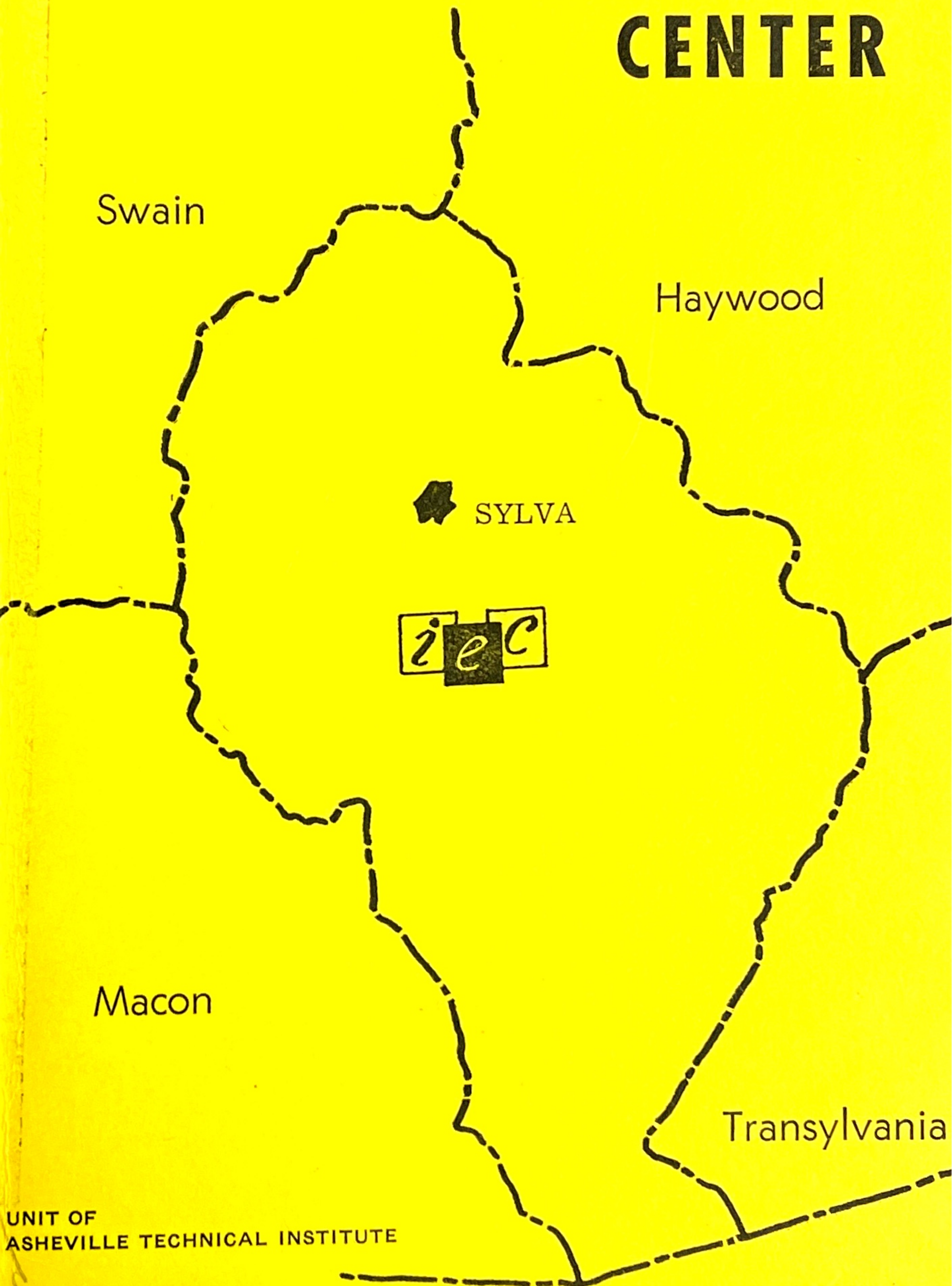


JACKSON COUNTY INDUSTRIAL EDUCATION CENTER



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SYLVA, NORTH CAROLINA



**UNIT OF
ASHEVILLE TECHNICAL INSTITUTE**

SCHOOL CALENDAR

1965-1966

FALL QUARTER

Registration Sept. 7
Classes Begin Sept. 8
Classes End Nov. 24
Total number of class days — 56
Thanksgiving Holidays — Nov. 25 & 26

