing will be arranged where needed. Entrance tests are given for curriculums requiring specific course background and educational achievement.

Applications for admission, school transcripts, and work experience are reviewed to determine suitability of the selected training objective.

Guidance is provided for course planning. Assistance is given by a major advisor throughout the education and training period.

Housing:

Students are assisted in locating housing while attending school. Listings of available rooms, apartments and houses are maintained in the school.

The school does not inspect or certify housing listed with the school. The student should make his own inspection to determine acceptability.

Part-Time Employment:

Students desiring part-time employment while attending school are assisted in locating employment. Placement is also provided by the Oregon State Employment Service by reference from the school.

Grant-in-Aid and Loans:

Students who have been enrolled at the Lane Community College and are doing satisfactory work may apply for assistance in securing a loan or financial help for school cost financing. A few limited scholarships are available to selected students on application.

Placement:

Graduates of the Technical-Vocational division of Lane Community College will be assisted in locating employment. Requested information and records are provided prospective employers. Contact is maintained with business and industry through advisory committees and the personal contact of instructors who constantly keep in touch with business and industry for placement opportunities.

Placement assistance is also made available to graduates who have been employed since graduating and desire a change of employment.

Student Activities:

A student council made up of representatives from each department functions to plan and encourage student activities. Projects for raising funds for student services and functions are promoted by the student council.

Food Service:

Food and refreshments are available at the student lounge. Sandwiches, soups, beverages and candy are dispensed by coin machines.

OCCUPATIONAL PREPARATORY PROGRAMS

A variety of education and training programs are offered to prepare a person for employment in an occupation after graduation.

The programs, as described in the following pages, have been approved by the Oregon State Department of Education, Division of Community Colleges.

AIRFRAME AND POWERPLANT MECHANICS

Training given through this program prepares a person for employment as a line mechanic or service mechanic. Opportunities for employment in this field are expanding for the person who can qualify for the Federal Aviation Agency certificate.

The exacting nature of the courses are such that only applicants who have mechanical aptitude and who have completed high school, or the equivalent may be admitted to this curriculum.

POWERPLANT MECHANICS

(Offered 1965-1966)

The F.A.A. approved Powerplant curriculum provides the practical training, theory and technical information required to take the F.A.A. examination for "Powerplant" mechanic.

	FALL		WINTER		SPRING	
	hrs/wk	units	hrs/wk	units	hrs/wk	units
Aircraft Powerplant I, II, III	10	10	5	5	5	5
Air. Powerplant Lab. I, II, III	10	3	20	7	19	6
Practical Physics I	5	4				
Communication Skills I or II					3	3
Drafting I or II			4	2		
*Applied Economics	3	3				
*Health					2	2
	28	20	29	14	29	16

(Schedule Math. II (4.202) in place of Applied Economics if not previously completed.)

AIRFRAME MECHANICS

(Offered 1966-1967)

The F.A.A. approved Airframe curriculum provides the practical training, theory and technical information required to take the F.A.A. examination for "Airframe" mechanic.

	FALL		WINTER		SPRING	
	hrs/wk	units	hrs/wk	units	hrs/wk	units
Airframe I, II, III	5	5	5	5	5	5
Airframe Lab. I, II, III	15	5	19	6	10	3
Mathematics II, III	3	3	3	3		
Drafting I or II	4	2				
*Communications Skills I or II			3	3		
Welding IA					5	2
Electrical Drafting					4	2
Practical Physics III					5	4
	27	15	30	17	29	16

(Schedule Applied Economics in place of Math. II, if Math. II is completed.)

*Not an F.A.A. requirement.

POWERPLANT MECHANICS, MAJOR COURSE DESCRIPTIONS

AIRCRAFT POWERPLANT I 3.226E (10 class hrs/wk) Term Units 10

AIRCRAFT POWERPLANT I LAB. 3.227E (10 lab. hrs/wk) Term Units 3

Powerplant Electrical

This course provides practical application to electrical theory. Work is performed with parallel and series direct current circuits, relays, solenoids, circuit breakers, motors, inverters, dynamotors, aircraft wiring circuits, making harnesses, checking landing gear retraction, flap operation, landing lights, electrical recording gauges and instruments and use of test equipment. F.A.A. requirements and regulations covering aircraft electrical systems.

Magnetos and Ignition

This course covers disassembly, inspection, re-assembly and installation of different makes and models of magnetos currently in use. Battery ignition, ignition switches, shielding, spark plugs, internal timing, timing to engine, synchronizing, test bench inspection, wiring harness inspection and leakage testing. Related theory of magnetic design and theory covered.

Starters and Generators

Disassembly inspection and installation of aircraft starters. Hand inertia, electric inertia, direct electric and direct hand cranking, solenoid controls. Instruction in design, gear ratios, epicyclic gear trains, safety precautions, electrical circuits, and starter switches.

Machine Operation

Demonstration and application of machine tool operations including thread cutting lathe, milling machine, surface grinder, band saws, shaper, drill presses, hones, making bushings, repair operation.

Lubrication Powerplant

Theory of lubrication, history of lubricants, requirements, tests, types of engine lubrication systems, pumps relief valves, oil coolers, oil dilution, hopper tanks, F.A.A. oil system requirements.

Powerplant Basic

Elementary shop math, theory of flight, nomenclature of aircraft, its components and appliances, weight and balance including its effect on stability and performance.

AIRCRAFT POWERPLANT II 3.228E (5 class hrs/wk) Term Units 5

AIRCRAFT POWERPLANT II LAB. 3.229E (20 lab. hrs/wk) Term Units 7

Propellers

This course provides instruction and practice in disassembly, inspection reassembly and installation of different makes of propellers currently in use. Understanding of hydraulic, electric and mechanical controllable propellers along with fixed pitch metal and wood propellers. Balancing and refinishing. Instruction in theory of propellers, effective pitch, geometric pitch, slippage, blade element theory, de-icing and anti-icing.

Carburetion

Lab. work in disassembly, inspection and assembly of carburetors in use today, float type, pressure injection types and direct injection systems. Float level checks, back suction systems, economizers. Instruction in principles of carburetion, fuel mixture ratios, lean best power, rich best power, induction systems, superchargers, internal blowers, turbo chargers, controls for superchargers.

Engine Overhaul I

Class hours cover engine principles, heat engines, two stroke and four stroke cycle, thermal efficiency in converting heat energy to mechanical energy, piston displacement compression ratio, horsepower formula, indicated horsepower, brake horsepower, friction horsepower, types of engines, cooling and lubrication. Propeller shafts, gear reduction systems, nose case and lower section, cam operation systems, pushrods, valves, rockers, valve springs, cylinders, pistons, rings, connecting rods, bearings, accessory gear trains, blowers, induction system piping, exhaust systems, inter-coolers, after-coolers, F.A.A. regulations for powerplant certification. Instruction and practice in engine disassembly, measuring equipment, micrometers, dial indicators, manufacturing manuals, torque tables, tables of fits, cleaning and inspections, magna-flux, magnaglo, syglo, dy-check, valve systems, cam rings, cam shafts, hydraulic lifters, internal timing, external timing, ignition timing, vernier couplings, assembly procedures, crankshaft runout checks, accessory installations, refacing valves, reseating valves, fitting piston rings, torque wrench use, spark plug installation, wiring harness installation, safetying bolts, studs, etc., installing engine on mount, electrical system installation, propeller installation, propeller governor installation, oiling systems, fuel systems, engine starting and stopping procedure, practice in hand propping, engine check out, trouble shooting, periodic inspection, F.A.A. forms.
Prerequisite: Aircraft Powerplant I and Lab.

AIRCRAFT POWERPLANT III 3.230E (5 class hrs/wk) Term Units 5

AIRCRAFT POWERPLANT III LAB. 3.231E (15 lab hrs/wk) Term Units 6

Engine Overhaul II

This course is continuation of Engine Overhaul I.

Jet Operation

Principles of jet thrust, Brayton cycle, centrifugal blowers, axial blowers, turbo jets, turbo props, turbo shaft, bypass jet, aft fan jet, thrust injectors, sound suppressors, thrust reversers, afterburners, fuel control, oiling systems, accessory systems, air starters, cartridge starters, electric starters, constant speed drives, safety in jet handling, engine trimming, power settings, partial engine disassembly, run tests.

Fuel Systems

Fuel flow requirements, vane pumps, wobble pumps, booster pumps, strainers, bypass systems, selector valves, tank arrangements, tank tests, fuels, manufacture tests, octane ratings, performance numbers..
Prerequisite: Aircraft Powerplant II and Lab.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

AIRFRAME MECHANICS, MAJOR COURSE DESCRIPTIONS

AIRFRAME I 3.220E (5 class hrs/wk) Term Units 5

AIRFRAME I LAB. 3.221E (15 lab. hrs/wk) Term Units 5

Woodwork

F.A.A. requirements for wood repairs, spar splices, rib repairs, plywood skin splices, jig building, tramming, wood types and properties, glues and gluing, woodworking tools, woodworking machines, safety in using tools and machines, repairing certificated aircraft asemblies.

Fabric and Dope

Aircraft fabric grades and specifications, aircraft linen, fiber glass cloth, synthetic fibers, F.A.A. repair procedures and limitations, machine-sewed seams, hand sewing, rib stitching. aircraft dopes, brush application, spray-gun operation, covers, refinishing completed aircraft, airfoil layout.

Hydraulics

Hydraulics tubing and fittings, flaring tubing, disassembly and inspection of pumps, regulators, actuators, valves, accumulators, brake servicing and adjusting, shock strut disassembly and inspection, retracting gear mechanisms, complete system study, auto pilot systems, de-icing systems, pneumatic systems, fuel systems.

AIRFRAME II 3.222E (5 class hrs/wk) Term Units 5

AIRFRAME II LAB. 3.223E (19 lab. hrs/wk) Term Units 6

Aircraft Sheet Metal

Hand forming, bending, brake, hand riveting, gun riveting, squeeze riveting, repair of stressed skins, soldering stainless steel, sheet metal working tools, templates, layout work, bend allowance, set back, heat treating, annealing, properties of metals, F.A.A. approved procedures.

Theory of Flight

History of aviation, nomenclature, fundamentals of aerodynamics, aircraft designs, aircraft components, airfoils, airfoil numbers, airfoil development charts, weight and balance, F.A.A. requirements for weight control, weight and balance graphs, weighing live aircraft for airworthiness certification.

Prerequisite: Airframe I and Lab. I

AIRFRAME III 3.224E (5 class hrs/wk) Term Units 5

AIRFRAME III LAB. 3.225E (10 lab. hrs/wk) Term Units 3

Aircraft Electrical

Direct current, circuits, series circuits, parallell circuits, relays, solenoid switches, batteries, battery chargers, landing lights, landing gear indicator systems, navigation lights, electrical motors and generators, alternating current, voltmeters, ohm-meters, ammeters, condensers, capacitance, wiring terminals, wiring harness, F.A.A. requirements for aircraft electrical systems, aircraft instruments.

Assembly and Rigging

Alignment, setting dihedral, incidence, stagger, wash in, wash out, landing gear alignment, rigging monoplane, rigging biplane, incidence board, protractors, aircraft identification, certification requirements, categories.

Weight and Balance

Continuation of study started during theory of flight. Advanced weight control problems. Weighing live aircraft for airworthiness certification.

Prerequisite: Airframe II and Lab. II

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Appliance Repair, Major Appliances

(2 Year Program)

Education and training for employment in the field of Appliance Repair are provided in two separate training program options. Because of the ever-increasing number and types of automatic appliances being produced, specialization in repair is given either in major or small appliances. A complete program of class instruction in theory and fundamental principles, with shop practice and related class instruction, is provided in both options.

Training for Major Appliance Repair is provided in preparation for work on appliances such as automatic washers, dishwashers, dryers, hot water heaters, water pumps, electric stoves and small electric motors.

Opportunity for employment in the Appliance Repair field upon completion of training is available with appliance retail or wholesale service departments, or general appliance repair shops. Successful completion of school courses and work experience can lead to positions such as service manager or ownership or management of an appliance repair business.

	FALL		WINTER		SPRING	
FIRST YEAR	hrs/wk	units	hrs/wk	units	hrs/wk	units
Major Appl. Rep. I, II, III	5	5	3	3	3	3
Major Appl. Rep. I, II, III Lab.	10	3	12	4	12	4
Mathematics II, III	3	3	3	3		
Machine Shop Orientation	5	3				
Machine Tool Operation			5	3		
Machine Shop Projects					5	3
Electrical Theory	5	4	5	4		
Applied Economics					3	3
Employer-Employee Relations					2	2
	28	18	28	17	25	15
SECOND YEAR						
Adv. Major Appl. Rep. I, II, III	3	3	3	3	3	3
Adv. Major Appl. Rep. I, II, III Lab.	12	4	12	4	12	4
Practical Physics I, II	5	4	5	4		
Welding IA	5	2				
Electrical Drafting	4	2				
Communication Skills I, II			3	3	3	3
Salesmanship			3	3		
Business Records & Reports					3	3
Psychology of Human Relations					3	3
Health					2	2
	29	15	26	17	26	18

MAJOR APPLIANCE REPAIR, MAJOR COURSE DESCRIPTIONS

INTRO. TO MAJOR APPL. REP. I 3.200E (5 class hrs/wk) Term Units 5

INTRO. TO MAJ. APP. REP. I LAB. 3.201E (10 lab. hrs/wk) Term Units 3

Instruction and use and care of shop and machine tools. Instruction in electrical components and electrical instruments. Motor operating principles and motor repairs will be presented. Introduction to repair manuals, order books, materials and repair supplies.

MAJOR APPLIANCE REPAIR II 3.202E (3 class hrs/wk) Term Units 3

MAJOR APPL. REP. II LAB. 3.203E (12 lab. hrs/wk) Term Units 4

Study and instruction on automatic washers. This will include information on electrical components and mechanical parts, testing and trouble-shooting. Study of automatic dryers with their electrical components and mechanical parts. Instruction in the repair of conventional washers, testing and trouble-shooting of clothes dryers.
Prerequisite: Introduction to Major Appliance Repair I.

MAJOR APPLIANCE REPAIR III 3.204E (3 class hrs/wk) Term Units 3

MAJOR APPL. REP. III LAB. 3.205E (12 lab. hrs/wk) Term Units 4

Study and instruction on automatic hot water heaters and stoves. Instruction on elements, thermostats, wiring, timing devices, circuits and component parts, including testing, trouble-shooting and repair.
Prerequisite: Major Appliance Repair II.

ADV. MAJOR APPL. REPAIR I 3.206E (3 class hrs/wk) Term Units 3

ADV. MAJOR APPL. REP. I LAB. 3.207E (12 lab. hrs/wk) Term Units

Instruction on shop repairs, automatic washers, dryers and electric stoves. Instruction on the operating principles and major causes of trouble and repairs for disposals and their component parts.
Prerequisite: Major Appliance Repair III.

ADV. MAJOR APPL. REPAIR II 3.208E (3 class hrs/wk) Term Units 3

ADV. MAJOR APPL. REP. II LAB. 3.209E (12 lab. hrs/wk) Term Units 4

Instruction in trouble-shooting and repair of electric motors, pumps, testing washers, disposals, automatic washers and dryers.
Prerequisite: Advanced Major Appliance Repair I.

ADV. MAJOR APPL. REPAIR III 3.210E (3 class hrs/wk) Term Units 3

ADV. MAJOR APPL. REP. III LAB. 3.211E (12 lab. hrs/wk) Term Units 4

Further instruction in trouble-shooting and repair of electric motors, pumps, testing washers, disposals, automatic washers, and dryers. Customer service.
Prerequisite: Advanced Major Appliance Repair II.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Appliance Repair, Small Appliances

(2 Year Program)

Education and training for employment in the field of Appliance Repair are provided in two separate training program options. Because of the ever-increasing number and types of automatic appliances being produced, specialization in repair is given either in major or small appliances. A complete training program of class instruction in theory and fundamental principles, with shop practice and related class instruction is provided in both options.

The option for training in small appliance repair covers instruction in basic principles of small appliances, such as toasters, percolators, automatic fry pans and small electric motors.

Opportunity for employment in the appliance repair field upon completion of training is available with appliance retail or wholesale service departments or general appliance repair shops. Successful completion of school courses and work experience can lead to such positions as service manager or ownership or management of an appliance repair business.

	FALL		WINTER		SPRING	
FIRST YEAR	hrs/wk	units	hrs/wk	units	hrs/wk	units
Small Appl. Rep. I, II, III	5	5	3	3	3	3
Small Appl. Repair I, II, III Lab.	10	3	12	4	12	4
Electrical Theory	5	4	5	4		
Mathematics II, III	3	3	3	3		
Machine Shop Orientation	5	3				
Machine Tool Operation			5	3		
Machine Shop Projects					5	3
Applied Economics					3	3
Employer-Employee Relations					2	2
	28	18	28	17	25	15
SECOND YEAR						
Adv. Small Appl. Rep. I, II, III	3	3	3	3	3	3
Adv. Small Appl. Rep. I, II, III Lab.	12	4	12	4	12	4
Electrical Drafting	4	2				
Practical Physics I, II	5	4	5	4		
Welding IA	5	2				
Communication Skills I, II			3	3	3	3
Salesmanship			3	3		
Business Records and Reports					3	3
Psychology of Human Relations					3	3
Health					2	2
	29	15	26	17	26	18

SMALL APPLIANCE REPAIR, MAJOR COURSE DESCRIPTIONS

INTRO. TO SMALL APPL. REP. I 3.180E (5 class hrs/wk) Term Units 5
INTRO. TO SMALL APPL. REP. I LAB. 3.181E (10 lab. hrs/wk) Term Units 3

Introduction and use and care of shop and machine tools. Instruction in electrical components and electrical instruments. Motor operating principles and motor repairs will be presented. Introduction to repair manuals, order books, materials and repair supplies.

SMALL APPLIANCE REPAIR II 3.182E (3 class hrs/wk) Term Units 3
SMALL APPLIANCE REPAIR II LAB. 3.183E (12 lab. hrs/wk) Term Units 4

Study of bi-metal thermostats and heat to mechanical motion, instruction and demonstration on trouble-shooting and repair of thermostats on toasters, percolators, fry pans and heating devices of various kinds. Study and instruction in operating principles of percolator and how to trouble-shoot and repair heating units and thermostats. Instruction and study of heating principles of electric fry pans and how to trouble-shoot and repair.
Prerequisite: Small Appliance Repair I.