WINTER QUARTER

Registration Nov. 30
Classes Start Dec. 1
Classes End Feb. 25, 1966
Total number of class days: 56
Christmas Holidays — December 22 through January 2, 1966

SPRING QUARTER

Registration March 2
Classes Start March 3
Classes End May 24
Total number of class days: 57
Easter Holidays — Good Friday, April 8, Easter
Monday, April 10
Vocational-Technical Education Conference
May 30 through June 3

SUMMER QUARTER

Registration June 6
Classes Start June 7
Classes End August 24
Total number of class days: 56
Independence Day holiday — Monday, July 4

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ADMINISTRATION

I. E. Ready Director, Department of Community Colleges
Ivan E. Valentine Asst. Dir. of Vocational-Technical Programs

STATE BOARD OF EDUCATION

William D. Herring, Chairman	C. W. McCrary
Edwin Gill, State Treasurer	George Douglas Aitken
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Charles G. Rose, Jr.	H. L. Trigg

STAFF

Edward E. Bryson	Resident Director
Joel Freeman	Related Instructor
J. B. Anderson	Automotive Instructor
Ed Ulsenheimer	Carpentry Instructor
Jim Searcy	Masonry Instructor
Doyle Henson	Radio and Television Instructor
John W. Ashe	Secretarial Training
Ray Clark	Related Instructor — Night
Rufus Ray	Automotive Instructor — Night
Peggy Dillard	Senior Stenographer
Frank Cowan	Custodian

OBJECTIVES

It has been said that technical education is knowledge in action. Objectives of the Jackson County Industrial Education Center embody the belief that the most meaningful knowledge is that which can be put to productive use.

Our objectives are envisioned as specific goals established to enlarge the potential of the individual student through education in the knowledge, skills, and attitudes which will be useful to him and thus to his employer. The Center will provide instruction in numerous special fields to meet the demands of an industrial community, but it will not ignore its responsibility to equip students with the ability to think creatively and abstractly. In addition, certain courses which place emphasis on an understanding of the American free enterprise system and develop interest in the betterment of mankind are common to all areas of study.

Our aims reflect a firm philosophy that education should equip every individual, insofar as his capacity permits, with the competence to attain his economic, social, intellectual, and spiritual goals in a democratic society. Physical and mental skills will be developed to the end that each student, as he trains and works in the various occupations, will be able to contribute to the maintenance, improvement, and defense of our American way of life.

AREAS OF STUDY

TRADE DIVISION

Courses in the trade division place emphasis on training in those manipulative and mental skills applicable to the particular curriculum in which the student is enrolled. Students work under close supervision to obtain skills on a level acceptable to industry.

EXTENSION DIVISION

The extension division offers avenues of learning to those men and women who, though employed, seek to upgrade, update, and generally enhance their individual knowledge and performance. Most curriculums in the technical and trade divisions will be offered on an extension level.

Included in this division are short term courses designed as specific courses for upgrading and updating. Also included in this division are supervisory-level courses designed to stimulate those individuals who aspire to advance their knowledge in the fields of management.

Special classes, both day and night, may be provided to accommodate such students.

ADMISSION PROCEDURES AND REQUIREMENTS

GENERAL REQUIREMENTS

Any North Carolina citizen may be enrolled in a course if he meets the admission requirements. Such requirements will necessarily depend upon the course of study chosen. The applicant must be eighteen years or older and must possess certain basic aptitudes and interest. No applicant may enroll in more than one curriculum.