SMALL APPLIANCE REPAIR III 3.184E (3 class hrs/wk) Term Units 3
SMALL APPLIANCE REPAIR III LAB. 3.185E (12 lab. hrs/wk) Term Units 4

Instruction on food mixers, hair dryers, lamps, and other small heaters and small appliances. Instruction in trouble-shooting and repair of these small appliances. Instruction in the principles of operation of shading pole motors, series motors and electrical circuits involved in these motors. Instruction on motors including multi-speed motors, testing of armature and fields, turning and facing commutators, and repairing malfunction of small motors.
Prerequisite: Small Appliance Repair II.

ADV. SMALL APPLIANCE REPAIR I 3.186E (3 class hrs/wk) Term Units 3
ADV. SMALL APPLIANCE REPAIR I LAB. 3.187E (12 lab. hrs/wk) Term Units 4

Instruction in the principles of operating of electric saws and drills, trouble-shooting and repairs, rewinding series motors such as are used in hand tools, vacuum cleaners and food mixers.
Prerequisite: Small Appliance Repair III.

ADV. SMALL APPL. REPAIR II 3.188E (3 class hrs/wk) Term Units 3
ADV. SMALL APPL. REP. II LAB. 3.189E (12 lab. hrs/wk) Term Units 4

Instruction in the repair of electric hand tools and rewinding of electric motors.
Prerequisite: Small Appliance Repair I

ADV. SMALL APPL. REPAIR III 3.190E (3 class hrs/wk) Term Units 3
ADV. SMALL APPL. REP. III LAB. 3.191E (12 lab hrs/wk) Term Units 4

Instruction in small appliances, customer service and discussion of problems involving customer service and small appliance repair.
Prerequisite: Advanced Small Appliance Repair II

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Auto Body and Fender

(2 Year Program)

Training in this program is given in all basic phases of auto body and fender and painting. The varied training is such as to give the student a broad understanding and background of the various phases of auto body and fender and painting through class instruction and shop practice.

Entry jobs for employment in this field are available at auto sales and service departments, and specialty auto body and fender repair and paint shops. Increasing numbers of auto makes and models and traffic congestion have caused an ever-increasing demand for qualified auto body and fender repairmen.

	FALL		WINTER		SPRING	
FIRST YEAR	hrs/wk	units	hrs/wk	units	hrs/wk	units
Automotive Metal Work I, II, III	5	5	3	3	2	2
Auto. Metal Work Lab. I, II, III	10	3	6	2	4	2
Automotive Painting I, II			2	2	3	3
Auto. Painting Lab. I, II			4	2	6	2
Welding IA, IB	5	2	5	2		
Practical Physics I, II, III	5	4	5	4	5	4
Mathematics II	3	3				
Automotive Materials			2	2		
Blueprint Reading, Sketching					3	1
Applied Economics					3	3
	28	17	27	17	26	17
SECOND YEAR						
Automotive Painting III	8	4				
Gen. Body Repair I, II & Painting	7	3	15	7		
Major Body Repair & Fabrication					15	7
Applied Fluid Mechanics	2	2				
Welding IIA, IIB	5	2	5	2		
Collision Estimating					5	3
Automotive Service Management					2	2
Communication Skills I, II	3	3	3	3		
Machine Shop Orientation	5	3				
Health			2	2		
Employer-Employee Relations					2	2
	30	17	25	14	24	14

AUTO BODY AND FENDER, MAJOR COURSE DESCRIPTIONS

AUTOMOTIVE METAL WORK I 3.397E (5 class hrs/wk) Term Units 5
AUTOMOTIVE METAL WORK I LAB. 3.398E (10 lab. hrs/wk) Term Units 3

History and developments in auto body and frame construction and types of auto bodies and frames. Basic principles of auto body construction used in auto body building. Fundamentals of metal work.

AUTOMOTIVE METAL WORK II 3.321E (3 class hrs/wk) Term Units 3
AUTOMOTIVE METAL WORK II LAB. 3.328E (6 lab. hrs/wk) Term Units 2

Instruction on doors and deck lids and methods of repair. Instruction on glass removal and replacement. Information on hardware and trim replacement and repair. Instruction on sealing for water and dust leaks. Preparing and painting panels.

Prerequisite: Auto Metal Work I

AUTOMOTIVE METAL WORK III 3.337E (2 class hrs/wk) Term Units 2
AUTOMOTIVE METAL WORK III LAB. 3.315E (4 lab. hrs/wk) Term Units 2

Instruction on repair and replacement of fender shields and hoods. Principles of measuring for replacement or repair of parts. Instruction in panel fitting and alignment of hoods, doors, trunk lids and other sectional parts of the body. Instruction in metal bumping and dinging of panel sections, metal finishing.
Prerequisite: Auto Metal Work II

AUTOMOTIVE PAINTING I 3.238E (2 class hrs/wk) Term Units 2
AUTOMOTIVE PAINTING I LAB. 3.239E (4 lab. hrs/wk) Term Units 2

Instruction on materials and equipment used in preparation of auto body for refinishing. Instruction in surface building up, priming, spotting, and basic functions in preparing the body surface for painting. Instruction on paint construction and its use.
Prerequisite: To be taken concurrently with Auto Metal Work II.

AUTOMOTIVE PAINTING II 3.240E (3 class hrs/wk) Term Units 3
AUTOMOTIVE PAINTING II LAB. 3.241E (6 lab. hrs/wk) Term Units 2

This course includes instruction on matching colors and the use of color charts. Complete refinishing instructions. Preparation, cleaning, sanding, masking, and spraying. Further instruction on use of spray painting equipment. Inspection of completed paint jobs.
Prerequisite: Auto Painting I

GENERAL BODY REPAIR I 3.242E (1 class-6 lab. hrs/wk) Term Units 3

Instruction in repair of body structure members, including practice in shop.
Prerequisite: Auto Metal Work III.

GENERAL BODY REPAIR II & PAINTING 3.243E
(3 class-12 lab. hrs/wk) Term Units 7

This course includes instruction and practice in panel replacement and alignment. Instruction and practice given in internal panel repair, replacement, and alignment. Instruction in portable frame and body push-pull method of repair. Instruction and practice in welding panels, leading, glassing and smoothing surfaces. Prepare surface and finish spray paint.
Prerequisite: General Body Repair I

AUTOMOTIVE PAINTING III 3.244E (2 class - 6 lab. hrs/wk) Term Units 4

Instruction and practice in use of paint removal by sand blasting, burning and grinding. Instruction and practice on methods and procedures for refinishing over bare metal. Instruction and practice in interior refinishing. Auto clean-up after painting and preparing car for delivery to customer.
Prerequisite: Auto Painting II

MAJOR BODY REPAIR & FABRICATION 3.245E
(3 class - 12 lab. hrs/wk) Term Units 7

Instruction on methods and procedures for repair of extensive damage to cars involving body structural members, frame measuring, and alignment fitting and placing of panels. Measuring and aligning of body for superstructure alignment, push-pull application to body members and metal bumping and refinishing. Instruction on fabrication of major body replacements or alterations.
Prerequisite: General Body Repair II

COLLISION ESTIMATING 3.246E (2 class - 3 lab. hrs/wk) Term Units 3

Instruction and practice in estimating over-all cost for parts, labor, fixing shop costs and profit on repair jobs. Instruction given on preparing insurance claim estimates and making out insurance claim forms.
Prerequisite: Sixth-term standing.

APPLIED FLUID MECHANICS 3.320 (2 class hrs/wk Term Units 3

(See Automotive Mechanics course descriptions.)

AUTOMOTIVE SERVICE MANAGEMENT 3.332 (2 class hrs/wk) Term Units 2

(See Automotive Mechanics course descriptions.)

AUTOMOTIVE MATERIALS 3.336 (2 class hrs/wk) Term Units 2

(See Automotive Mechanics course descriptions.)

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Automotive Mechanics

(2-Year Program)

The Automotive Mechanics curriculum offers broad basic instruction and shop practice in fundamentals, principles of automotive service and repair. This training can lead to employment in entrance occupations of the automotive service and repair field.

With the ever-expanding number of makes and models of autos, the demand for auto mechanics who have a broad background of course instruction and training is constantly increasing. Opportunities await the person who has prepared himself by study and training in the courses offered in this training program.

	FALL		WINTER		SPRING	
FIRST YEAR	**hrs/wk**	**units**	**hrs/wk**	**units**	**hrs/wk**	**units**
Auto Chassis	3	3				
Auto Chassis Lab.	6	2				
Internal Combustion Engine I & II	2	2	2	2		
Internal Combustion Eng. I & II Lab.	3	1	6	2		
Power Trains			2	2		
Power Trains Lab.			5	2		
Fuel System & Carburetion I & II			2	2	2	2
Fuel System & Carburetion Lab I & II			3	1	3	1
Automotive Repair I					9	3
Automotive Electricity I					3	3
Automotive Electricity I Lab.					3	1
Welding IA, IB	5	2	5	2		
Practical Physics, I, III, II	5	4	5	4	5	4
Mathematics II	3	3				
Blueprint Reading					3	1
Employer-Employee Relations					2	2
	27	17	30	17	30	17

SECOND YEAR	FALL hrs/wk	FALL units	WINTER hrs/wk	WINTER units	SPRING hrs/wk	SPRING units
Automotive Repair II & III	9	3	9	3		
Automotive Electricity II	3	3				
Automotive Electricity II Lab.	3	1				
Tune-Up and Diagnosis			2	2		
Tune-Up and Diagnosis Lab.			5	2		
Automotive Overhaul					9	3
Automatic Transmissions					3	3
Automatic Transmissions Lab.					3	1
Applied Fluid Mechanics	2	2				
Communications Skills I & II	3	3	3	3		
Machine Shop Orientation	5	3				
Machine Tool Operation			5	3		
Machine Shop Projects					5	3
Power Steering			4	2		
Automotive Materials			2	2		
Automotive Fuels and Lubricants					2	2
Automotive Repair Estimating					2	2
Automotive Service Management					2	2
Health					2	2
	25	15	29	17	28	18

AUTOMOTIVE MECHANICS, MAJOR COURSE DESCRIPTION

AUTOMOTIVE CHASSIS I 3.300E (3 class hrs/wk) Term Units 3
AUTOMOTIVE CHASSIS LAB. I 3.301E (6 lab. hrs/wk) Term Units 2

The course is designed to give students an understanding of the principles of operation of automotive chassis components. Fundamentals of front suspension and steering geometry, diagnosis of steering and suspension troubles, and overhaul techniques of steering and suspension system are studied. Instruction in basic hand tools and shop equipment. Instructions in brake systems, trouble shooting and overhaul.
Prerequisite: Practical Physics I should be taken concurrently.

INTERNAL COMBUSTION ENGINES I 3.304 (2 class hrs/wk) Term Units 2
INTERNAL COMB. ENGINES LAB. I 3.305 (3 lab. hrs/wk) Term Units 1

Instruction in the principles of operation of various types of internal combustion engines and all components, and accessories. Service and overhaul techniques. Engine and accessory component functions.
Prerequisite: Practical Physics I taken concurrently.

INTERNAL COMBUSTION ENGINES II 3.306 (2 class hrs/wk) Term Units 2
INTERNAL COMB. ENGINES LAB. II 3.307 (6 lab. hrs/wk) Term Units 2

Instruction in overhaul methods, trouble-shooting, general engine performance and testing, and service techniques covering valve, cylinder, and bearing systems.
Prerequisite: Internal Combustion Engines I. Practical Physics II concurrently.

AUTOMOTIVE ELECTRICITY I 3.308 (3 class hrs/wk) Term Units 3
AUTOMOTIVE ELECTRICITY LAB. I 3.309 (3 lab. hrs/wk) Term Units 1

Fundamental principles of electricity as used by the auto mechanic. Construction and function of automotive electrical components, including storage

batteries, switches, ignition, and cranking systems, are studied in detail with the aid of demonstrations, cutaway, and mock-up equipment.
Prerequisite: Practical Physics III taken concurrently.

AUTOMOTIVE ELECTRICITY II 3.322 (3 class hrs/wk) Term Units 3
AUTO. ELECTRICITY LAB. II 3.323 (3 lab. hrs/wk) Term Units 1

Students will acquire the ability to diagnose minor lighting, charging and indicating system troubles as well as to interpret and trace automotive wiring diagrams. Common types of minor electrical accessories are studied.
Prerequisite: Automotive Electricity I or equivalent.

FUEL SYSTEMS AND CARBURETION I 3.310 (2 class hrs/wk) Term Units 2
FUEL SYSTEMS AND CARB. LAB. I 3.311 (3 lab. hrs/wk) Term Units 1

A course in the fundamental principles of carburetion, and overview of principles of engine fuel systems. Basic instruction on carburetor circuits.
Prerequisites: Internal Combustion Engines I. Practical Physics II concurrently.

FUEL SYS. AND CARBURETION II 3.312 (2 class hrs/wk) Term Units 2
FUEL SYS. AND CARBURETION LAB. II 3.313 (3 lab. hrs/wk) Term Units 1

An advanced course in techniques and procedures for overhaul and service of carburetors and carburetion accessories, including all types of single and multiple throat models. Diagnosis and testing procedures involving carburetion systems are covered.
Prerequisite: Fuel Systems and Carburetion I.

POWER STEERING 3.314 (1 class - 3 lab. hrs/wk) Term Units 2

This course is a practical power steering work covering trouble-shooting, dismantling, inspection of parts, reassembly, and adjustment to cover principles of repair procedure on those power steering units common to the automotive trade.
Prerequisite: Second-year standing or instructor's approval and Applied Fluid Mechanics.

POWER TRAINS 3.316 (2 class hrs/wk) Term Units 2
POWER TRAINS LAB. 3.317 (5 lab. hrs/wk) Term Units 2

A course covering all components of the power train, including clutch, standard and overdrive type transmissions, drive line, and final drive.
Prerequsiite: Automotive Chassis I or equivalent.

APPLIED FLUID MECHANICS 3.320 (2 class hrs/wk) Term Units 2

The practical uses of hydraulic power transmission and application. The fundamental principles are reviewed and the uses of hydraulic pressure and fluid flow in brakes, pumps, power steering units, fluid couplings, torque converters, and power accessories are covered thoroughly.
Prerequisite: Practical Physics I and II.

AUTOMOTIVE SERVICE MANAGEMENT 3.332 (2 class hrs/wk) Term Units 2

This outlines the duties and responsibilities of the service manager. The students study methods of organizing service personnel, shop facilities, and an introduction to shop layout and buildings. Appreciation of good relationship with customers, labor and management groups, and individuals is emphasized.
Prerequisite: Sixth-term standing.

TUNE-UP AND DIAGNOSIS 3.324 (2 lab. hrs/wk) Term Units 2
TUNE-UP AND DIAGNOSIS LAB. 3.325 (5 lab. hrs/wk) Term Units 2

Instruction in diagnosing malfunctions in the automotive engine and its accessory systems. Advanced methods of testing electrical and carburetion sys-

tems. Developing the ability to analyze the operation of all engine accessories directly to engine performance.
Prerequisite: Second-year standing and Automotive Electricity II or equivalent.

AUTOMATIC TRANSMISSIONS 3.326 (3 class hrs/wk) Term Units 3
AUTO. TRANSMISSIONS LAB. 3.327 (3 lab. hrs/wk) Term Units 1

Instruction in automatic transmissions, including principles of operation, trouble-shooting and overhaul procedures on hydraulically operated transmissions, torque converters, and fluid couplings used with automatic transmissions common to the automotive field.
Prerequisite: Applied Fluid Mechanics and Power Trains or equivalent.

AUTOMOTIVE REPAIR I 3.329 (9 lab. hrs/wk) Term Units 3

A shop course in which the students can develop additional abilities and understanding through diagnosis and repair of automotive equipment. It will include overhaul and maintenance procedures and practices on suspension systems, brakes, power trains and engines. Students will develop skills in analyzing problems, outlining job procedures, conservation of working time, and overhaul of the defective units.
Prerequisite: Second-year standing or instructor's approval.

AUTOMOTIVE REPAIR II 3.331 (9 lab. hrs/wk) Term Units 3

A continuation of Automotive Repair I in further developing the student's abilities and knowledge. Skills developed in previous courses will be improved with emphasis on automotive electricity and automatic transmission units.
Prerequisite: Automotive Repair I or equivalent.

AUTOMOTIVE REPAIR III 3.333 (9 lab. hrs/wk) Term Units 3

A continuation of Automotive Repair II to develop further the student's abilities in diagnosis and repair of automotive units, with emphasis on power steering and tune-up procedures. Power accessories are serviced.
Prerequisite: Automotive Repair II or equivalent.

AUTOMOTIVE OVERHAUL 3.335E (9 lab. hrs/wk) Term Units 3

Complete inspection and analysis to determine repairs needed to recondition an automobile. Motor analysis and overhaul. Inspection and repair of chassis, steering, brakes, electrical system, fuel system, carburetion, power trains, cooling system, power systems, automatic transmission, and auxiliary equipment.
Prerequisite: Automotive Repair III.

AUTOMOTIVE MATERIALS 3.336 (2 class hrs/wk) Term Units 2

Instruction in the use of iron, steel, aluminum and light alloys, copper and its alloys, as well as plastics, fibers, rubber, and synthetics. Information concerning various body finishes.

AUTOMOTIVE REPAIR ESTIMATING 3.338 (2 class hrs/wk) Term Units 2

Instruction in the proper diagnosing and estimating of labor and material costs involved in the repair and service of automotive equipment. Emphasis will be on the use of typical manuals and price lists used in industry.
Prerequisite: Second-year standing or equivalent.

AUTOMOTIVE FUELS & LUBRICANTS 3.334 (2 class hrs/wk) Term Units 2

Theory course covering the nature and origin of petroleum products and of manufacturing processes involved. Study of use and function of these products.
Prerequisite: Second-year standing or equivalent.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Business Education

(1 Year Program)

This department offers the courses necessary to prepare for employment in secretarial, bookkeeping, and general office positions.

Each student is evaluated on the basis of his previous education and training. Students are tested for typing and shorthand ability on acceptance to determine what courses and training are needed for employment. Training is directed toward developing competency and efficiency in performance for employment in business or industry.

Basic program can be completed in a nine-month period of half-day school attendance.

TYPING I 2.101 (2 class - 3 lab. hrs/wk) Term Units 3

Introduction to different makes of typewriters and their operation; mastery of keyboard through alphabet typing exercises and the development of the touch system.

TYPING II 2.102 (1 class - 4 lab. hrs/wk) Term Units 3

Development of speed and accuracy; introduction to various styles of business letters and the typing of envelopes and tabulated material. Miscellaneous office procedures. Dictaphone practice.

TYPING III 2.103 (1 class - 4 lab. hrs/wk) Term Units 3

An advanced typing course introducing preparation of business reports, legal forms and duplicating materials. Intensive speed and review drills to increase speed and accuracy to employment level.

SHORTHAND & TRANSCRIPTION I 2.105 (2 class - 3 lab. hrs/wk) Term Units 3

Introduction to theory of Gregg Shorthand Simplified, including the alphabet, brief forms, phrasing and abbreviating principles.

SHORTHAND & TRANSCRIPTION II 2.106 (2 class - 3 lab. hrs/wk) Term Units 3

Completion of shorthand theory and review of all principles. Development of ability to construct new outlines rapidly from dictation and to lay solid foundation for further development of dictation and transcription skill. Ability to produce mailable letters is developed.

SHORTHAND & TRANSCRIPTION III 2.107 (2 class - 3 lab. hrs/wk) Term Units 3

Advanced course; emphasis on further development of speed and accuracy in dictation and transcription. Intensive practice in refining shorthand skills and in producing mailable letters. Personal qualifications covered.

BOOKKEEPING & ACCOUNTING I 2.110 (2 class - 3 lab. hrs/wk) Term Units 3

Introduction to basic principles of bookkeeping and accounting; the bookkeeping cycle; journals and ledgers, special journals and subsidiary ledgers and financial statements.

BOOKKEEPING & ACCOUNTING II 2.111 (2 class - 3 lab. hrs/wk) Term Units 3

The bookkeeping and accounting cycle as it applies to the combination journal; payroll accounting, payroll taxes applying to the employer, depreciation and disposal of fixed assets and principles for the recording of bad debts.

BOOKKEEPING & ACCOUNTING III 2.112 (2 class - 3 lab. hrs/wk) Term Units 3

Introduction to accounting principles as applied to departmental and partnership accounting; controls and records, corporation accounting, manufacturing accounting.

OPTIONAL ELECTIVE COURSES:

MATHEMATICS I (4.200) and II (1.102)
COMMUNICATION SKILLS I (1.100) and II (1.102)
APPLIED ECONOMICS (1.506)
HEALTH EDUCATION (1.605)
SELECTED LIBERAL ARTS COURSES

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Cabinetmaking

(2 Year Program)

This training program is planned to provide broad basic instruction and practice in the fundamentals of cabinetmaking. Training is directed toward employment in entry occupations in cabinet shops and mill work manufacturing plants.

	FALL		WINTER		SPRING	
FIRST YEAR	hrs/wk	units	hrs/wk	units	hrs/wk	units
Cabinet & Milwork I, II & III	5	5	5	5	5	5
Cabinet & Milwork I, II & III Lab.	10	3	10	3	10	3
Drafting I & II	4	2	4	2		
Mathematics II	3	3				
Machine Shop Orientation	5	3				
Machine Tool Operation			5	3		
Machine Shop Projects					5	3
Applied Economics					3	3
Communications Skills I & II			3	3	3	3
	27	16	27	16	26	17
SECOND YEAR						
Cabinet & Millwork IV, V & VI	3	3	3	3	3	3
Cabinet & Millwork IV, V & VI Lab.	12	4	12	4	12	4
Practical Physics I & II	5	4	5	4		
Welding IA	5	2				
Introduction to Specifications	3	3				
Project Drafting			10	4		
Business Records and Reports					3	3
Industrial Safety					3	3
Health					2	2
Employer-Employee Relations					2	2
	28	16	30	15	25	17

CABINETMAKING, MAJOR COURSE DESCRIPTIONS

CABINET & MILLWORK I 3.192E (5 class hrs/wk) Term Units 5
CABINET & MILLWORK LAB. I 3.193E (10 lab. hrs/wk) Term Units 3

This course gives background information on the trade. Information on different types of wood and wood selection, wood joints and other materials of construction are studied. Instruction in estimating stock needs and billing procedures. Instruction in the use and maintenance of hand tools and portable power tools. Instruction is also given on basic machine tools used in the trade.

CABINET & MILLWORK II 3.194E (5 class hrs/wk) Term Units 5
CABINET & MILLWORK LAB. II 3.195E (10 lab. hrs/wk) Term Units 3

This course introduces layout from blueprint or sketch of mill projects such as doors, windows, frames and louvers. Instruction also included in simple mill and cabinet jobs, and milling of moldings and trim work. Instruction is also given in jointing and assembly work of mill projects.

Prerequisite: Cabinet & Millwork I.

CABINET & MILLWORK III 3.196E (5 class hrs/wk) Term Units 5
CABINET & MILLWORK LAB. III 3.197E (10 lab. hrs/wk) Term Units 3

This course includes sketching and layout of cabinet work. Instruction in layout and billing of material, and selection of stock for cutting. Methods of layout, machining and bench assembly methods. Instruction given in finishing details.

Prerequisite: Cabinet & Millwork II.

CABINET & MILLWORK IV 3.198E (3 class hrs/wk) Term Units 3
CABINET & MILLWORK LAB. IV 3.199E (12 lab. hrs/wk) Term Units 4

Instruction and demonstration in design, layout and construction and installation of special-order cabinets. Instruction in planning layout from sketch or blueprint, billing material, cutting stock, detail making, layout, machine assembly and finishing. Laminating cabinet tops. Instructon on house framing.

Prerequisite: Cabinet & Millwork III.

CABINET & MILLWORK V 3.212E (3 class hrs/wk) Term Units 3
CABINET & MILLWORK LAB. V 3.213E (12 lab. hrs/wk) Term Units 4

This course involves the layout of fixtures from blueprint or sketches. Selection of wood and milling is included. Problems involving installation of fixtures in commercial buildings are presented. Stair layout and construction.

Prerequisite: Cabinet & Millwork IV.

CABINET & MILLWORK VI 3.214E (3 class hrs/wk) Term Units 3
CABINET & MILLWORK LAB. VI 3.215E (12 lab. hrs/wk) Term Units 4

This course includes specialized cabinet jobs which involve selection and matching of woods and panels for high-quality production jobs. Instruction in use of plastic and wood substitutes in fixtures and home furnishing construction.

Prerequisite: Sixth-term standing.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Carpentry

(2 Year Program)

The Carpentry training program is planned to give instruction in the various phases of carpentry with shop practice in the basic fundamentals.

On satisfactory completion of this course a student is ready for employment in entry jobs in the construction field.

The area carpentry apprenticeship committee should be contacted upon completion.

Those who complete the total broad basic training program and continue to study and gain more work experience will find many opportunities for advancement

	FALL		WINTER		SPRING	
FIRST YEAR	**hrs/wk**	**units**	**hrs/wk**	**units**	**hrs/wk**	**units**
Building Construction I, II & III	5	5	5	5	5	5
Building Construc. I, II & III Lab.	10	3	10	3	10	3
Drafting I & II	4	2	4	2		
Machine Shop Orientation	5	3				
Machine Tool Operation			5	3		
Communication Skills I & II			3	3	3	3
Mathematics II	3	3				
Applied Economics					3	3
Employer-Employee Relations					2	2
	27	16	27	16	23	16
SECOND YEAR						
Building Construction IV, V & VI	3	3	3	3	3	3
Building Construc. IV, V & VI Lab.	12	4	12	4	12	4
Welding IA & IB	5	2			5	2
Practical Physics I & II	5	4	5	4		
Introduction to Specifications	3	3				
Project Drafting			10	4		
Business Records & Reports					3	3
Health					2	2
Industrial Safety					3	3
	28	16	30	15	28	17

CARPENTRY, MAJOR COURSE DESCRIPTIONS

BUILDING CONSTRUCTION I 3.216E (5 class hrs/wk) Term Units 5

BUILDING CONSTRUCTION LAB. I 3.217E (10 lab. hrs/wk) Term Units 3

This course gives background information on the trade. Information on different types wood and wood selection, wood joints and other materials of construction is studied. Instruction in estimating stock needs and billing procedures. Instruction is given in the use and maintenance of hand tools and portable tools and instruction is also given on basic machine tools used in the trade.

BUILDING CONSTRUCTION II 3.218E (5 class hrs/wk) Term Units 5

BUILDING CONSTRUCTION LAB. II 3.219E (10 lab. hrs/wk) Term Units 3

This course involves instruction and information on contour map reading and layout of foundations and framing of buildings. Instruction in use of level. Planning and figuring lumber for the basic construction of a building from blueprints. Different types of wall construction, joist layout, framing for openings, floor construction and wall bracing.

Prerequisite: Building Construction I.

BUILDING CONSTRUCTION III 3.232E (5 class hrs/wk) Term Units 5

BUILDING CONSTRUCTION LAB. III 3.233E (10 lab. hrs/wk) Term Units 3

This course is a continuation of instruction and information begun in House Framing Methods I. Framing of openings, porches, and additions. Ceiling and roof framing, rafter cutting, bracing, insulation and roofing. Special emphasis on use of the steel square.

Prerequisite: Building Construction II.

BUILDING CONSTRUCTION IV 3.250E (3 class hrs/wk) Term Units 3

BUILDING CONSTRUCTION LAB. IV 3.251E (12 lab. hrs/wk) Term Units 4

Instruction and practice in the application of exterior wall coverings, door and window frames, interior wall finish, flooring and trim.

Prerequisite: Building Construction III, 3.232E.

BUILDING CONSTRUCTION V 3.234E (3 class hrs/wk) Term Units 3

BUILDING CONSTRUCTION LAB. V 3.235E (12 lab. hrs/wk) Term Units 4

This course includes instruction and practice in stair layout and construction. Instruction and practice in household cabinets, including layout, billing and cutting materials, assembly, and installation.

Prerequisite: Building Construction IV, 3.250E.

BUILDING CONSTRUCTION VI 3.236E (3 class hrs/wk) Term Units 3

BUILDING CONSTRUCTION LAB. VI 3.237E (12 lab. hrs/wk) Term Units 4

Instruction in construction work such as is involved in commercial building, bridge work, dam and reservoirs. Problems involving reading of plans and specifications. Preparing bills of material and estimating costs of the carpentry work involved. Instruction in heavy girder and truss construction. Instruction in special construction problems and new and experimental methods.

Prerequisite: Building Construction V.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Civil and Structural Engineering Technician

(2 Year Program)

The instruction and training in this program are aimed at giving broad technical theory and lab. work in subject areas involved in civil and structural engineering.

The program of courses is aimed at providing the fundamental background and training to prepare the student for positions in entry classifications leading to civil engineering technician, highway engineering technician, surveyor, construction estimator, inspector, contractor assistant, cost estimator and related jobs.

Opportunities for employment in this field are available with construction contractors, engineering firms and consultants, and local, county, state and federal agencies.

Applicants must have completed high school or the equivalent and should have successfully passed a course in algebra. Applicants must pass an entrance examination.

This program is scheduled from 4:30 p.m. to 10 p.m.

	FALL		WINTER		SPRING	
	hrs/wk	units	hrs/wk	units	hrs/wk	units
FIRST YEAR						
Plane Surveying I, II	5	3	5	3		
Engineering Problems I & II	2	1	2	1		
Technical Mathematics I, II & III	4	4	4	4	4	4
Applied Physics I & II	5	4	5	4		
Communication Skills I & II	3	3	3	3		
Drafting I & II	4	2	4	2		
Applied Mechanics I					5	3
Surveying Computations					5	3
Strength of Materials I					2	2
Strength of Materials I Lab.					3	1
Descriptive Geometry					4	2
	23	17	23	17	23	15
SECOND YEAR						
Mapping and Computing I & II	4	2	6	2		
Strength of Materials II	5	3				
Structural Analysis & Design I	4	2				
Materials of Construction	2	2				
Applied Mechanics II	5	3				
Applied Economics	3	3				
Hydraulics I & II			3	3	3	3
Soil Mechanics I			5	3		
Timber & Steel Construction			6	4		
Construction Codes			2	2		
*Health			2	2		
Concrete Construction & Design					7	3
Foundations of Structures					3	3
Structural Drafting					5	2
Contracts & Specifications					3	3
Construction Estimating					2	2
	23	15	24	16	23	16

*Elective

CIVIL AND STRUCTURAL ENGINEERING TECHNICIAN, MAJOR COURSE DESCRIPTIONS

PLANE SURVEYING I 6.101 (1 class - 4 lab. hrs/wk) Term Units 3

A beginning course in surveying techniques designed to give the student 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.
Prerequisite: Approval of department head.

PLANE SURVEYING II 6.103 (1 class - 4 lab. hrs/wk) Term Units 3

A continuation of Plane Surveying I designed to familiarize the student completely with the engineer's transit. Uses of the transit and practical problems to put the theory into practice.
Prerequisite: Second-term standing or approval of department head.

STRENGTH OF MATERIALS I 6.107T (2 class hrs/wk) Term Units 2
STRENGTH OF MATERIALS I LAB. 6.107 (3 lab. hrs/wk) Term Units 1

A study of the stresses and strains that occur in bodies when subjected to tensile, compressive and shearing forces, including the common theory of beams. The distribution and magnitude of stresses are examined in welded and riveted joints, thin-wall cylinders, torsional members and beams. Practice problems emphasize the materials studied.
Prerequisite: Applied Mechanics I and Technical Mathematics I or equivalent.

STRENGTH OF MATERIALS II 6.128 (2 class - 3 lab. hrs/wk) Term Units 3

A study of the design and deflection of beams, and a study of the combination of forces and their effect upon various structural members. This course includes a study of failure of structural connection and laboratory tests of materials.
Prerequisite: Strength of Materials I or equivalent.

MATERIALS OF CONSTRUCTION 6.108 (2 class hrs/wk) Term Units 2

Comparisons of various materials, their source, method of manufacture, physical and chemical properties; grading under a variety of conditions; soil and terrain as encountered in construction work.
Prerequisite: Approval of department head.

CONSTRUCTION ESTIMATING 6.110 (2 class hrs/wk) Term Units 2

Designed to develop skills in estimating the amount and cost of materials required and labor cost involved in various types of construction. Student makes estimates of material and labor quantities and costs for representative types of construction.
Prerequisite: Fifth-term standing or approval of department head.

APPLIED MECHANICS I 6.109 (2 class, 3 lab. hrs/wk) Term Units 3

A study of energy in motion. The course covers the principles of friction, centroids, inertial characteristics, motion and velocity, force and acceleration, curvilinear motion and rotation and advanced concepts of work, power, and energy. Time is provided for demonstrations and experiments to help clarify the principles and procedures covered.

APPLIED MECHANICS II 6.111 (2 class - 3 lab. hrs/wk) Term Units 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.
Prerequisites: Fourth-term standing or approval of department head.

HYDRAULICS I 6.112 (3 class hrs/wk) Term Units 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, 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: Fifth-term standing or approval of department head.

HYDRAULICS II 6.114 (3 class hrs/wk) Term Units 3

Consists of the fundamentals of fluid flow, Bernoulli's Theorum, flow profiles, stream restrictions (such as weirs, flumes, metering runs), distribution of energy in the stream flow through pipe, Reynolds Law, Newton's Law of Hydrodynamics, vector representation, hydraulic similitude, and dimensional analysis. Time is provided for demonstration and experiments to help clarify the principles and procedures covered in class.
Prerequisite: Hydraulics 6.112 or equivalent.

FOUNDATIONS OF STRUCTURES 6.120 (3 class hrs/wk) Term Units 3

A study of various materials, devices and designs used in structural foundations such as footings, cofferdams, caissons, abutments, piers, and underpinnings.
Prerequisite: Applied Mechanics II and Technical Mathematics III.

CONSTRUCTION CODES 6.122 (2 class hrs/wk) Term Units 2

This course is designed to familiarize the student with the various codes which specify the standards of construction and the installation of electrical and plumbing fixtures. Students study the Pacific Coast Uniform Building Code, The National Electrical Code, and the Oregon State Plumbing Laws, and the regulations Governing Plumbing and Water Supply. The function of Government units (state and local) charged with the administration and inspection of building construction will be covered.
Prerequisite: Approval of department head.

CONCRETE CONST. & DESIGN 6.123 (2 class - 5 lab. hrs/wk) Term Units 3

A study of concrete materials, shear and bending calculations, shear and bending stresses and design calculations. Covereage is given to rectangular, tee and reinforced beams, reinforced floor systems and columns, foundations, retaining walls and miscellaneous members. Lab. work will consist of problem-solving.
Prerequisite: Sixth-term standing or approval of department head.

SOIL MECHANICS I 6.124 (2 class - 3 lab. hrs/wk) Term Units 3

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.

TIMBER & STEEL CONSTRUCTION 6.125 (3 class - 3 lab. hrs/wk) Term Units 4

A study of steel and wood fasteners and connections, timber beams and columns. Structural members will be analyzed for design features. Field trips will be used to visualize application. Laboratory time will be used for testing.
Prerequisite: Structural Analysis and Design 6.130 or equivalent.

STRUCTURAL ANALYSIS & DESIGN 6.130 (1 class - 3 lab. hrs/wk) Term Units 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 and conditions causing compression, tension, shear, torsion and bending; practical design procedures relating to various structural members, beams, girders, columns, and footings.
Prerequisites: Applied Mechanics I; Strength of Materials I.

MAPPING AND COMPUTING I 6.131 (4 lab. hrs/wk) Term Units 2

Advanced map plotting, earthwork computation, field surveying from maps, legal description, subdivision planning and simulated problems of construction are used.
Prerequisite: Fourth-term standing or approval of department head.

MAPPING AND COMPUTING II 6.133 (6 lab. hrs/wk) Term Units 2

A study of surveying laws, public land survey procedures, professional surveyor practices, earth work computations and map projections. The student will lay out a highway section, prepare a zone change map, retrace a government survey, compute earth quantities from a topographic map. Student will perform related operations such as verification of ownership, and conformance with zoning laws or similar projects.
Prerequisite: Mapping and Computing I or equivalent.

SURVEYING COMPUTATIONS 6.500 (1 class - 4 lab hrs/wk) Term Units 3

A study of trigonometric and geometric formulas, logarithms, mechanical computers and integrating instruments, area computation, traverse calculations, leveling, plotting surveys. Field trips and problems will be used as needed.
Prerequisite: Third-term standing or approval of department head.