The applicant should be in reasonably good health with no impairment of vision or physical defect that would restrict his ability in a particular field of work. The applicant may under certain conditions be required to furnish evidence of satisfactory health.

Educational background, experience, and aptitudes will all be considered when an application is made to the Center.

ADMISSION PROCEDURE

Persons wishing to take courses at the Center must file an application for admission. Application forms may be obtained by writing or calling the Center. The telephone number is 586-4091. A transcript of courses and grades from the last school attended must be on file with the Center before an application is considered complete.

While application for enrollment may be made at any time preceding the anticipated date of entry, it is strongly recommended that this be done at least thirty days prior to such date. Sufficient time will thereby be allotted for necessary testing, counseling, and proper evaluation of results.

All pre-employment students will be required to take the General Aptitude Test Battery administered by the North Carolina Employment Security Commission. Individuals outside of Jackson County may arrange to take this aptitude test at the Employment Office nearest them. After the completed application form is received and the results of the aptitude test evaluated, a counseling session will be arranged at least two weeks in advance to the first day of the course. No application will be considered complete until all requested information has been supplied and until a personal interview has been completed with the Director.

ADMISSION WITH ADVANCE STANDING

The Jackson County Industrial Education Center will accept work and give credit for work completed in other Industrial Education Centers, Technical Institutes, and Colleges. Applicants for admission with advanced standing should make application as a regular applicant and submit a transcript of work from prior schools. Acceptance of such work will be at the discretion of the Director.

DIPLOMAS AND CERTIFICATES

DIPLOMA COURSES DEFINED

The Jackson County Industrial Education Center will grant diplomas in the name of the North Carolina State Board of Education on successful completion of any trade level curricula. A state comprehensive examination will be required before graduation in any trade level curriculums.

CERTIFICATES

Certificates will be issued in the name of the Jackson County Industrial Education Center to students who successfully complete any short term program or course.

FEES

Registration Fee (all students, regardless of course) \$2.00

Tuition:

Day Students — per quarter 30.00

Night students — per credit hour 2.00

In addition to the fees above, students must purchase prescribed textbooks for each course.

STUDENT INSURANCE

Certain risks are inherent in any work involving regular contact with mechanical and electrical equipment. While stringent precautions will be taken to insure safety, it is felt to be in the interest of all students to provide some measure of insurance protection.

A group policy providing the desired insurance protection will be maintained in effect by the Center and all students will be **REQUIRED** to subscribe to such coverage. The cost of accident insurance to the student will be approximately \$2.50 per year.

WITHDRAWALS

Any student who must withdraw because of illness or personal hardship may, if his work is deemed satisfactory at the time of withdrawal, re-enter the course as a beginning student provided that such action is taken upon the immediate next offering of the course.

A student may be dismissed from school for failure to achieve a passing grade for two grading periods or for infraction of the rules that apply to student conduct. Re-entrance of dismissed students will be at the discretion of the Director. A failing grade for one report period will automatically place the student upon probationary standing for the following report period.

REFUNDS

No refunds will be made to students who withdraw without authority or who are dismissed for cause.

Students who are given permission to withdraw will receive a refund of their Instructional supply fee on a prorated basis.

ATTENDANCE REQUIREMENTS

Only excused absences will be permitted. Unexcused absences will be entered as "O" for the daily work. Three consecutive unexcused absences will subject a student to dismissal. An accumulation of unexcused absences will also subject the student to dismissal.

Some evidence as to cause of absence may be required for excused absence.

STUDENT CONDUCT

Students will be expected to conduct themselves at all times as individuals of prudence and maturity. The rights and feelings of others will be respected. Each student shall demonstrate a high regard for school facilities and property and for the personal property of others.

School regulations which serve to control such activities as vehicle traffic and parking, smoking, loitering, and other aspects of personal conduct must be stringently observed.

Students may be promptly dismissed for conduct which is considered incompatible with standards of propriety and good judgment.