CONTRACTS AND SPECIFICATIONS 6.118 (3 class hrs/wk) Term Units 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.
Prerequisite: Second-year standing or approval of department head.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Diesel Mechanics

(2-Year Program)

Training offered in the Diesel Mechanics program is planned to provide basic instruction in automotive heavy equipment and diesel heavy equipment repair.

The training in the Diesel Mechanic field is planned to prepare a person for employment in entry occupations leading to jobs such as heavy duty mechanic, bus mechanic, truck mechanic, tractor mechanic, fuel injection technician, diesel tune-up technician and related jobs.

Possible job opportunities are available with truck fleets, logging operations, heavy construction, factory diesel sales outlets, road construction contractors, parts sales and service outlets, general heavy equipment repair jobs and automotive diesel service and repair.

FIRST YEAR	FALL hrs/wk	FALL units	WINTER hrs/wk	WINTER units	SPRING hrs/wk	SPRING units
Automotive Chassis I	3	3				
Automotive Chassis Lab. I (Heavy Equipment)	6	2				
Internal Combustion Engines I & II	2	2	2	2		
Internal Comb. Engines I & II Lab.	3	1	6	2		
Power Trains			2	2		
Power Trains Lab., Hvy Equip.			5	2		
Fuel Systems & Carb., Hvy. Equip.			2	2		
Fuel Systems & Carb. Lab., (Heavy Equipment)			3	1		
Diesel Engines I					2	2
Diesel Engines Lab. I					6	2
Fuel Injection Systems I					2	2
Fuel Injection Systems Lab. I					4	1
Automotive Electricity					3	3
Automotive Electricity Lab., (Heavy Equipment)					3	1
Machine Shop Orientation	5	3				
Machine Tool Operation			5	3		
Machine Shop Projects					5	3
Practical Physics I, III & II	5	4	5	4	5	4
Mathematics II	3	3				
	27	18	30	18	30	18
SECOND YEAR						
Fuel Injection Systems II	2	2				
Fuel Injection Systems II Lab.	6	2				
Diesel Engines II	2	2				
Diesel Engines Lab. II	6	2				
Diesel Tune-Up & Diagnosis			2	2		
Diesel Tune-Up & Diagnosis Lab.			5	4		
Diesel Engine Repair I & II			9	3	9	3
Heavy Equipment Hydraulics					5	3
Auxiliary Systems					2	2
Auxiliary Systems Lab.					3	1
Applied Fluid Mechanics	2	2				
Welding IA	5	2				
Welding IB			5	2		
Welding IIA					5	2
Communication Skills I & II	3	3	3	3		
Power Steering			4	2		
Automotive Service Management					2	2
Health			2	2		
Employer-Employee Relations					2	2
	26	15	30	16	28	15

DIESEL MECHANICS, MAJOR COURSE DESCRIPTIONS

AUTO CHASSIS I 3.300 (See Auto Mechanics)

AUTO CHASS. LAB I, HEAVY EQUIP. 3.346E (6 lab. hrs./wk) Term Units 2

Lab. practice to develop the ability to use basic hand tools, measuring tools and shop equipment in the overhauling and adjusting of various types of automotive and truck suspension and steering systems. Brake service, hydraulic overhaul, and air brake servicing.

Prerequisite: Automotive Chassis I should be taken concurrently.

INTERNAL COMBUSTION ENGINES I 3.304 (See Auto Mechanics)

INTER. COMB. ENG. LAB. II, HEAVY EQUIP. 3.348E (6 lab. hrs/wk) Trem Units 2

Practical experience in heavy duty engine reconditioning. Diagnosis of troubles directly related to the engine and its performance is practiced with the use of test instruments. A companion course for Internal Combustion Engines II. Special practice with heavy duty engines.

Presequisite: Pract. Phys. I, Int. Comb. Eng. II, Pract. Phys. II taken concurrently.

FUEL SYST. & CARB., HEAVY EQUIP. 3.349E (2 class hrs/wk) Term Units 2

FUEL SYST. CARB., HVY. EQUIP. LAB. 3.350E (3 lab. hrs/wk) Term Units 1

Fundamental principles of carburetion, engine fuel systems and fuels and the functions of all types of gas fuel systems with an understanding of carburetors and carburetor circuits on automotive and heavy duty gasoline engines. Techniques and procedures for overhaul and service of carburetors and carburetor accessories, with emphasis on heavy duty and special carburetion equipment such as supercharger and automotive fuel injection.

Prerequisite: Internal Comb. Eng. I. Practical Phys. II taken concurrently.

AUTO. ELECTRICITY I 3.308 (See Auto Mechanics)

AUTO. ELEC. LAB. I, HEAVY EQUIP. 3.352E (3 lab hrs/wk) Term Units 1

Practical application of the theory studied in Automotive Electricity I as related to heavy equipment.

Prerequisite: to be taken concurrently with Automotive Electricity.

POWER TRAINS 3.316 (See Auto Mechanics)

POWER TRAINS LAB., HEAVY EQUIP. 3.351E (5 lab. hrs/wk) Term Units 2

This course is designed for developing skills in servicing, overhauling and adjusting units in automatic and heavy equipment power trains. Work will be performed on laboratory units in conjunction with units in Power Trains theory.

Prerequisite: To be taken concurrently with Power Trains.

HYDRAULICS, HVY. EQUIP. 3.353E (2 class - 3 lab. hrs/wk) Term Units 3

The principles of hydraulics in power transmission as used on heavy duty equipment. Basic principles of hydraulics and the trouble-shooting, servicing and overhauling of hydraulic system components, couplings, torque converters and power accessories such as are used on bulldozers, fork lifters, loaders, etc.

Prerequisite: Sixth-term standing.

DIESEL ENGINES I 3.800 (2 class hrs/wk) Term Units 2

DIESEL ENGINES LAB. I 3.801 (6 lab. hrs/wk) Term Units 2

This is a beginning course in diesel engines and is designed to give the student

an understanding of the types and construction of these engines with emphasis on the fundamentals, and cooling and lubrication systems.
Prerequisite: Third-term standing on Diesel Mechanics Curriculum.

DIESEL ENGINES II 3.802 (2 class hrs/wk) Term Units 2
DIESEL ENGINES LAB. II 3.803 (6 lab. hrs/wk) Term Units 2

Valve operating mechanism, air intake systems, piston and connecting rod servicing, crankshaft servicing, cylinder and block servicing, engine performance superchargers and blowers, and mechanical and hydraulic governors.
Prerequisite: Diesel Engines I and Lab. or equivalent.

FUEL INJECTION SYSTEM I 3.804 (2 class hrs/wk) Term Units 2
FUEL INJECTION SYSTEMS LAB. I 3.805 (4 lab. hrs/wk) Term Units 1

This course covers diesel fuel systems, fuel-oil transfer pumps, injection systems, fuel injection pumps and nozzles.
Prerequisite: Second-year standing and Diesel Engines I or Lab. I or equivalent.

FUEL INJECTION SYSTEMS II 3.806 (2 class hrs/wk) Term Units 2
FUEL INJECTION SYSTEMS LAB. II 3.807 (6 lab. hrs/wk) Term Units 2

Service and repair of injection equipment. Safety and proper handling of fuel injection equipment and testing equipment. The principles, specifications, installations, adjustments and maintenance of various types of nozzles.
Prerequisite: Fuel Injection Systems I.

DIESEL TUNE-UP AND DIAGNOSIS 3.808 (2 class hrs/wk) Term Units 2
DIESEL TUNE-UP & DIAGNOSIS LAB. 3.809 (5 lab. hrs/wk) Term Units 2

A study of the various troubles encountered in tune-up and diagnosis of diesel engines with emphasis on accurate and systematic procedures.
Prerequisite: Diesel Engines I and II. Fuel Injection Syst. I & II or equivalent.

DIESEL ENGINE REPAIR I 3.811 (9 lab. hrs/wk) Term Units 3

Shop and/or lab. course in which the students can develop additional abilities and understandings through the diagnosis and repair of operating diesel equipment and components. It will include overhaul and maintenance procedures and practices as they relate to the removal, disassembly, repair, reassembly, and testing of typical diesel engines and their components.
Prerequisite: Sixth-term standing.

DIESEL ENGINE REPAIR II 3.816 (9 lab. hrs/wk) Term Units 3

This course will include diagnosis, repair and overhaul procedures on the engines, their removal, disassembly, overhaul, reassembly installation and testing of component parts. Inspection, servicing and repair of fuel systems, carburetion, electrical systems, power trains, hydraulic units and fuel injection systems.
Prerequisite: Sixth-term standing.

APPLIED FLUID MECHANICS 3.320 See Auto Mechanics

AUXILIARY SYSTEMS 3.812 (2 class hrs/wk) Term Units 2
AUXILIARY SYSTEMS LAB. 3.813 (3 lab. hrs/wk) Term Units 1

This is a specialized study in the areas of the cooling, fuel supply, lubrication, air intake, exhaust, and starting systems of typical diesel engines in use today. Starting aids, blower and superchargers, governors and air compressors are also covered.
Prerequisite: Diesel Engines 3.800 and 3.802 or equivalent.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

APPLICATION FOR ADMISSION

LANE COMMUNITY COLLEGE

200 N. Monroe Street, Eugene, Oregon

Application for enrollment in _____ curriculum

Mr.
Miss
Mrs. _____
(Last Name) (First Name) (Middle Name)

Date of Birth _____ Place of Birth _____ Maiden Name _____

Home Address _____
(Street or P.O. Box) (City) (State) (Phone)

Parent or
Relative _____
(Name) (Relationship) (Occupation)

Address _____ Phone _____

Plan to enter _____ Full Time _____ Part Time _____ Single _____ Married _____ No. Dependents _____
(Term) (Year)

Last High School Attended _____
(Name and Address)

Graduated from high school
or expect to graduate _____ Highest Grade Completed _____ Year _____

Other education or training beyond high school:

School	Address	Curriculum	Dates

Military Service _____
(Inclusive Dates) (Branch) (Specialty)

Note: Request the high school you last attended and any other school beyond the high school which you have attended to send a transcript of your school records to the Lane Community College, 200 N. Monroe, Eugene, Oregon. If you have taken the General Educational Development Test for high school equivalency, please send the certification of test results.

Employed at _____
(Firm Name and Address) (Position)

Do you plan to work at a job while attending school? Yes _____ Hrs. Week _____ None _____

Method of Financing: Self _____ Parent _____ Other _____

Applicant _____ Date _____
(Signature)

(For school use only. Do not write below this line.)

Counseled by _____ Date _____
(Signature)

Admit by _____ Date _____
(Signature)

(Add other pertinent information on back of this form.)

Electronic Engineering Technician

(2-Year Program)

This program of courses is planned to provide the basic principles, theory and lab. work in the practical phases of electronics that a technician needs to know. This training is such as to prepare the beginning technician for understanding and knowledge of a highly skilled aspect of electronics, so that he can work under the supervision of an engineer or the engineering departments where this technical competence is needed.

Satisfactory completion of the two-year program qualifies the person for employment as an electronic engineering technician, electronic instrument technician, electronic lab. technician, guided missle technician, industrial electronic technician, microwave radio technician and radio technician. The rapid expansion of the electronic industry in this "Space Age" has created a great demand for engineering technicians in electronics.

Opportunities and demand for employment in this field are greater than the supply of trained personnel and will continue at this rate because of the unusual expansion of the electronics industry. Job opportunities are available in government agencies involved in missile programs and space exploration. Automation developments in business and industry offer opportunities for trained technicians.

Applicants must have completed high school or the equivalent and should have successfully completed a course in Algebra. An entrance test must be passed to be admitted.

This program is scheduled from 4:30 p.m. to 10 p.m.

	FALL		WINTER		SPRING	
FIRST YEAR	**hrs/wk**	**units**	**hrs/wk**	**units**	**hrs/wk**	**units**
Electrical Theory (DC) (6.200)	5	4				
Electrical Theory (AC) (6.202)			5	4		
Engineering Problems I & II	2	1	2	1		
Technical Mathematics I, II & III	4	4	4	4	4	4
Applied Physics	5	4	5	4		
Communication Skills I & II	3	3	3	3		
Drafting I	4	2				
Electrical Drafting			4	2		
Practical Descriptive Geometry					4	2
Electrical Circuits					3	3
Electrical Circuits Lab.					6	2
Vacuum Tube & Trans. Aanal.					3	3
Vacuum Tube & Trans. Lab.					3	1
	23	18	23	18	23	15

SECOND YEAR	FALL hrs/wk	FALL units	WINTER hrs/wk	WINTER units	SPRING hrs/wk	SPRING units
Oscillator Circuits & Design			2	2		
Oscillator Circ. & Design Lab.			6	2		
Servo Systems	4	2				
Wave Generation and Shaping	5	3				
Electrical Mathematics I	4	4				
Applied Economics	3	3				
Industrial Electronics I & II			5	3	6	4
Industrial Television I & II			5	3	3	1
Amplifier Circuits & Design	3	3				
Amplifier Cir. & Design Lab.	6	2				
Electronic Data Processing			3	3		
*Health			2	2		
Advanced Electronic Circuits					5	3
Automation Systems					3	3
Microwaves					5	3
	25	17	23	15	22	14

*Elective

ELECTRONIC ENGINEERING TECHNICIAN, MAJOR COURSE DESCRIPTIONS

ADVANCED ELECTRONIC CIRCUITS 6.216R

(2 class - 3 lab. hrs/wk) Term Units 3

Simulated problems of industry. Covers six electronic areas including computers, communications, industrial controls, electronics, microwaves, and radar. Overview of each area and study of current problems and opporutnities. Lab. involves construction, testing, and reporting performance of assigned circuits. Prerequisite: Sixth-term standing or approval of department head.

AMPLIFIER CIRCUITS AND DESIGN 6.214R

(3 class hrs/wk) Term Units 3

AMPLIFIER CIRC. & DES. LAB. 6.215R

(6 lab. hrs/wk) Term Units 2

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 configurations and covers biasing methods. Also includes transformer analysis, transformer-coupled amplifiers, and R-C coupled amplifiers.
Prerequisite: Fourth-term standing or approval of department head.

AUTOMATION SYSTEMS 6.244

(3 class hrs/wk) Term Units 3

Study of the techniques of automation. Introduces the basic concepts of automation and covers automatic controls, pneumatic control devices, hydraulic control devices, and electronic and electric control devices. The application of automation is studied from examples in the areas of materials handling and assembling, production of metals, metal casting processes, mechanical working of metals, press-working of metals, metal cutting operations, heat treating of metals, metal joining operations, and inspection and quality control.
Prerequisite: Sixth-term standing or approval or department head.

ELECTRICAL CIRCUITS 6.204R (3 class hrs/wk) Term Units 3

ELECTRICAL CIRCUITS LAB. 6.205R (6 lb. hrs/wk) Term Units 2

Electrical theory with an emphasis on the analysis of the characteristics of complex waveform circuits. Covers passive filter networks, bi-directional waveforms, complex waveform, analysis of simple circuits, waveform analysis of series R-C circuits, waveform analysis of series R-L circuits, and waveform analysis of combined networks.

Prerequisites: Third-term standing or approval of department head.

INDUSTRIAL ELECTRONICS I 6.218 (2 class - 3 lab. hrs/wk) Term Units 3

An introductory class and laboratory course covering the principles and applications of motors in industry. Involves a review of the principles of D-C motors and generators, A-C motors and generators, synchronous motors, 3 phase systems, circuit protective and switching equipment.

Prerequisite: Fifth-term standing or approval of department head.

INDUSTRIAL ELECTRONICS II 6.220E (3 class - 3 lab. hrs/wk) Term Units 4

An introductory class and laboratory course covering the principles and applications of electronics in industry. A continuation of Industrial Electronics I with emphasis on the control of motors and power with electronic circuits and devices. Covers relays, timing circuits, photoelectric circuits and components, saturable reactors, and the amplidyne. Also covers welding, x-ray, and ultrasonic equipment.

Prerequisite: Sixth-term standing or approval of department head.

INDUSTRIAL TELEVISION I 6.228 (2 class - 3 lab. hrs/wk) Term Units 3

A theory and lab. course designed to cover television systems, scanning and synchronization, composite video signal, frequency-modulatioon, television receivers and monitors, picture tubes, power supplies, video amplification, practical design or video amplifiers, brightness-control and d-c reinsertion, video detection, automatic gain-control and sync-separation, and deflection oscillator and amplifier circuits.

Prerequisite: Fifth-term standing or approval of department head.

INDUSTRIAL TELEVISION II 6.235 (1 class - 2 lab. hrs/wk) Term Units 1

A theory and lab. course covering closed circuit television systems, picture transmission, scanning process and the composite signal, camera tubes and circuits. camera video amplifier systems, camera sync and deflection generators.

Prerequisite: Sixth-term standing or approval of department head.

OSCILLATOR CIRCUITS AND DESIGN 6.212R (2 class hrs/wk) Term Units 2

OSCILLATOR CIRC. & DES. LAB. 6.213R (6 lab. hrs/wk) Term Units 2

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 Colpitts are analyzzed. Covers negative-resistance oscillators, miscellaneous

sine-wave oscillators non-sinusoidal oscillators including various multi-vibrator circuits. The principles of AM and FM modulation and detection are studied and the theory and application of the cathode-ray oscilloscope is included.

Prerequisite: Fifth-term standing or approval of department head.

VAC. TUBE & TRANSISTOR ANAL. 6.210R (3 class hrs/wk) Term Units 3

VAC. TUBE & TRANS. ANAL. LAB. 6.211R (3 lab. hrs/wk) Term Units 1

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 semiconductor diodes; three element vacuum tubes and transistors; multi-grid tubes and including tetrodes, pentodes and beam-power tubes; special transistors and diodes.

Prerequisite: Third-term standing or approval of department head.

ELECTRONIC DATA PROCESSING 6.240 (3 class hrs/wk) Term Units 3

An introduction to the principles of electronic digital computors. 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, arithmetic element, the memory element, input and output devices, and the control element.

Prerequisite: Fifth-term standing or approval of department head.

MICROWAVES 6.242 (2 class - 3 lab hrs/wk) Term Units 3

An introduction to microwaves. Study of ultra-high frequencies to develop a good foundation for the development of waveguides and microwave circuitry. Covers UHF transmission lines, the application of quarter wave lines, matching stubs, and standing-wave measurements. Transmission of microwave energy through waveguides is analyzed and the TE and TM modes of transmission are studied. Various types of waveguide plumbing including choke joints, directional couplers, flap-attenuators, horns, guide partitions, and flexible waveguides are studied. Includes also cavity resonators, high frequency oscillators, magnetron, and klystron oscillators, the resnatron traveling wave tubes and other high-frequency tubes and devices.