GRADING SYSTEM

Grades will be issued to all students who are failing at mid-term and final grades will be issued at the end of the term to all students. Students will be graded on the acquirement of technical skills, ability to work under supervision, interest in work, initiative, and the ability to apply related information.

Students enrolled in either the school of Technology or the school of Trades will be graded by the following system.

A	93-100	Excellent
B	86-92	Above Average
C	78-85	Average
D	70-77	Passing
F	Below 70	Unsatisfactory
WP	Withdrawal passing	
WF	Withdrawal failing	
I	Incomplete	

Incomplete: Assigned when a student is unable to complete his work or take a final examination because of illness or for other reasons over which the student has no control. This grade is given only with the approval of the Director of Student Personnel. An "incomplete" must be removed within the first six weeks of the next term in which the student is enrolled. Otherwise, the grade becomes an "F".

ADDITIONAL COUNSELING AND TESTING

As mentioned under admission procedure all applicants will be required to be subjected to a series of aptitude tests. This will be accomplished prior to acceptance and registration. The counselor will schedule interviews with students concerning interpretation of their test scores and he will advise student concerning course selections. Additional aptitude tests may be desirable to determine individual ability. Applicants are not encouraged to enroll unless it is believed that the student has made a sound choice and that he will profit from his choice.

Students are encouraged to use the counseling services at any time. The counseling service will work at all times with individuals to keep them informed of the progress they are making. Also, many reference materials are made available to students during the training program through the counseling service.

PLACEMENT SERVICE

The Center provides placement service by working with the Employment Security Commission which will assist the students and alumni in securing employment. The objective of this service is to guide and assist the student and graduate in obtaining the type of position for which he is best qualified.

Active contacts are maintained throughout North Carolina with industries. Informative booklets, brochures, and industrial directories are available to students and alumni. Group and individual job interviews will be arranged.

STUDENT LOUNGE

A refreshment and lounge area equipped with a variety of modern vending machines is provided for the convenience of students and faculty. Foods and drinks may not be carried into a classroom, shop, or laboratory.

SMOKING

Smoking will be confined to designated areas inside and outside the building.

SCHOOL OF TRADES

The following areas of study are included in the School of Trades.

- Automotive Mechanics
- Radio and Television Servicing
- Carpentry and Cabinetmaking
- Block and Brick Masonry
- Secretarial Training
- Drafting

The School of Trade will offer a variety of courses on a 4 quarter basis. The areas of study reflect the employment opportunities in the Western part of North Carolina. These curriculums require one full year for completion. If a student elects to enroll in the School of Trades through extension because of his work load, the time required for completion will be doubled. The extension division will offer fifteen hours per week in a particular area of study. The full time schedule will require thirty hours per week.

The student enrolled in the School of Trades will spend most of his time in the shop working under actual industrial conditions. The rest of the time will be in the classroom and laboratory in related subjects. The School of Trades will require each student to demonstrate an ability to do work in his particular trade. Emphasis will be placed on becoming proficient in the use of machines, instruments, and other equipment related to a particular area of work.

Certain courses will be required of every student irrespective of his curriculum. These courses will enhance the student's ability toward his work. A thorough understanding of the American System of Economics as it relates to the free enterprise system and corporate structure will be required of every student.

AUTOMOTIVE MECHANICS

This is a one-year program providing a thorough training in the theoretical as well as manual skills in serving, testing, and diagnosing. All phases of the electrical system, the power plant, braking system, the power train will be studied.

The courses are arranged in a sequence that gives the student the required technological and special courses as they are needed to coordinate his laboratory experiences.

Emphasis is placed on the mechanical parts and operation of the various automobile units. Trouble shooting and servicing of the live project is also stressed.

OCCUPATIONAL OPPORTUNITIES

Auto Mechanics, Truck and Bus Mechanic, Shop Foreman, Maintenance Supervisor, Dealer, Service Manager, Sales Technician, Factory Representative, and Experimental Lab Work are among those occupational opportunities awaiting graduates of the Automotive Mechanic Curriculum.