Prerequisite: Sixth-term standing or approval of department head.

SERVO SYSTEMS 6.236R (1 class - 3 lab. hrs/wk) Term Units 2

Principles of servo and data transmission systems with emphasis on fundamentals. Covers control systems and servo-mechanisms, elementary forms of control systems, servo systems, synchros, servo elements, electronic and magnetic amplifiers, direct current servomotors, performance improvers, methods for servos and measurement, and examples of servos and servo systems.

Prerequisite: Fourth-term standing or approval of department head.

WAVE GENERATION AND SHAPING 6.234R

(2 class - 3 lab. hrs/wk) Term Units 3

An introduction to pulse techniques. Gives 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.
Prerequisite: Fourth-term standing or approval of department head.

NOTE: Other course descriptions will be found in the section, "Courses Common to Many Curriculums."

Machine Shop

(2-Year Program)

Instruction and training in the Machine Shop training program are planned to give the basic principles and fundamentals in machine and related metal work. Class instruction in theory with shop practice and related courses in technical fields is provided.

The training offered in this program is directed at preparing a person for entrance occupations in machine shop or related industries.

Opportunities for employment in this field are found in the machine repair and maintenance shops, metal working plants, repair and maintenance shops for mill and construction contractors, and specialty machine shops.

	FALL		WINTER		SPRING	
FIRST YEAR	hrs/wk	units	hrs/wk	units	hrs/wk	units
Machine Shop I, II & III	3	3	3	3	3	3
Machine Shop I, II & III Lab.	12	4	12	4	12	4
Practical Physics I, II & III	5	4	5	4	5	4
Drafting I & II	4	2	4	2		
Mathematics II	3	3				
Welding IA & IB			5	2	5	2
Applied Economics					3	3
	27	16	29	15	27	15
SECOND YEAR						
Machine Shop IV, V & VI	3	3	3	3	3	3
Machine Shop IV, V & VI Lab.	12	4	12	4	12	4
Communication Skills I & II	3	3			3	3
Welding IIA, IIB	5	2			5	2
Introduction to Specifications	3	3				
Mathematics III			3	3		
Project Drafting			10	4		
Health					2	2
Employer-Employee Relations					2	2
	26	15	28	14	27	16

MACHINE SHOP, MAJOR COURSE DESCRIPTIONS

MACHINE SHOP I 3.380E (3 class hrs/wk) Term Units 3

MACHINE SHOP I LAB. 3.381E (12 lab. hrs/wk) Term Units 4

Covers the fundamentals and workable knowledge of industrial processes and machines required of the machinist. The basic fundamentals of layout and machining metal by drilling, turning, and boring, milling, grinding, shaping, planing and slotting are presented. The use and maintenance of machinist hand tools are presented. Safety practices. Use of abrasive wheel, drilling gauge, surface plate and surface gauge.

MACHINE SHOP II 3.382E (3 class hrs/wk) Term Units 3

MACHINE SHOP II LAB. 3.383E (12 lab. hrs/wk) Term Units 4

Covers the use and operation and maintenance of the machine lathe. Instruction in tool grinding, drilling with the lathe, straight turning, taper turning, boring, internal and external thread cutting, and facing cuts.
Prerequisite: Machine Shop I.

MACHINE SHOP III 3.384E (3 class hrs/wk) Term Units 3

MACHINE SHOP III LAB. 3.385E (12 lab. hrs/wk) Term Units 4

Precision lathe work. Instruction in varied uses of lathe. Thread cutting procedures. Methods and procedures for machining on face plate.
Prerequisite: Machine Shop II.

MACHINE SHOP IV 3.386E (3 class hrs/wk) Term Units 3

MACHINE SHOP IV LAB. 3.387E (12 lab. hrs/wk) Term Units 4

Instruction and demonstration in the use and set up of machine shop shapers and planers; calculation of cutting speeds and feed rate for different metals; use of hand devices, fixtures and vises. Instruction in making angular cuts, vertical cuts, horizontal cuts, contour cuts, key way cuts, and slotting. Instruction in machining single and double tongue groove, castiron blocks, dovetail, and sliding joints. Contoured sawing.
Prerequisite: Machine Shop III.

MACHINE SHOP V 3.388E (3 class hrs/wk) Term Units 3

MACHINE SHOP V LAB. 3.389E (12 lab. hrs/wk) Term Units 4

Different types of milling machines and their uses. Types of various sizes of milling machines are presented with instruction in their use and maintenance with instruction on proper safety precautions. The use of milling cutters and cutter holding devices is presented. Instruction is given in speeds for feeds of cutters. Information is given on plane and differential indexing. Theory of gear cutting. Key slotting for woodruff keys. Surface grinding.
Prerequisite: Machine Shop IV.

MACHINE SHOP VI 3.390E (3 class hrs/wk) Term Units 3

MACHINE SHOP VI LAB. 3.391E (12 lab. hrs/wk) Term Units 4

Theory of spur gears, center-to-center distance of gears, chain sprockets, chain drivers, bearings, bronze anti-friction and babbitt, hydraulic power transmission, cylinders and control valves are presented. Layout, machining, and assembly of simple machines. Field trips to machinery manufacturing plants.
Prerequisite: Machine Shop V.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Practical Nursing

(One Year Program)

The purpose of this one year program (48 weeks) in practical nursing is to prepare acceptable female applicants between the ages of 18-50 years to give nursing care to patients who do not need the constant attention of a professional nurse, and to maintain good standards of nursing service within the limits of this education. The program is accredited by the Oregon State Board of Nursing and graduates will be eligible to take the State Board Examination for licensure in Oregon, which may also qualify them for licensure in other states by endorsement. Cost, over the normal tuition, will be about $100.00.

The practical nurse shares in the care of acutely ill patients as a member of the nursing team. She gives care to the convalescent and the chronically ill, she assists in rehabilitation programs, she helps in the prevention of illness, but she always works under the supervision of a licensed physician and/or registered nurse. She may be employed by hospitals, homes for the aged, private homes, doctor's offices, health agencies, and public, private, or industrial institutions.

Applicants to this program must be graduates of an accredited high school or have satisfactorily completed the equivalency test (GED) with an average score of 45 or better. They must be in good physical and mental health as determined by a doctor's examination and they must have suitable personality and character traits necessary for this occupation. For admission a personal interview will be required. and a pre-test may be requested. The final selection of class membership will be made by the recommendations of an interviewing committee from the Advisory Board and the administration of the school. Applications to the course may be made at any time during the year, but only those which are on file before April 30 will be considered for the class starting in the first week of July. Special admissions will be considered on an individual basis.

The curriculum is made up of 600 hours of classroom instruction and 1200 hours of supervised practice in community health facilities. Sacred Heart General Hospital cooperates with the school in giving the students the major portion of their clinical practice, for which they pay the student 75 cents per hour.

CURRICULUM

		Class Hrs.	Lab. Hrs.	Clinic Hrs.	Term Units
5.500	Nursing Skills	100	90		11
5.510	Normal Health Growth & Development	120			10
5.520	Personal & Vocational Relationship	90			8
5.530	Care in Conditions of Illness	120	80		12
*5.540	Medical Clinical Practice			330	7
*5.542	Surgical Clinical Practice			390	8
*5.550	Orthopedic Clinical Practice			90	2
*5.552	Mother and Newborn Clinical Practice			270	6
*5.556	Care of Infants & Children Clinic. Prac.			150	3
			Total Term Units		67

*(48 hours clinical practice for each term unit.)

COURSE DESCRIPTION FOR PRACTICAL NURSING

5.500 NURSING SKILLS (100 class hours, 90 lab. hours) 11 Term Units

This is the study of the basic methods used in caring for the sick in the hospital, office or the home. It includes the study of First Aid, Diversional Activities, Rehabilitation Nursing, and Civil Defense.

5.510 NORMAL HEALTH, GROWTH, AND DEVELOPMENT

(120 class hours) 10 Term Hours

This is the study of normal anatomy, physiology, child development, the aging process, as well as diet and nutrition.

5.520 PERSONAL AND VOCATIONAL RELATIONSHIPS

(90 class hours) 8 Term Units

A study of professional ethics teaches correct manners in dealing with patients, their friends and relatives, as well as with co-workers. It acquaints the student with community resources available to the ill and with the health agencies which may assist patients or which help to maintain health and welfare of the community. The value of professional organizations and the procedure of obtaining licenses or work in other states are learned in this course.

5.530 CARE IN CONDITIONS OF ILLNESS (120 class hours) 12 Term Units

A study of the many forms of disease and other abnormal conditions which produce ill health, considered in relation to the patient care given at the hospital; concerns all age groups, emergency situations, diet therapy, and care of the ill in the home.

5.540 MEDICAL CLINICAL PRACTICE (330 clinical hours) 7 Term Units

Includes medication for women and men. Practice in diet kitchen.

5.542 SURGICAL CLINICAL PRACTICE (390 clinic hours) 8 Term Units

Includes experience on women's gynecology, men's genito-urinary and neuro-surgery services.

5.550 ORTHOPEDIC CLINICAL PRACTICE (90 clinic hours) 2 Term Units

Orthopedics gives experience with patients who have fractures, who need traction, or surgery, on bones and muscles.

5.552 MOTHER AND NEWBORN CLINIC PRACTICE

(270 clinic hours) 6 Term Units

Care of mother in labor, during post partum and the care of the newborn infant.

5.556 CARE OF INFANTS AND CHILDREN CLINICAL PRACTICE

(150 clinic hrs.) 3 Term Units

Care of infants and children includes all illness of infants, and children up to 16 years of age, including isolation.

Total term units—67

Radio Communications (Broadcasting)

(2-Year Program)

The radio communications training program has been planned to give the student the basic instruction and training necessary for entry into the radio broadcasting field.

Class instruction is given in the fundamentals of radio station operation, program planning, studio operation and control room operation, and techniques of announcing, and radio advertising. Instruction is given to prepare a student for the F.C.C. operator's license examination.

Actual practice in radio station broadcasting is provided at the Eugene Public School Radio Station KRVM. Instruction and training in this program are aimed at preparing a person for employment as a combination man, announcer technician, or announcer. Usually employment is obtained in the smaller radio stations upon completion of this training with promotion to larger stations and specialized jobs likely, after gaining some experience.

	FALL		WINTER		SPRING	
FIRST YEAR	hrs/wk	units	hrs/wk	units	hrs/wk	units
Fund. of Radio Broadcasting	3	3				
Fund. of Radio Broadcasting Lab.	12	4				
Electrical Theory (4.920E), (4.922E)	5	4	5	4		
Mathematics II & III	3	3	3	3		
Electrical Drafting	4	2				
Announcing			3	3		
Announcing Techniques Lab.			12	4		
Communication Skills I & II			3	3	3	3
Control Room and Studio Oper.					3	3
Control Rm. & Studio Oper. Lab.					12	4
Electronic Circuits					5	3
Applied Economics					3	3
	27	16	26	17	26	16
SECOND YEAR						
Fund. of Radio Programming	3	3				
Fund. of Radio Prog. Lab.	12	4				
Practical Physics I & II	5	4	5	4		
Radioteleph. Operator's Preparation	5	4				
Radio Advertising			3	3		
Radio Advertising Lab.			12	4		
Salesmanship			3	3		
Audio Systems			5	4		
Adv. Radio Station Operation					3	3
Adv. Radio Station Oper. Lab.					12	4
Psychology of Human Relations					3	3
Employer-Employee Relations	2	2				
Business Records & Reports					3	3
Health					2	2
	27	17	28	18	23	15

NOTE: A second year option in Telecasting is being planned. Courses in Telecasting are contingent on the approval of a pending application for a TV channel and the installation of facilities for telecasting.

RADIO COMMUNICATIONS, MAJOR COURSE DESCRIPTIONS

FUNDAMENTALS OF RADIO BROADCASTING 3.366E
(3 class hrs/wk) Term Units 3

FUND. OF RADIO BROAD. LAB. 3.367E (12 lab. hrs/wk) Term Units 3

History of radio broadcasting. Technical developments. Growth of radio networks. Government's control of broadcasting. Classes of radio stations. Applying for a station license. Radio systems of other countries. F.C.C. Rules and Regulations. Basic station organization. Instruction on control room equipment, and preparation of taped programs.

ANNOUNCING 3.373E (3 class hrs/wk) Term Units 3

ANNOUNCING LAB. 3.374E (12 lab. hrs/wk) Term Units 4

Microphone response patterns, response at various distances. Development of speed and accuracy in reading warmth and friendliness in communication. Meaning of "pattern," "vocalized pause," "articulation," "enunciation," and "diction." Vocabulary building. Words often mispronounced. Rules of pronunciation for modern foreign languages. Newscasts, interviews, panel discussions, and record shows.
Prerequisite: Fundamentals of Radio Broadcasting.

CONTROL ROOM AND STUDIO OPERATION 3.370E
(3 class hrs/wk) Term Units 3

CONTR. RM. & STUDIO OPER. LAB. 3.371E (12 lab. hrs/wk) Term Units 4

Theory of operation of audio console, turntables, transcription arms, tape recorders, microphones, volume level meters. Meaning of such terms as "segue," "board fade," "cross-fade," and "back-cue." Routine non-technical maintenance. Setting up studio for live programs. Handling of large and small groups in studio. Safety precautions. Daybook and program log. Running inventory of taped programs.
Prerequisite: Announcing.

FUNDAMENTALS OF RADIO PROGRAMMING 3.368E
(3 class hrs/wk) Term Units 3

FUND. OF RADIO PROG. LAB. 3.369E (12 lab. hrs/wk) Term Units 4

Historical development. Role of networks in programming. Programming the independent station. The "magazine" concept of network programming. The music and news format. Responsibilities and duties of program director. F.C.C. criteria for acceptable programming. Radio continuities. Use of card file for record library.
Prerequisite: Control Room and Studio Operation.

RADIO ADVERTISING 3.372E (3 class hrs/wk) Term Units 3

RADIO ADVERTISING LAB. 3.375E (12 lab. hrs/wk) Term Units 4

Historical development. Sponsored programs. Role of advertising agencies and networks. Network affiliations. Network option time. National accounts. The transition from sponsored programs to spot advertising. Writing radio copy. Developing local spot sales. Servicing accounts. The sales approach.

ADVANCED RADIO STATION OPERATION 3.376E
(3 class hrs/wk) Term Units 3

ADV. RADIO STATION OPER. LAB. 3.377E (12 lab. hrs/wk) Term Units 4

Fundamental knowledge required to pass F.C.C. operator's license exam. Testing and trouble-shooting malfunctioning transmitter equipment. Problems

RADIOTELEPHONE OPERATOR'S PREPARATION 4.915E

(3 class - 2 lab. hrs/wk) Term Units 4

Rules and regulations of the Federal Communications Commission pertaining to the control of radio signals and the technical requirements of operating personnel. Review of electronics as applied to radio, television, and operating principles involved. Study of questions and answers similar to those given by F.C.C. for radiotelephone license. The course aims to prepare the student for F.C.C. examination.

Prerequisite: Approval of the instructor or fourth term standing.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Radio and Television Repair

(2-Year Program)

Instruction and training are given in the basic fundamentals of trouble-shooting and repair of radio and television sets.

Training is aimed at preparing a person for entry jobs in radio and television repair. Opportunities for employment in this field are offered in specialty radio and television repair shops, sales and service companies, commercial communications installation and service, wired music and installation service, television cable service, electronic equipment installers, radio and television wholesale and service, and factory service.

	FALL		WINTER		SPRING	
FIRST YEAR	hrs/wk	units	hrs/wk	units	hrs/wk	units
Fundamentals of Radio Serv.	3	3				
Fund. of Radio Serv. I Lab.	12	4				
Electrical Theory (4.920E), (4.922E)	5	4	5	4		
Electrical Drafting	4	2				
Mathematics II & III	3	3	3	3		
Radio Service II & III			3	3	3	3
Radio Service II & III Lab.			12	4	12	4
Communication Skills I & II			3	3	3	3
Electronic Circuits					5	3
Applied Economics					3	3
	27	16	26	17	26	16
SECOND YEAR						
Television Service I & II	3	3	3	3		
Television Service I & II Lab.	12	4	12	4		
Slide Rule	2	1				
Practical Physics I & II	5	4	5	4		
Audio Systems			5	3		
Salesmanship			3	3		
Health					2	2
Color Television Service					5	5
Color Television Serv. Lab.					10	3
Employer-Employee Relations	2	2				
Psychology of Human Relations					3	3
Business Records and Reports					3	3
	24	14	28	17	23	16

RADIO AND TELEVISION SERVICE, MAJOR COURSE DESCRIPTIONS

FUNDAMENTALS OF RADIO SERVICE I 3.378E (3 class hrs/wk) Term Units 3
FUND. OF RADIO SERV. I LAB. 3.379E (12 lab. hrs/wk) Term Units 4

Introductory instruction on various types of chassis and component parts. Use of service manuals. Supply sources. Instruction in use of vacuum tube voltmeters and tube-checkers. Basic hand tools and uses. Soldering, brazing and chassis sheet metal work.
Prerequisites: Mathematics II, Electrical Theory I, and Electrical Drafting to be taken concurrently.

RADIO SERVICE II 3.490E (3 class hrs/wk) Term Units 3
RADIO SERVICE LAB. II 3.491E (12 lab. hrs/wk) Term Units 4

Theory to give students an understanding of tube types and construction, AC/DC power supplies, loudspeakers, audio output and amplifier stages, I-F and R-F amplifier, automatic volume controls, converters, mixers and oscillator stages, and radio antennas. Lab. time is provided for demonstrations and experiments to help clarify the principles and procedures covered in class.
Prerequisite: Fundamentals of Radio Service I; Electrical Theory II, and MathIII to be taken concurrently.

RADIO SERVICE III 3.492E (3 class hrs/wk) Term Units 3
RADIO SERVICE LAB. III 3.493E (12 lab. hrs/wk) Term Units 4

Practical radio servicing in which various types of receivers are studied. Service procedures and problems are covered with an introduction to the field of transistors and other semiconductor devices.
Prerequisite: Radio Service II; Electronic Circuits taken concurrently.

TELEVISION SERVICE I 3.494E (3 class hrs/wk) Term Units 3
TELEVISION SERVICE I LAB. 3.495E (12 lab. hrs/wk) Term Units 4

This is a course designed for the servicemen with emphasis placed on actual servicing of television receivers. Substitution of parts is covered. In the first part of the course the following parts of television servicing are covered: Field servicing, which includes the checking of tubes, the location and use of the tube location diagrams, the functional sections, and the adjusting of the controls; low voltage, power supplies, transformer type, and the selenium type; vertical sweep circuits, horizontal output, damper and high voltage stages, horizontal oscillator, AFC stage and the sync-separator section.
Prerequisite: Fourth-term standing or equivalent.

TELEVISION SERVICE II 3.496E (3 class hrs/wk) Term Units 3
TELEVISION SERVICE II LAB. 3.497E (12 lab. hrs/wk) Term Units 4

A continuation of Television Service covering the following subjects: Video-amplifiers, picture tube circuits, the picture tube construction and replacement, detector stage, I-F section AGC systems, tuners, sound section and antenna, types, installation and service notes.

Prerequisite: Television Service I.

COLOR TELEVISION SERVICE 6.914 (5 class hrs/wk) Term Units 5
COLOR TELEVISION SERVICE LAB. 6.915 (10 lab. hrs/wk) Term Units 3

A course based on the modern television systems with emphasis placed on color fundamentals, the color picture tube, the deflection and convergence circuits. The complete receiver is analyzed step by step. The analysis of troubles, alignment, and servicing of the color receiver is extensively covered. Each student is given time for use of color test equipment and for the setup and convergence of the set.

Prerequisite: Television Service II.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Technical Drafting

(2-Year Program)

The training program in Technical Drafting is planned to provide basic instruction and training in drafting techniques with additional specialized instruction on advanced techniques in such areas as machine drafting, electrical drafting, technical illustration, architectural drafting and structural drafting. Related technical courses that give better understanding of planning and production methods are included.

The technical drafting program provides training for those planning to enter employment with industrial or business firms that need skilled technicians who can interpret engineering data and directions, and develop sketches, plans, working drawings and details for production work.

Opportunities for employment in this field are available with construction, industrial manufacturing plants, engineering firms, and city, county, state and federal agencies involved in planning construction projects.

	FALL		WINTER		SPRING	
FIRST YEAR	hrs/wk	units	hrs/wk	units	hrs/wk	units
Drafting I & II	4	2	4	2		
Mathematics II & III	3	3	3	3		
Practical Physics I, II & III	5	4	5	4	5	4
Intro. Fabrication Practices	8	4				
Communication Skills I & II	3	3	3	3		
Applied Economics	3	3				
Project Drafting I & II			10	4	8	3
Technical Report Writing					3	3
Mechanical Drafting					5	2
Employer-Employee Relations					2	2
Advanced Drafting Problems					5	3
	26	19	25	16	28	17
SECOND YEAR						
Advanced Machine Drafting I, II, III	5	2	5	2	5	2
Technical Mathematics I, II & III	4	4	4	4	4	4
Applied Physics I, II & III	5	4	5	4	5	4
Engineering Problems I & II	2	1	2	1		
Electrical Drafting	4	2				
Intro. to Specifications	3	3				
Industrial Safety	3	3				
Prod. Planning & Practices			5	4		
Metals Appl. Trtmnt., Testing					5	3
Technical Illustration					4	2
Architectural Drafting I			5	2		
Structural Drafting					5	2
Health			2	2		
	26	19	28	19	28	17

TECHNICAL DRAFTING, MAJOR COURSE DESCRIPTIONS

INTRODUCTION TO FABRICATION PRACTICES 4.100

(2 class - 6 lab. hrs/wk) Term Units 3

An introductory course of observation for drafting. Students will be assigned drawing projects and will view the physical object of a drawing in order to develop visualization of subjects on the drafting board. Frequent field trips will be made to observe modern methods of manufacturing, casting, forging, construction and assembly. Emphasis will be placed on materials, methods of fabrication, glossary, scaling for drawing, and visualization of fabricated objects or assemblies.

Prerequisite: Drafting 4.101, which may be taken concurrently.

ADVANCED DRAFTING PROBLEMS 4.115 (2 class - 3 lab. hrs/wk) Term Units 3

Survey of practical descriptive geometry. Theory of auxiliary views, true length, shape and angles developed from point-line-plane through use of revolution. Elements of simple vector problems. Emphasis on application of principles to problems commonly encountered by draftsmen.

Prerequisite: Drafting 4.105 and Mathematics 4.204 or approval of department head.

PROJECT DRAFTING I 4.119 (1 class - 9 lab. hrs/wk) Term Units 4

Working conditions similar to industrial drafting room. Students assigned projects that include one or more drawings requiring skills previously acquired. Instruction will include the methods for detail layout, reading specifications, common materials of fabrication, checking and back-checking drawings, and material take-offs. Discussion will cover the administration of the drafting room, issuing drawings, and revision. Speed and accuracy will be considered of paramount importance.

Prerequisite: Drafting II which may be taken concurrently.

PROJECT DRAFTING II 4.121 (8 lab. hrs/wk) Term Units 3

Assigned projects (requiring use of all previously learned skills and principles) that will familiarize students 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, take-offs. Drafting room standards of various local industries will be discussed. Speed and accuracy will be considered of paramount importance.

Prerequisite: Project Drafting I or equivalent.

ADVANCED MACHINE DRAFTING I 4.117 (5 lab. hrs/wk) Term Units 2

This course extends background in the area of machine drafting. It will include technical sketching and shape description, multi-view projections, sectional views, and revolutions.

Prerequisite: Second-year standing or approval of department head.

ADVANCED MACHINE DRAFTING II 4.123 (5 lab. hrs/wk) Term Units 2

Advanced studies in the major areas of machine drafting. The area covered will include threads and fasteners, assembly drawings, pictorial drawings, and engineering graphics.

Prerequisite: Advanced Machine Drafting I.

ADVANCED MACHINE DRAFTING III 4.125 (5 lab. hrs/wk) Term Units 2

This course presents practical drafting problems requiring the application of previously learned principles of machine drafting. This will include advanced work on cams, gears, and the relationships of drafting to shop processes.

Prerequisite: Advanced Machine Drafting II.

TECHNICAL ILLUSTRATION 4.127 (4 lab. hrs/wk) Term Units 2

Techniques required for modern technical illustrations and drawings such as those found in catalogs, published presentation or exploded drawings. Both freehand drawing and template implements, pencils, brush and technique of light and shadow are discussed.

Prerequisite: Second-year standing or approval of department head.

ARCHITECTURAL DRAFTING 4.107 (5 lab. hrs/wk) Term Units 2

An advanced course emphasizing architectural drawing techniques, methods and procedures in architectural drawings, lettering, layout and design of the standard drawings (construction and display), and rendering the display drawing. Carpentry and masonry principles and construction drawing are included. Design principles such as standard stock sizes, strength of joints, maximum loads and spans, and material weights will be discussed. Application consists of preparing sets of working drawings of residential and commercial buildings.

Prerequisite: Second-year standing or approval of department head.

PRODUCTION PLANNING AND PRACTICES 4.104
(3 class - 2 lab. hrs/wk) Term Units 4

Elements of production control and planning such as: machine routing, steps of fabrication, efficient shop layout, materials handling, storage problems, and production records.

Prerequisite: Second-year standing or approval of department head.

METALS APPLICATION TREATMENT AND TESTING 4.106
(2 class - 3 lab. hrs/wk) Term Units 3

A survey in metallurgy covering the common materials of fabrication, metals coding systems, characteristics, methods of refining and alloying and methods of treating. The goal of the course is to acquaint the student with the various types of and the working of metals used by industry.

Prerequisite: Second-year standing or approval by department head.

NOTE: Other course descriptions will be found in the section "Courses Common to Technical-Vocational Curriculums."

Federal Manpower Development and Training Act Programs

Applicants for training under the Federal Manpower Development and Training Act must qualify under the provisions of this act. Interested persons should inquire at a local office of the Oregon State Employment Service to determine if they are eligible for the benefits of the program.

FORESTRY TECHNICIAN

This curriculum provides education and training to qualify a person as a Forestry Technician. A Forestry Technician is competent to handle responsibilities intermediate between those appropriate to the skilled worker and those of the professional forester. He directs the activities of the former under the supervision of the latter; in other words, he sees that plans prepared by professional foresters are efficiently executed. One year of classroom instruction and field work is offered.

Students completing the Forestry Technician Program are placed as Forestry Technicians with state and federal agencies, and private logging and lumber manufacturing operations.

	FALL		WINTER		SPRING	
	hrs/wk	units	hrs/wk	units	hrs/wk	units
Communication Skills I & II	3	3	3	3		
Mathematics II & II	3	3	3	3		
Forestry Drafting	6	2				
Power Tools	6	3				
Silvicultural Practices	4	2				
General Forestry	3	3				
Plane Surveying I & II	5	3	5	3		
Forest Surveying					2	2
Applied Economics			3	3		
Forest Mensuration I & II			2	2	2	2
Forest Products			2	2		
Forest Field Operations I & II			9	3	15	5
Recreational Structures			3	2		
Technical Report Writing					3	3
Elements of Supervision					3	3
Fire Control					2	2
Logging Planning					2	2
Tree Identification					1	1
	30	19	30	21	30	20

FORESTRY TECHNICIAN COURSE DESCRIPTIONS

COMMUNICATION SKILLS I & II 1.100, 1.102

(See courses common to Technical-Vocational curriculums.)

MATHEMATICS II 4.202

(See courses common to Technical-Vocational curriculums.)

MATHEMATICS III 4.204

(See courses common to Technical-Vocational curriculums.)

FORESTRY DRAFTING 6.650 (6 lab. hrs/wk) Term Units 2

An introduction to general drafting with emphasis on use of tools and drafting as related to Forestry. Maps and mapping are introduced.
Prerequisite: Forestry Aid Student.

POWER TOOLS & PUMPS 6.621 (2 class - 4 lab. hrs/wk) Term Units 3

The study of First Aid and Safety and the study of the construction, use and maintenance of the common power tools used by the forester; including the power saw, brush saw, hand pump (Smith, Indian), engine powered pumps (Pacific Marine), as well as shallow well and deep well centrifugal and jet pumps. The use, care and maintenance of automobiles, trucks, tractors, and "tote-goats" is included.
Prerequisite: Forestry Aid Student.

SILVICULTURAL PRACTICES 6.615 (1 class - 3 lab. hrs/wk) Term Units 2

A course designed to introduce students to the theory of Silviculture, giving them a general understanding of the growth principles and cutting methods for our commercial forest species.
Prerequisite: General Forestry.

GENERAL FORESTRY 6.601 (3 class hrs/wk) Term Units 3

This course introduces the student to the whole field of Forestry—a survey of the jobs involved and the resources worked with.
Prerequisite: None.

PLANE SURVEYING I 6.101

(See description in Civil and Structural Engineering Technician Curriculum.)

PLANE SURVEYING II 6.103

(See description in Civil and Structural Engineering Technician Curriculum.)

FOREST SURVEYING 6.628 (2 class hrs/wk) Term Units 2

Forest Surveying with emphasis on aerial photos and topographic surveying and covering the public land surveys.
Prerequisite: Surveying I & II.

APPLIED ECONOMIC 1.506 (3 class hrs/wk) Term Units 3

Industrial Ecnoomics deals with the principles involved in the operation of the American economic system. The role of business and industry in the total economy is studied. Basic economic principles are applied to the relationship of employer and employee. Topics considered include historic trends, business organization, price and competition, inperfect competition and monopoly, price levels, business cycles, taxation, labor unions, management associations, labor-management relations, and social and private security.

FOREST MENSURATION I 6.625 (2 class hrs/wk) Term Units 2

A general course in Forest Measurements starting with log scaling, going into log grading, and finally cruising methods. The necessary theory will be presented along with practical work in each field.

Prerequisite: Math II and Math III taken concurrently, and General Forestry.

FOREST MENSURATION II 6.626 (2 class hrs/wk) Term Units 2

A general course in Forest Measurements starting with log scaling, going into log grading, and finally cruising methods. The necessary theory will be presented along with practical work in each field.

Prerequisite: Math II & II and Forest Mensuration I.

FOREST PRODUCTS 6.605 (2 class hrs/wk) Term Units 2

The study of Forest Products and how they are produced.

Prerequisite: None.

FOREST FIELD OPERATIONS I 6.635 (9 lab. hrs/wk) Term Units 3

FOREST FIELD OPERATIONS II 6.636 (15 lab. hrs/wk) Term Units 5

Field work for theory courses in Forestry. Lab work is scheduled to coincide with theory courses in Forestry.

RECREATIONAL STRUCTURES 6.655 (1 class - 2 lab. hrs/wk) Term Units 2

A course in the locating, planning methods, maintenance, and construction practices used in public forest recreation.

Prerequisite: Forestry aid student.

TECHNICAL REPORT WRITING 6.126

(See courses common to Technical-Vocational curriculums.)

ELEMENTS OF SUPERVISION 9.500 (3 class hrs/wk) Term Units 3

To give the student a basic understanding of leadership from the crew boss level up.

Prerequisite: Third term Forestry Aide Student.

FIRE CONTROL 6.640 (2 class hrs/wk) Term Units 2

A course covering forest fire behavior, ignition, and spread of forest fires and factors by which they are influenced; methods of fire prevention and suppression: forest fire control organizations and equipment are studied. Transportation, communications, and the operation of forest fire equipment are covered.

Prerequisite: General Forestry, Forestry Aide Student.

LOGGING PLANNING 6.631 (2 class hrs/wk) Term Units 2

This course will instruct the student in the field procedures necessary in Logging Planning. An undeveloped tract of land will be studied from acquisition to prepared road system and logging plan.

Prerequisites: Forestry Aide Student, Surveying I & II, General Forestry, Forest Surveying and Mensuration II concurrently.

TREE IDENTIFICATION 6.645 (1 class hrs/wk) Term Units 1

A course in tree and shrub identification which will cover the western commercial timber species and many of the native non-commercial trees and shrubs.

Prerequisites: None.

DENTAL ASSISTANT

Education and training will be provided to qualify a person for positions in dental offices and dental clinics.

The student will be given courses of study and practice in office responsibilities and primary functions in assisting the dentist at the chairside.

Opportunities for employment of trained dental assistants are increasing. Dental assistants usually work 40 hours a week on a year around basis, with time allowed for vacation.

Educational preparation will include one school year of study courses and practice.

	FALL		WINTER		SPRING	
	hrs/wk	units	hrs/wk	units	*tot. hrs	units
Introduction to Practice	7	6				
History, Ethics and Jurisprudence	2	2				
Orientation for Dental Assistants	4	4				
Patient Education	1	1				
Dental Sciences	5	5				
Gross Anat., Physiology, Histology	1½	1				
Dental Anatomy	1½	1				
X-Ray I, II and II	4	3	4	2	24	2
Typing I & II	2	2	3	3		
Communication for Dental Assist.	2	2				
Practice and Procedures			12	8		
Patient Mgnt. & Applied Psychology			4	4		
Pathology			2	2		
First Aid			1	1		
Dental Records and Reports			4	3		
Tech. Report Writing, Dental Assistants					36	3
Dental Accounting					60	5
Clinical Practice					240	9
	30	27	30	23	360	19

* Total hours of class or clinical practice during term.

DENTAL ASSISTANT MAJOR COURSE DESCRIPTIONS

INTRODUCTION TO PRACTICE 5.401 (5 class - 2 lab. hrs/wk) Term Units 6

The purpose of dentistry, the roles of the dentist and all auxiliary personnel. The requirements, education, need and demand, general description and characteristics of the position; areas of service and all duties pertaining to the profession of dental assisting. An introduction into all the phases of dentistry.

HISTORY, ETHICS AND JURISPRUDENCE 5.503
(2 class hrs/wk) Term Units 2

A study of the history of dentistry, the ethics of the profession, and the laws governing the profession.

ORIENTATION FOR DENTAL ASSISTANTS 5.405

(3 class - 1 lab. hrs/wk) Term Units 4

A complete breakdown and study of equipment, instruments and their care. The study of dental materials, structure and properties and manipulation. The responsibilities, types, storage, care, ordering and procedures of dental supplies.

PATIENT EDUCATION 5.407 (1 class hr/wk) Term Units 1

The study of dental health education objectives including preventative dentsitry, technique of prophylaxis, operative, corrective and restorative precedures related to prevention, visual aids, to mention a few.

DENTAL SCIENCES 5.409, 5.410, 5.411 (4 class - 1 lab. hrs/wk) Term Units 5

This includes a study of nutrition, 12 term hours; and 12 term hours of pharmacology; the general aspects, sources, administration of drugs, prescribing, types and purposes and compositions of drugs. 36 hours bacteriology, hygiene and labs.; a thorough study of bacteriology and microbiology. The importance of this study in relation to dentistry. This includes many labs and an intensive study into control of bacteria.

GROSS ANATOMY, PHYSIOLOGY AND HISTOLOGY 5.413

(1 class - ½ lab. hrs/wk) Term Units 1

An extensive study into functions, systems, cells, tissues and organs.

PATIENT MANAGEMENT AND APPLIED PSYCHOLOGY 5.433

(4 class hrs/wk) Term Units 4

Public relations, maturation of patients, development of the office personnel's contact with public, and personality improvement. The basics of applied psychology and the patients, particularly with children, are stressed.

Prerequisite: Second term standing.

PATHOLOGY 5.435 (1 class - 1 lab. hrs/wk) Term Units 2

The study of oral pathology. The normal tissues, deceased, injured, developmental anomalies, dental caries, abcess, cysts are a few of the areas studied.

Prerequisite: Second term standing.

FIRST AID 5.437 (1 class hrs/wk) Term Units 1

The why and how of first aid. Recognizing emergencies and knowing how to care for them, such as, shock, hemorrhage, respiratory failures and asphyxis, cardiac failures, convulsions, falls, etc.

DENTAL RECORDS AND REPORTS 5.439 (2 class - 2 lab. hrs/wk) Term Units 3

A complete background of dental records and reports. The importance and neccesity of knowing all the various phases of record systems, patient records, case histories, examinations, financial reports, statements, collections, credit, recall systems, insurance policies, filing and accounts.

Prerequisite: Second term standing.

TECHNICAL REPORT WRITING FOR DENTAL ASSISTANTS 6.126

(3 class hrs/wk) Term Units 3

Principles of composition, gathering data, and basic forms of writing reports are covered. This is a follow-up of communication skills.

Prerequisite: Third term standing.