Course	Class	Lab	Shop Practice	Credit
First Quarter				
AUTO 121 Automotive Theory and Practice	3	0	12	7
MATH 121 Mathematics	5	0	0	5
ENG 101 Reading Improvement	2	0	0	2
PHY 104 Applied Physics	1	2	0	2
	<hr/>	<hr/>	<hr/>	<hr/>
	11	2	12	16
Second Quarter				
AUTO 122 Automotive Theory and Practice	3	0	12	7
PHY 105 Applied Physics	1	2	0	2
ENG 102 Communication Skills	2	0	0	2
DD 121 Blueprint Reading	3	0	0	3
	<hr/>	<hr/>	<hr/>	<hr/>
	9	2	12	14
Third Quarter				
AUTO 123 Automotive Theory and Practice	3	0	12	7
ENG 101 Small Engine Repair	3	0	0	3
SOC 101 Human Relations	2	0	0	2
MECH 112 Welding	0	0	3	1
PHY 106 Applied Physics	1	2	0	2
	<hr/>	<hr/>	<hr/>	<hr/>
	9	2	15	15
Fourth Quarter				
AUTO 124 Automotive Theory and Practice	3	0	9	6
SOC 103 Management Procedures	3	0	0	3
AUTO 125 Automotive Testing and Service	3	0	9	6
	<hr/>	<hr/>	<hr/>	<hr/>
	9	0	18	15

AUTOMOTIVE MECHANICS

COURSE DESCRIPTION

AUTO 121 AUTOMOTIVE THEORY AND PRACTICE — ENGINES

Designed to give the student a thorough knowledge in the use, maintenance, and storage of the various tools and measuring devices needed in automotive work. A study of the construction and operation of components of automotive engines. The student will learn testing of engine performance; servicing and maintenance for pistons, valves, cams and camshafts, fuel and exhaust systems, cooling systems; proper lubrication; and methods of testing, diagnosing and repairing of failure and defects in the various engine mechanisms. Prerequisite: None.

AUTO 122 AUTOMOTIVE THEORY AND PRACTICE — ELECTRICAL AND FUEL SYSTEMS

A thorough study of the electrical and fuel systems of the automobile, the electrical system and its components; battery cranking mechanism, generator, ignition, accessories, and wiring. Intensive training in the components and operation of various types of automotive fuel systems. Characteristics of fuels and types of fuel systems for which they are best adapted. The special tools, circuits, and testing equipment for the fuel and electrical system are studied. Prerequisite: AUTO 121.

AUTO 123 AUTOMOTIVE THEORY AND PRACTICE — CHASSIS AND SUSPENSIONS

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of the suspension, steering, and braking systems. Units to be studied will be shock absorbers, springs, steering systems, steering linkage, front end adjustments, types and servicing of brakes, etc. Prerequisites: AUTO 121, 122.

ENG 101 — SMALL ENGINE REPAIR

The purpose of this course is to teach the why and how of gasoline engine operations. A careful study of the theory and operating principles, plus actual practice in servicing and repairing engines will enable anyone to minimize engine troubles and to correct those troubles that do exist. The course will in general deal with small engines. Multicylinder engines will be included.

AUTO 124 AUTOMOTIVE THEORY AND PRACTICE — POWER TRAIN

Detailed analysis of the components of the automotive power train system, with the emphasis on identification of troubles which develop in these components and the correct servicing and repair. Included are: types of clutches, clutch operation, inspection and servicing clutches; functions of the transmission gears, principles and operation of the various transmission and torque converter types, service and repair; operation, diagnosis and servicing for drive shaft assemblies, rear axles, and differentials. Prerequisites: PHY 105, 106, AUTO 104.

AUTO 125 AUTOMOTIVE TESTING AND SERVICE

Emphasis is on the shop procedures necessary in determining the nature of troubles developed in the various component systems of the automobile. Extensive use of testing equipment will be made on the actual problem situations. A close simulation to be actual automotive shop will be maintained and every effort will be made to give the student a full range of testing and servicing experience. Prerequisites: AUTO 121, 122, 123, 124.

RADIO AND TELEVISION SERVICING

This curriculum is designed to fill the tremendous need for radio and television repairmen. With the number of televisions increasing every year, the need for individuals to service and install these receivers is also increasing every year. This particular curriculum will start with the basic information as a foundation on which their advanced courses are established. The individuals enrolled in the school of radio and television repair will spend over half of their time in the laboratory with typical servicing and installation problems found in the field of work.

OCCUPATIONAL OPPORTUNITIES

Radio Serviceman, Television Serviceman, Radio and Television Salesman, Installation, and Manufacturer Representative.

First Quarter				
Course	Class	Lab	Shop Practice	Credit
MA 125 Electrical Math	5	0	0	5
ELEC 122 Direct and Alternating Current	7	8	3	12
ENG 101 Reading Improvement	2	0	0	2
	<hr/> 14	<hr/> 8	<hr/> 3	<hr/> 19
Second Quarter				
ELN 122 Vacuum Tubes and Circuits	5	10	0	10
ELN 123 Amplifier Systems	2	0	6	4
ENG 102 Communication Skills	2	0	0	2
SOC 101 Human Relations	2	0	0	2
	<hr/> 11	<hr/> 10	<hr/> 6	<hr/> 18
Third Quarter				
ELN 124 Vacuum Tubes and Circuits	4	4	0	6
ELN 125 Radio Receiver Servicing	2	0	6	4
ELN 126 Transistor Theory and Circuits	5	4	0	7
SOC 103 Management Procedures	3	0	0	3
	<hr/> 14	<hr/> 8	<hr/> 6	<hr/> 20
Fourth Quarter				
ELN 127 Television Receiver Circuits	10	0	15	15
or				
ELN 128 Television Receiver Circuits and Servicing	5	0	12	9
Elective (1)	5	0	6	7
	<hr/> 10	<hr/> 0	<hr/> 18	<hr/> 16
ELECTIVE				
ELN 129 Single Side Band Systems	5	0	6	7
ELN 130 Two-way Mobile maintenance	5	0	6	7

RADIO AND TELEVISION SERVICING

COURSE DESCRIPTION

ELEC 122 DIRECT AND ALTERNATING CURRENT

A study of the structure of matter and the electron theory, the relationship between voltage, current and resistance in series, parallel and series-parallel circuits. Analysis of direct current by Ohm's law and Kirchhoff's law; sources of direct current potentials. Fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power and resonance and alternating current circuit analysis. Prerequisite: None

ELN 122 VACUUM TUBES AND CIRCUITS

An introduction to vacuum tubes and their development; the theory, characteristics and operation of vacuum tubes, semi-conductor diodes, rectifier circuits, filter circuits, triodes and simple voltage amplifier circuits.

ELN 123 AMPLIFIER SYSTEMS

An introduction of commonly used servicing techniques as applied to monophonic and stereophonic high fidelity amplifiers and auxiliary equipment. The operation and servicing of intercommunication amplifiers and switching circuits will also be taught.

ELN 124 VACUUM TUBES AND CIRCUITS

A continuing study of tubes and circuits; the theory, characteristics, and operation of the tetrode and pentode tubes, voltage, and power amplifiers, tunable RF Amplifiers, oscillators and demodulator circuits.

ELN 125 RADIO RECEIVER SERVICING

Principles of radio reception and practices of servicing; included are block diagrams of radio receivers, servicing techniques of AM and FM receivers by resistance measurements, signal injection, voltage, analysis, oscilloscope methods of locating faulty stages and components, and the alignment of AM and FM receivers.

ELN 126 TRANSISTOR THEORY AND CIRCUITS

Transistor theory, operation, characteristics and their application to audio and radio frequency amplifier and oscillator circuits.