DENTAL ACCOUNTING 5.457 (5 class hrs/wk) Term Units 5

The basic principles of bookkeeping and accounting applied to the dental field; including the bookkeeping cycle, journals and ledgers, special journals and subsidiary ledgers, and financial statements.

Prerequisite: Third term standing.

DENTAL ANATOMY, PHYSIOLOGY AND HISTOLOGY 5.415
(1 class - ½ lab. hrs/wk) Term Units 1

The study of the oral cavity, joints, supporting structures, muscles, glands, teeth and their structures, functions, classifications and the nerves relating to the oral cavity.

X-RAY I 5.417 (2 class - 2 lab. hrs/wk) Term Units 3

The complete theory background of x-ray, terminology, safety factors, biological effects of radiation, darkroom procedures, operation of the dental x-ray machine including breakdown of the functions, and the legal aspects pertaining to dental x-ray films.

X-RAY II 5.417 (4 lab. hrs/wk) Term Units 2

Continuation of X-Ray I including student requirements in full mouth rentgenograms to be completed by the end of second term.

Prerequisite: X-Ray I.

X-RAY III 5.417 (1 class - 1 lab hrs/wk) Term Units 2

Continuation of X-Ray I and II.

Prerequisite: X-Ray II.

COMMUNICATIONS FOR DENTAL ASSISTANTS 5.419
(2 class hrs/wk) Term Units 2

This course is designed to develop the basic skills in communication, reading, writing, listening and speaking. The importance of these skills in the dental professional field is stressed.

PRACTICE AND PROCEDURES 5.431 (6 class - 6 lab. hrs/wk) Term Units 8

Oral diagnosis and treatment planning, assisting in operative procedures, endodontic therapy, oral surgery and anesthesia, pedodontics, orthodontics, inlay investments and casting procedures, crown and bridge prothodontics and Prosthodontics are all thoroughly covered.

Prerequisite: Second term standing.

CLINICAL PRACTICE 5.457, 5.461 Term Units 9

Six weeks of practical internship in private offices followed by three intensive weeks of classroom follow-up before graduation.

Prerequisite: Third term standing.

TYPING I 2.101 (2 class hrs/wk) Term Units 2

(See Business Education.)

TYPING II 2.102 (3 class hrs/wk) Term Units 3

(See Business Education.)

Courses Common to Technical-Vocational Curriculums

COMMUNICATION COURSES

COMMUNICATION SKILLS I 1.100 (3 class hrs/wk) Term Units 3

Course is designed to improve the student's speaking and writing skills and covers the four basic skills—reading, speaking, writing, and listening. The practical phase of communication problems is kept in the foreground. Contemporary speeches, books, magazines, and newspapers are the source materials for oral and written assignments. Problems in outlining, note-taking, summarizing report making, and in conventional usages in mechanics and grammar are considered.

Prerequisite: High School English or equivalent.

COMMUNICATION SKILLS II 1.102 (3 class hrs/wk) Term Units 3

Continued practice given on a graduated scale in: Developing reports, giving talks, taking part in conferences; reading, analyzing, and discussing both general and technical periodicals; and handling representative forms of business writing.

Prerequisite: Communication Skills 1.100 or equivalent.

TECHNICAL REPORT WRITIING 6.126 (3 class hrs/wk) Term Units 3

Principles of composition, gathering data, and basic forms of writing reports are covered.

Prerequisite: Communication Skills I or equivalent.

MATHEMATICS COURSES

MATHEMATICS I 4.200 (3 class hrs/wk) No Credit

This is a course in practical mathematics and includes problems composed of whole numbers, fractions, measurements, formulas, graphs, and roots. Review of general mathematics.

Prerequisite: Ability to profit from instruction.

MATHEMATICS II 4.202 (3 class hrs/wk) Term Units 3

Mathematics II includes the fundamentals of applied algebra and applied geometry, including symbols, equations, ratio and proportion, exponents, radicals, formulas, geometric lines and shapes, common geometric constructions, and introductory applied trigonometry.

Prerequisite: Mathematics 4.200 or equivalent.

MATHEMATICS III 4.204 (3 class hrs/wk) Term Units 3

The third term concentrates on problems encountered by workers in industrial occupations. It applies arithmetic, algebra, geometry, trigonometry, and their various phases to jobs encountered. Emphasis is on actual problem-solving aspects.

Prerequisite: Mathematics 4.202 or equivalent.

SLIDE RULE 4.208 (2 class hrs/wk) Term Units 1

Basic course in the theory and operation of slide rule, including multiplication, division, powers and roots, trigonometric functions and logarithms.

Prerequisite: Mathematics II (4.202) and II (4.204) or the equivalent.

ELECTRICAL MATHEMATICS 6.115 (4 class hrs/wk) Term Units 4

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.
Prerequisite: Technical Mathematics 6.266 or equivalent.

ENGINEERING PROBLEMS I 6.135 (2 lab hrs/wk) Term Units 1

A study in engineering problems is one in which the student is instructed in the development of accurate, effective, and efficient work and study habits. The course is intended to train the student to organize his analyses and record them in clear, concise forms so that they can be interpreted.
Prerequisite: One year of high school algebra or equivalent.

ENGINEERING PROBLEMS II 6.136 (2 lab. hrs/wk) Term Units 1

This course aims to develop the skill of gathering together and sorting research results and problem-solving records into logical summation. Mathematical and graphical analysis of data will be emphasized in the presentation of information in the report.
Prerequisite: Engineering Problems 6.135.

TECHNICAL MATHEMATICS I 6.261 (4 class hrs/wk) Term Units 4

This is an applied course in mathematics on the technician level covering the slide rule, tables and interpolation, additional applications in geometry, a review of algebraic operations, systems of linear equations, functions and graphs, advanced applications of exponents and radicals, quadratic equations in one unknown, and introductory trigonometry.
Prerequisite: High shool algebra or equivalent.

TECHNICAL MATHEMATICS II 6.262 (4 class hrs/wk) Term Units 4

Mathematics on the technician level including logarithms, right and oblique triangle problem-solving, trigonometric applications, vectors, trigonometric formulas, identities, and equations, and graphs of trigonometric functions.
Prerequisite: Technical Mathematics 6.260 or equivalent.

TECHNICAL MATHEMATICS III 6.266 (4 class hrs/wk) Term Units 4

Mathematics on the technician level covering simultaneous quadratic equations, ratio and proportion, binominal theorem, arithmetic and geometric progressions, exponential functions, complex notation, and vector algebra.
Prerequisite: Technical Mathematics 6.262 or equivalent.

PRACTICAL DESCRIPTIVE GEOMETRY 6.127 (4 lab. hrs/wk) Term Units 2

This course gives a brief review of advanced drafting problems and takes the student further into the field of descriptive geometric principles.
Prerequisite: Third-term standing or approval of department head.

SCIENCE COURSES

PRACTICAL PHYSICS I 4.300 (3 class - 2 lab. hrs/wk) Term Units 4

An introductory course in practical physics covering matter, measurements, mechanics and machines. Lab. time is provided for demonstrations and experiments to further clarify the principles and procedures covered in class.
Prerequisite: Mathematics 4.200 or equivalent.

PRACTICAL PHYSICS II 4.302 (3 class - 2 lab. hrs/wk) Term Units 4

An introductory course in practical physics covering heat, light and sound. Lab. time is provided for demonstrations and experiments to clarify the principles and procedures covered in class.

Prerequisite: Mathematics 4.202 or equivalent.

PRACTICAL PHYSICS III 4.304 (3 class - 2lab. hrs/wk) Term Units 4

This is an introductory course in practical physics covering magnetism and electricity. Lab. time is provided for demonstrations and experiments to clarify the principles and procedures covered in class.

Prerequisite: Mathematics 4.202 or equivalent.

APPLIED PHYSICS I 6.370 (3 class - 2 lab. hrs/wk) Term Units 4

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

Prerequisite: Technical Mathematics 6.260 or approval of department head.

APPLIED PHYSICS II 6.371 (3 class - 2 lab. hrs/wk) Term Units 4

Covers the principles of vectors, kinematics, work-power-energy machines and angular vectors. Lab. time is provided for demonstrations and experiments covering principles and procedures covered in class.

Prerequisite: Applied Physics 6.362R or approval of department head.

APPLIED PHYSICS III 6.366 (3 class - 2 lab. hrs/wk) Term Units 4

Magnetism and electricity, including basic electric currents, sources, electromagnetism, alternating current, generators, and motors. Lab. time is provided for demonstrations and experiments to clarify principles and procedures covered in class.

Prerequisite: Technical Mathematics 6.262 or equivalent.

DRAFTING COURSES

DRAFTING I 4.101 (4 lab. hrs/wk) Term Units 2

A fundamental course in drafting designed to give the student a basic understanding of drawing techniques. Emphasis is placed on the application of drafting instruments, standard orthographic projection, layout procedures and ASA approved lettering techniques. Drawing techniques such as geometric construction, selection of views, sectional and auxiliary views, revolutions, threads, and standard dimensioning practices will be covered.

Prerequisite: High school algebra or approval of department head. Mathematics 4.202 may be taken concurrently.

INTRODUCTION TO SPECIFICATIONS 4.102 (3 class hrs/wk) Term Units 3

Common usage and practice in the preparation and interpretation of specifications. Examination of existing specifications covering current subjects with practical problems.

Prerequisite: Second-year standing or approval of department head.

ELECTRICAL DRAFTING 4.103 (4 lab. hrs/wk) Term Units 2

Techniques required for the electrical and electronic fields. It includes charts, graphs, chassis layout, schematic and pictorial wiring diagrams, routing diagrams (power distribution, lighting, conduit and ducts, underground wiring and ducts) and location drawings. Standard schematics such as motor starters, annunciators, AM and EEIA-approved symbols will be used.
Prerequisite: Drafting I or equivalent.

DRAFTING II 4.105 (4 lab. hrs/wk) Term Units 2

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 equivalent.

MECHANICAL DRAFTING 4.109 (5 lab. hrs/wk) Term Units 2

An advanced course emphasizing mechanical design. It includes sketching, cam and gear layout, isometric drawings, welding drawings, tolerances and allowances, and tool jig drawings. Simplified drawing technique will be covered and general shop procedures will be discussed. Emphasis will be placed on the industrial requirements of drawing.
Prerequisite: Third-term standing or approval of department head.

STRUCTURAL DRAFTING 4.111 (5 lab. hrs/wk) Term Units 2

An advanced course emphasizing civil and structural drafting procedures. Includes the function and design of: general plans, stress diagrams, shop drawings, foundation or masonry plans, erection diagrams, falsework plans, and sheet metal layout. Bills of materials, rivet lists, drawing indexes, design considerations, and strength of joints will be covered. The student will become acquainted with structural shapes such as: bridges, dams, and earthwork constructions.
Prerequisite: Sixth-term standing or approval of department head.

PROJECT DRAFTING I 4.119 (1 class - 9 lab. hrs/wk) Term Units 4

Working conditions similar to industrial drafting room. Students assigned projects that include one or more drawings requiring skills previously acquired. Instruction will include the methods for detail layout, reading specifications, common materials of fabrication, checking and back-checking drawings, and material take-offs. Discussion will cover the administration of the drafting room, issuing drawings, and revision. Speed and accuracy will be considered of paramount importance.
Prerequisite: Drafting II which may be taken concurrently.

MAPPING AND PLATTING 4.131 (1 class - 7 lab. hrs/wk) Term Units 3

Principles of map platting, using field survey data. Office procedure; basic earthwork computation, legal description, and subdivision planning.
Prerequisite: Fourth-term standing or approval of department head.

BLUEPRINT READING AND SKETCHING 3.339 (3 lab. hrs/wk) Term Units 1

Introductory course to Blueprint Reading and Sketching covering the alphabetic lines, three-view drawings, arrangement of views, two-view, one-view, and auxiliary views. Dimensions and notes, shop sketching, freehand lettering and orthographic sketching are included. Students develop the ability to read, interpret blueprints, and make simple shop sketches without the use of instruments.

BUSINESS COURSES

SALESMANSHIP 2.316E (3 class hrs/wk) Term Units 3

Course includes human relations, characteristics of the customer, buying motives, approach, presentation, demonstration, overcoming objections and excuses, closing the sale and objective selling. Each student is given the opportunity to develop a sales approach and present and analyze a sales presentation.

BUSINESS RECORDS AND REPORTS 2.500E (3 class hrs/wk) Term Units 3

This course covers the information regarding business reports that are needed for pricing, accounting records, profit and loss statements, reports for local, state, and federal governments in such matters as Social Security, withholding taxes, Industrial Accident, licensing requirements. Information is also included on salary records, employee records, procedures for making out orders, charges, billings, inventory control, and other administrative details.

Prerequisite: Second-year standing.

ELECTRICAL-ELECTRONIC COURSES

ELECTRONIC CIRCUITS 4.900 (2 class - 3 lab. hrs/wk) Term Units 3

Instruction in vacuum tubes, electron and electron emission, diodes, triodes, and multi-electric tubes. Theory of operation with demonstrations and lab. experiments in practical application of principles covered. Includes preparation for F.C.C. Radiotelephone operator's license examination.

Prerequisite: Electrical Theory II.

AUDIO SYSTEMS 4.912 (2 class - 3 lab. hrs/wk) Term Units 3

Theory and principles of high fidelity systems, components, amplifiers, pick-ups and loudspeakers, AM and FM tuners, record players, tape recorders, intercommunication systems. Servicing audio systems. Demonstrations and lab. practice.

Prerequisite: Electronic Circuits.

ELECTRICAL THEORY (DC) I 4.920E (3 class - 2 lab. hrs/wk) Term Units 4

Basic theory of electricity. Kinds of current, Ohm's law and electrical units. Batteries and how they function. Electrical circuit function of conductors, insulators, resistors, rheostats, etc. Magnetism theory and functions of magnetism. Course covers fundamentals of direct current.

Prerequisite: High school algebra or Math II.

ELECTRICAL THEORY (AC) II 4.922E (3 class - 2 lab. hrs/wk) Term Units 4

Electrical measurement including use of ammeters, voltmeter, dynamometer, etc. Introduction to A.C., Faraday's discovery, generator function, sine wave and transformers. Inductance principles including Lenz's law, self inductance, inductive reactance, high frequency coils and use of inductors. Capacitance action, types of capacitors and how to measure.

Prerequisite: Electrical Theory I 4.920E or comparable preparation.

ELECTRICAL THEORY (DC) I 6.200 (3 class - 2 lab. hrs/wk) Term Units 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, series-parrallel circuit analysis, complex unidirectional-current circuits, the phenomena of magnetism and electromagnetism, inductance and its characteristics, characteristics of capacitance, and electrical measurement instruments.

Prerequisite: High school algebra or equivalent.

ELECTRICAL THEORY (AC) II 6.202 (3 class - 2 lab. hrs/wk) Term Units 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 analysis of the sine wave, series circuits with a sine wave input, series resonance, parallel circuits with a sine wave input, parallel resonance, the non-resonant and the resonant transformer and attenuators and pads.

Prerequisite: Second-term standing or approval of department head.

ELECTRICAL CIRCUITS 6.204R (3 class hrs/wk) Term Units 3

A continuation of electrical theory with an emphasis on the analysis of the characteristics of complex waveform circuits. Covers passive filter networks, bi-directional waveforms, complex waveform, analysis of simple circuits, waveform analysis of series R-C circuits, waveform analysis of series R-L circuits, and waveform analysis of combined networks.

Prerequisite: Third-term standing or approval of department head.

MECHANIC COURSES

MACHINE SHOP ORIENTATION 3.392E (2 class - 3 lab. hrs/wk) Term Units 3

A course to acquaint the student with machine shop tools, materials, and their maintenance and use. Basic information presented on measuring tools, bench tools, machine tools and their use. Information on machine shop materials, and layout of simple projects.

MACHINE TOOLS OPERATION 3.393E (2 class - 3 lab. hrs/wk) Term Units 3

Instruction in set-up and operation of machine tools such as lathes, shapers, milling machines, drill press and grinders.

Prerequisite: Machine Shop Orientation.

MACHINE SHOP PROJECTS 3.394E (2 class - 3 lab. hrs/wk) Term Units 3

Instruction in production development from blueprint to layout, to machine, to bench work. Practice development of a machine project.

Prerequisite: Machine Tool Operation.

WELDING IA (4.150), IB (4.151)

(IA: 1 class - 4 lab.; IB: 1 class - 4 lab. hrs/wk) Term Units 2 each

This course to be taken in two terms of 1 class and 4 lab. hours per week, as Welding IA (2 term units) and Welding IB (2 term units). Set-up and operation of oxyacetylene and electric arc welding equipment. Demonstrations and practice in welding, brazing, and soldering ferrous and non-ferrous metals and their alloys. Various types of welds are made and tested. Technical information is correlated with actual practice to provide the student with an understanding of the composition of the various metals and methods of fabrication used in construction, maintenance, and repair industries.

WELDING IIA (4.156), IIB (4.158)

(IIA: 1 class - 4 lab.; IIB 1 class - 4 lab. hrs/wk) Term Units 2 each

This course to be taken in two terms of 1 class and 4 lab. hours per week. The course includes advanced oxyacetylene and electric arc welding. Information and instruction on the manufacture of metals, advanced heat treating of metals, advanced cutting applications, technical information are correlated with the shop practices to understand the use and application of welding in various trades and industry.

Prerequisite: Welding IA and IB.

GENERAL EDUCATION COURSES

APPLIED ECONOMICS 1.506 (3 class hrs/wk) Term Units 3

Industrial Economics deals with the principles involved in the operation of the American economic system. The role of business and industry in the total economy is studied. Basic economic principles are applied to the relationship of employer and employee. Topics considered include historic trends, business organization, price and competition, imperfect competition and monopoly, price levels, business cycles, taxation, labor unions, management associations, labor-management relations, labor legislation, and social and private security.

HEALTH EDUCATION 1.605 (2 class hrs/wk) Term Units 2

This course is designed to provide individuals with select health and physical education activities through participation or study for the purpose of adding to their knowledge and appreciation of desirable mental and physical health practices as they relate to the individual and the community.

PSYCHOLOGY OF HUMAN RELATIONS 1.608 (3 class hrs/wk) Term Units 3

This course is a study of the principles of psychology that will be of assistance in the understanding of personal relationships on the job. Motivations, feeling, emotions, and principles of learning are considered with particular reference to "on-the-job" problems. Topics studied are: Job Placement Tests, Employment Selections, Supervision, Job Satisfaction and Industrial Conflicts as they relate to the work situation. Attention is also given to personal grooming and cultural consideration in applying for and retaining employment.

INDUSTRIAL SAFETY 4.108 (3 class hrs/wk) Term Units 3

A survey of the principles of safety in industry, including safety codes, personnel considerations and safety practices, relating to design work, materials handling, and equipment.

Prerequisite: Second-year standing or approval of department head.

EMPLOYER-EMPLOYEE RELATIONS 4.500 (2 class hrs/wk) Term Units 2

The objective of this course is to provide an understanding of the rights and responsibilities of employees and employers. A study of population, economic and unemployment trends, hours and working conditions, role played by labor organizations, government laws covering collective bargaining, state and federal laws, unemployment assistance, employee-employee and employee-employer relations are covered.

Liberal Arts and Pre-Professional Programs

The liberal arts and pre-professional courses are offered for students desiring lower division collegiate courses which may be transferred to four year colleges or universities.

Courses are offered that will make it possible to plan the first two years of a collegiate degree program.

The liberal arts courses offered are those which will make it possible for the student to meet lower division requirements in sequences for the Humanities, Social Sciences and Sciences.

Students who have decided upon a professional career should get the counselor's advice in selecting courses that are required for the career field selected.

Most institutions of higher education in Oregon will accept no more than 93 term hours of transfer credit to apply to a baccalaureate degree. Courses taken for transfer credit should be required courses in the field that the student plans to earn his baccalaureate degree. Elective courses may offer some opportunity to expand knowledge but may not be accepted for degree requirements.

Lower division requirements to enter higher institutions in Oregon to complete a bachelor's degree are as follows:

(1) ENGLISH:
English Composition (Wr III, Wr 112, Wr 113)—9 term hours

(2) PHYSICAL EDUCATION:
5 terms

(3) HEALTH EDUCATION:
HE 250—2 term hours

(4) GROUP REQUIREMENTS:
Four sequences in liberal arts courses numbered from 100 to 110, or 200 to 210, including one sequence in each of three groups (arts and letters, social science, science) and a second sequence in any one of three groups; for liberal arts majors, two additional sequences.

When two sequences are taken in social science or in science, the sequences must be in different departments.

(5) Completion of 93 term hours with G.P.A. minimum of 2.00.

COURSES

	Fall	Winter	Spring
MATHEMATICS			
Math 100—Int. Algebra	4	4	
Math 101—College Algebra	4	4	4
Math 102—Trigonometry		4	4
Math 111, 112, 113—Math for Elem. Teachers	3	3	3
Math 200—Calculus w/Analytical Geometry			4
Math 201, 202, 203—Calculus w/Analytical Geom.		4	4
SCIENCE			
Ch 101, 102, 103—General Chemistry	3	3	3
Ch 201, 202, 203—General Chemistry	3	3	3
GS 104, 105, 106—Physical Science	4	4	4
GS 101, 102, 103—General Biology	4	4	4
Zool 201, 202, 203—General Zoology	4	4	4
Bot 201, 202, 203—General Botany	3	3	3

SOCIAL SCIENCE	Fall	Winter	Spring
Ec 201, 202, 203—Principles of Economics	3	3	3
Hst 101, 102, 103—History of Western Civilization	3	3	3
Hst 201, 202, 203—History of United States	3	3	3
Geog 105, 106, 107—Introductory Geography	3	3	3
Psy 201, 202, 203—General Psychology	3	3	3
P.S. 201, 202, 203—American Government	3	3	3
Soc. 204, 205, 206—General Sociology	3	3	3
HUMANITIES			
Wr 111, 112, 113—English Composition	3	3	3
Eng 101, 102, 103—Survey of English Literature	3	3	3
Sp 111, 112, 113—Fundamentals of Speech	3	3	3
PHYSICAL EDUCATION			
PE 180—Physical Education	1	1	1
PE 190—Physical Education	1	1	1
HE 250—Personal Health		2	2
BUSINESS ADMINISTRATION			
BA 101—Introduction to Business	4		
BA 211, 212, 213—Principles of Accounting	3	3	3
GENERAL ENGINEERING			
GE 101, 102, 103—Engineering Orientation	2	2	2
GE 115—Graphics			3

COURSE DESCRIPTIONS

SCIENCE AND MATHEMATICS

Mth 100—Intermediate Algebra **(4 term hours)**
Prerequisite: One year of high school algebra or Mth 60. No credit allowed if taken after Mth 101 or any more advanced mathematics course.

Mth 101—College Algebra **(4 term hours)**
Prerequisite: One and one-half years of high school algebra or Mth 100.

Mth 102—Trigonometry **(4 term hours)**
Prerequisite: Mth 101.

Mth 111, 112, 113—Matthematics for Elementary Teachers **(3 hours each)**
Basic concepts of mathematics; for prospective elementary teachers.

Mth 200, 201, 202, 203—Calculus with Analytic Geometry **(4 term hours each)**
Standard sequence for students in science and engineering.

Ch 101, 102, 103—General Chemistry **(3 term hours each)**
For students who have had no previous training in chemistry and for those whose college aptitude test scores indicate need for a more elementary approach. 2 lectures; 1 three hour laboratory period.

Ch 201, 202, 203—General Chemistry **(3 term hours each)**
Service course concerning basic principles of general chemistry. Prerequisite: One year of high school chemistry and acceptable college aptitude scores. 2 lectures; 1 three hour laboratory period.

GS 101, 102, 103—General Biology **(4 term hours each)**

Biological principles applied to both plants and animals. 3 lectures; 1 three-hour laboratory period.

GS 104, 105, 106—Physical Science **(4 term hours each)**

Fundamental principles of physics, chemistry, astronomy, and geology; development and application of the scientific method. 3 lectures; 1 two-hour laboratory period. Students are advised to complete one year of high school algebra, or equivalent, as prerequisite to the course.

Z 201, 202, 203—General Zoology **(4 term hours each)**

For zoology majors and premedical, predental, prenursing, prepharmacy students and others. 3 lectures; 1 three-hour laboratory period.

Bot 201, 202, 203—General Botany **(3 term hours each)**

How plants get their food, grow, differentiate, and reproduce. Bot 201: seed plants; Bot 202: lower plants; Bot 203: identification of native plants, use of keys, floral morphology.

SOCIAL SCIENCE

Ec 201, 202, 203—Principles of Economics **(3 term hours each)**

Principles that underlie production, exchange, distribution, etc. Prerequisite: Sophomore standing.

Hst 101, 102, 103—History of Western Civilization **(3 term hours each)**

Origins and development fo Western civilization from ancient times to the present.

Hst 201, 202, 203—History of the United States **(3 term hours each)**

From colonial times to the present.

Geog 105, 106, 107—Introductory Geography **(3 term hours each)**

A general introduction to the field of geography; 105, physical geography; 106, regional survey of the world; 107, cultural geography.

PS 201, 202, 203—American Governments **(3 term hours each)**

201: principles of American constitutional system, political process, and organization of national government; 202: powers and functions of national government; 203: practical operations and contemporary reforms in government at state and local level.

Psy 201, 202, 203—General Psychology **(3 term hours each)**

Basic principles and theories of behavior. Discussion of individual differences, intelligence, aptitude, methods of psychological measurement and testing, drives and motives, emotions and reactions to stress, perception, learning, thinking, reasoning, personality; the response mechanism, communication processes, attitudes and social processes, frontiers of psychology. Sophomore standing recommended.

Soc 204, 205, 206—General Sociology **(3 term hours each)**

The basic findings of sociology concerning the individual, culture, group life, social institutions, and factors of social change.

HUMANITIES

Wr 111, 112, 113—English Composition **(3 term hours each)**

The fundamentals of English composition; frequent written theme. Special attention to correctness in fundamentals and to the organization of papers.

Eng 101, 102, 103—Survey of English Literature **(3 term hours each)**

Study of the principal works of English literature based on reading selected to represent great writers, literary forms, and significant currents of thought. Provides both an introduction to literature and a background that will be useful in the study of other literatures and other fields of cultural history.

Sp 111, 112, 113—Fundamentals of Speech **(3 term hours each)**

Projects in extempore speaking. Primary emphasis on content and organization, with attention also to the student's adjustment to the speaking situation, effective delivery, audience motivation, and language of speech.

PHYSICAL EDUCATION

PE 180—Physical Education (Women **(1 hour each term, six terms)**

PE 190—Physical Education (Men) **(1 hour each term, six terms)**

Physical activities taught for acquisition of skill and for adaption in social life of the student.

HE 250—Personal Health **(2 term hours each term)**

Study of the personal health problems of men and women with emphasis on implications for family life. Mental health, communicable diseases, degenerative diseases, nutrition.

BUSINESS

BA 101—Introduction to Business **(4 term hours each term)**

Business organization, operation, and management intended to orient the student in the field of business and to help him determine his field of major concentration.

BA 211, 212, 213—Principles of Accounting **(3 term hours each term)**

Introduction to field of accounting, technique of account construction; preparation of financial statements; application of accounting principles to practical business problems; proprietorship studies from standpoint of single owner, partnership, and corporation.

GENERAL ENGINEERING

GE 101, 102, 103—Engineering Orientation **(2 hours each term)**

Departmental engineering orientation. Prerequisite: Math 101, 102 previously or concurrently.

GE 115—Graphics **(3 hours each term)**

Fundamental principles of the language. Three 2 hour laboratory periods.

Adult Evening Programs

ADULT EDUCATION CLASSES are provided for men and women who wish to broaden their scope of knowledge by exploring specific fields of interest that will benefit them at their work, in the home, in an understanding of public affairs from the local level to the international plane, and in pursuit of cultural improvement.

GENERAL EDUCATION CLASSES in operation or which are planned for future presentation include: Mathematics, ranging from basic to advanced; Reading Techniques, Vocabulary Building, English Grammar, Spelling and Writing, Literature, French, Spanish, German, Russian, and other languages, U.S. History, World History, U.S. Government, Citizenship and Naturalization classes, Astronomy, Science, Economics, Health, and Juvenile Problems.

APPRENTICESHIP CLASSES are restricted to people working in the apprenticeable trades and are open only to persons indentured to a trade. The evening classes for apprentices are established primarily to teach the theory of the occupation. Regular apprentice classes are now given for Apprentice Carpenters, Inside Wiremen, Plumbers, Maintenance Electricians, Sheet Metal Workers, Painters, Power Linemen, and the Trowel Trades. Low enrollment apprentice classes are available for the trades in which the number of indentured apprentices does not meet the minimum requirements of a regular class.

DISTRIBUTIVE EDUCATION CLASSES offer courses in Retail Selling, Sales Dynamics, General Insurance, Principles of Insurance, Basic Show Card Designing, Retail Accounting Methods, Investment Procedures, Store Management, Check-Out Techniques, Personnel Direction, Credit courses, and other specialized courses of interest to those in the sales and distribution occupations.

HOME ECONOMIC CLASSES are designed to aid the homemaker in improving conditions in the home. Classes are offered in Home Sewing, Children's Sewing, Home Tailoring, Beginning Bishop Method of Sewing, Advanced Bishop Tailoring, Special Fitting class for Bishop students, Interior Decoration, Home Management, Home Landscaping, Home Repair Tips, Freezing Techniques, Family Finances, and Menu Development.

AVOCATIONAL CLASSES are designed to aid people in the area of avocations rather than in the vocations. Included in this category are: Woodworking, Basic Camera, Basic Darkroom, Color Photography, Radio Service, Auto Mechanics for Women, Mosaics, Rocks and Minerals, Metal Art, Leathercraft, Photographic Composition, Flower Arrangement, Sketching, Woodcarving, etc.

OCCUPATIONAL EXTENSION CLASSES are established for employed workers who wish to improve or enlarge their knowledge of a particular occupation. Classes may be set up when ten or more people in a single craft request a class covering an area of the trade. Classes in this area include the Industrial Electronics Program, the Supervisory Development Program, Electrical Code, Electric Arc, Acetylene and Heliarc Welding, Diesel Fuel Injection, Automotive Tune-up, Machine Shop, Drafting, Blueprint Reading for each of the trades, Mathematics for each trade, Estimating for the Building trades, Advanced and Specialized courses for Printers, Use of the Square for Carpenters, Advanced Electronic classes for Electricians, Advanced Techniques for Painters and Paperhangers, and Postgraduate courses for Practical Nurses.

HIGH SCHOOL COMPLETION classes are offered to aid adults in acquiring a high school diploma. Six courses consisting of Social Studies, U.S. History, Mathematics, General Science, American Literature and English Grammar must be successfully completed to meet the school requirements. Each course consists of 30 class hours.

BUSINESS EDUCATION classes are available for people interested in Shorthand, Typing, Bookkeeping and other office practice areas.

Tuition rates are set according to department costs.

Evening adult programs will be coordinated with the starting dates of the pre-employment program.

ADULT EVENING COURSES

The following listing of courses are usually offered each year. These courses are given if there is sufficient interest and enrollment to justify scheduling the course.

Other courses will be offered if there is sufficient interest in a subject.

Course Number	Title of Course	Total No. Class Hrs.
TRADE EXTENSION		
9.128	Drafting (Building Trades)	60
	Heliarc Welding	30
9.143	Radio Theory	30
9.130	Refrigeration	60
9.160	Welding	60
HOMEMAKING		
9.921	Advanced Bishop Sewing	30
9.925	Advanced Bishop Tailoring	30
9.920	Beginning Bishop Sewing	30
9.924	Bishop Tailoring	30
9.930	Home Sewing	30
9.900	Interior Decorating	30
BUSINESS EDUCATION		
9.726	Accounting	30
9.715	Bookkeeping	30
	Business English	30
9.710	Business Machines	30
9.700	Typing I	30
9.701	Typing II	30
9.720	Shorthand	30
GENERAL ADULT		
9.502	Algebra I	60
0.501	Refresher Math	30
	Remedial Reading	30
0.600	Spanish I	30
0.601	Spanish II	30

NURSING		
	Practical Nurse Extension	30
DISTRIBUTIVE EDUCATION		
9.201	Retail Selling	30
SELF IMPROVEMENT		
	Citizenship	20
	Driver Education	24
	High School Completion (6 Courses)	30 each
	Mathematics	30

Industrial Supervisory Training

A planned program of study for industrial supervisors is provided through special course offerings.

These courses may be taken as an organized program of studies for a certificate or diploma, or courses may also be taken individually. These courses are only available for supervisors or personnel being trained for supervisory positions.

The following certificates or diplomas may be earned through a planned program of courses:

CERTIFICATE IN BASIC SUPERVISORY PRACTICES 18 Term Units*

CERTIFICATE IN PRINCIPLES AND PRACTICES OF SUPERVISON 45 Term Units*

DIPLOMAS IN INDUSTRIAL SUPERVISION 90 Term Units*

* (One term unit approximates 10 class hours.)

COURSE DESCRIPTION FOR SUPERVISORY COURSES

ELEMENTS OF SUPERVISION 9.500

A basic introductory course covering in general terms the total responsibilities of a supervisor in industry.

BASIC PSYCHOLOGY FOR SUPERVISORS 9.502

Course designed to assist the supervisor in understanding the people with whom he works, with emphasis on the psychologicol aspects.

HUMAN RELATIONS (Developing Supervisory Leadership) 9.506

(Prerequisite: Basic Psychology for Supervisors)

To show the practical application of basic psychology in building better employer-employee relationships by studying human relations techniques.

SUPERVISOR'S RESPONSIBILITY FOR MANAGEMENT OF PERSONNEL 9.516

Personnel techniques for which the supervisor is partially responsible such as selection, placement, testing, orientation, training, counseling, merit rating, promotion, transfer, and training for responsibility.

ORGANIZATION AND MANAGEMENT 9.518

The supervisor's responsibility. Establishing lines of authority, functions of departments or units, duties and responsibilities, policies and procedures, rules and regulations, etc.

LABOR-MANAGEMENT RELATIONS 9.508

The history and development of the Labor Movement. The supervisor's responsibility for good labor relations. The union contract and grievance procedure.

INDUSTRIAL ECONOMICS 1.506

Significant economic facts. Management-supervisory-employee relationships to economics and local industry.

METHODS IMPROVEMENT FOR SUPERVISORS (Work Simplification) 9.512

The supervisor's responsibility for job methods improvement. The basic principles of work simplification, the problems involved, motion study fundamentals, and time study techniques.

COST CONTROL FOR SUPERVISORS 9.514

How costs are determined in industry and factors in cost control.

JOB ANALYSIS FOR WAGE ADMINISTRATION 9.520

The supervisor and job descriptions, job specification, job evaluations, and job classifications. The wage plan of the Department of Labor. The Federal Employment Service. Wage administration and the line organization.

ORAL COMMUNICATIONS FOR SUPERVISORS 9.503

Effective speaking and listening. Understanding what is communicated as related to intent and effect. Conference leading and practice for supervisors.

WRITTEN COMMUNICATIONS FOR SUPERVISORS 9.501

Business letter writing, memorandum and bulletin writing, manual writing covering format, content and structure.

REPORT WRITING FOR SUPERVISORS 9.505

(Prerequisite: Written Communications for Supervisors or equivalent.)

Types of reports. steps in preparing the report. Practice in writing and evaluating reports in the occupational field of the individual enrollees.

SAFETY TRAINING AND FIRE PREVENTION 9.522

Management and supervisory responsibility for fire and accident prevention. Accident reports. Machine guarding and personnel protective equipment. State Industrial Accident Code and fire regulations. The First Aid department. Job instruction and safety instruction. Company rules and enforcement. Advertising and promoting a good safety and fire prevention program.

DEVELOPING THE EMPLOYEES THROUGH TRAINING (Job Training) 9.504

The supervisor's responsibility for developing employees through training. Orientation and induction. Vestibule and on-the-job techniques. Job instruction principles. Apprenticeship training. Technical training. Supervisory training and management development.

MANAGEMENT CONTROLS AND THE SUPERVISORY 9.524

Delegation of responsibility through the use of controls. The purpose and objectives of controls, manufacturing costs, quality control, quantity control, production control, control over materials, control over personnel, organization.

READING IMPROVEMENT FOR SUPERVISORS 9.507

General approach to better reading through the proper use of text material, reading films, tachistoscope, and practice. Benefits of better reading primary considerations in reading, evaluating and analyzing what is read, vocabulary improvement, advanced reading tips.

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LANE
COMMUNITY
COLLEGE
200 N. MONROE STREET
EUGENE, OREGON
97402

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