ELN 127 TELEVISION RECEIVER CIRCUITS

A study of principles of television receivers, alignment of radio and intermediate frequency amplifiers, adjustment of horizontal and vertical sweep circuits will be taught. Techniques of trouble shooting and repair of TV receivers with the proper use of associated test equipment will be stressed. Additional study of more specialized servicing techniques and oscilloscope waveform analysis will be used in the adjustment, trouble-shooting and repair of the color television circuits.

ELN 128 TELEVISION RECEIVER CIRCUITS

This course, taught in conjunction with an elective will be a shortened version of ELN 127.

ELN 129 SINGLE SIDE-BAND SYSTEMS

An introductory course of single side-band transmission systems with carrier frequency or without and the associated balanced modulator or phasing system used to produce this type of transmission. Time will be allotted also to the necessary circuitry in the receiver to receive this type transmission.

ELN 130 TWO WAY MOBILE MAINTENANCE

A course to acquaint the student with the theory and maintenance of fixed station and mobile station transmitters and receivers. Except for radio laws, sufficient information will be given to qualify the student to take the FCC second class radiotelephone license examination.

CARPENTRY AND CABINETMAKING

This curriculum is designed to subject a student to the fundamentals of carpentry work and the basic procedures of cabinetmaking. Students will begin with hand tools and progress into the woodworking machines found in a cabinet shop. The carpentry work will begin with the masonry foundation and progress to the finished building. Some consideration will be given to industrial buildings as compared to residential buildings.

Each student will have an opportunity to review the work of other skilled tradesmen such as plumbing and heating, electrical, masonry, and painting and finishing.

With the tremendous population growth and expanding industry this area will serve a need that has unlimited potential.

OCCUPATIONAL OPPORTUNITIES

Occupational opportunities will be found with private builders, residential builders, general contractors, cabinet shops, and in many industries that maintain their own business.

First Quarter				
Course	Class	Lab	Shop Practice	Credit
DD 121 Blueprint Reading	3	0	0	3
MA 121 Mathematics Review	5	0	0	5
ENG 101 Reading Improvement	2	0	0	2
CAR 110 Cabinetmaking I	5	0	10	8
	—	—	—	—
	15	0	10	18
Second Quarter				
DD 122 Blueprint Reading	3	2	0	4
MA 120 Math (Geometry)	3	0	0	3
CAR 111 Masonry	3	0	5	4
CAR 112 Cabinetmaking II	3	0	6	5
CAR 113 Carpentry I	2	0	3	3
	—	—	—	—
	14	2	14	19
Third Quarter				
DD 127 General Drafting	2	3	0	3
MA 123 Mathematics (Trig)	5	0	0	5
CAR 114 Plumbing	2	0	3	3
CAR 115 Cabinetmaking III	3	5	0	4
CAR 116 Carpentry II	3	0	4	4
	—	—	—	—
	15	8	7	19
Fourth Quarter				
CAR 117 Materials and Finishes	2	0	3	3
CAR 118 Cabinetmaking IV	2	0	6	4
CAR 119 Carpentry III	4	0	11	7
SOC 101 Human Relations	2	0	0	2
	—	—	—	—
	10	0	20	16

COURSE DESCRIPTION

CAR 110 CABINETMAKING I

This course is designed to introduce the student to hand tools used in a cabinet shop. After several projects with hand tools the student will be placed on each machine. Various types of wood will be used and identification of the various types of wood will be required.

CAR III MASONRY

The student will study the various types of masonry construction and the types of masonry materials on the market today. Framing for chimney construction, ceramic floors, and walls, flues will be presented. Form work for concrete walls, pillars, floors, foundations, driveways, and patios will be practiced. A study of the various mixtures of concrete and mortar will be studied.

CAR 112 CABINETMAKING II

This course will go into the necessary framing for cabinet work. Students will be presented a study of built in cabinets and pre-constructed cabinet work. Built in book cases and special work will be presented.

CAR 113 CARPENTRY I

This course will be presented as an introduction to the first steps necessary from the finished foundation to the complete framing of a building. Methods of framing entire walls before erection will be presented. Motion saving methods and overall planning of time will be presented. Size of nails and identification of nails will be studied.

CAR 114 PLUMBING AND HEATING SYSTEMS

This particular course is designed to help the carpenter understand the types of plumbing and heating systems that are used in modern building construction. The requirements to special framing on the part of the carpenter will be practiced.

CAR 115 CABINETMAKING III

This course will progress into the various woods used in cabinetmaking. Drawers, doors, hardware, and cornice work will be practiced. Methods of finishing and types of finishes will be studied.

CAR 116 CARPENTRY II

In this course the students will study all types of roof construction. Each student will be required to cut and assemble all type of rafters. Students will be required to put on all types of shingles and prepare a roof for "built up construction." The students will also be required to study the framing square in order to figure the length of rafters and other materials.

CAR 117 MATERIALS AND FINISHES

This course will present an identification and selection of materials. Methods and types of external finishes will be presented. Types of doors, windows, and external siding will be presented. Each student will be required to frame, stop and lock, doors and windows.

CAR 118 CABINETMAKING IV

This is a study of the type of materials used on tops and other finished areas. Each student will study built in appliances such as stoves, ovens, dishwashers, and refrigerators. Finished cornice and standard measurements of all cabinet work will be presented.

CAR 119 CARPENTRY III

This course will present the student with the finish work of carpentry. Types of baseboard, moulding, door facing, and framing and finishing stair cases will be presented. Each student will be subjected to a series of projects under close supervision that will be subjected to all finishing tools normally used by a carpenter. Clean work and self pride will have an emphasis in this course.

BRICK AND BLOCK MASONRY

This curriculum is designed to give students knowledge and practice in the fundamentals of masonry. Students begin with mortar spreading and laying to the line, and progress through corner building, chimney & fireplaces and ornamental work.

Masonry students take related courses in blue print reading, mathematics, English, carpentry and the mechanical trades in building.

OCCUPATIONAL OPPORTUNITIES

With the tremendous growth of industries and the volume of masonry being used for building; employment is no problem. Opportunities are found with private builders, general contractors or your own business after several years experience.

Course—Title	Course Class	Hours Lab	Per Week Shop Practice	Qtr. Hrs. Credits
First Quarter				
DD 121 Blueprint Reading	3	0	0	3
MA 121 General Math	5	0	0	5
ENG 101 Reading Improvement	2	0	0	2
MAS 121 Masonry I	5	0	10	8
	—	—	—	—
	15	0	10	18
Second Quarter				
DD 122 Blueprint Reading	5	0	0	5
MA 120 Geometry	3	0	0	3
MAS 111 Related Carpentry	1	0	0	1
MAS 122 Masonry II	5	0	0	5
MA 100 Estimating	5	0	10	8
	—	—	—	—
	19	0	10	22
Third Quarter				
DD 307 General Drafting	1	4	0	3
MA 123 Trig.	5	0	0	5
CARP 114 Mechanical Trades	2	0	3	3
MAS 123 Masonry III	3	0	12	7
	—	—	—	—
	11	4	15	18
Fourth Quarter				
SOC 101 Human Relations	2	0	0	2
MA 126 Algebra & Trig.	5	0	0	5
MA 200 Advanced Estimating & Layout	5	0	0	5
MAS 124 Masonry IV	2	0	13	6
	—	—	—	—
	14	0	13	18

COURSE DESCRIPTION

MASONRY 121

History of brick. Spreading mortar. Block laying. Simple leads and laying brick to the lines. Mortar mixing techniques. Use and care of tools. Safety. Motion study. Basic unwritten laws of the masonry trade. Masonry definitions. Jointing. Classification of brick.

MASONRY 122

Types of bonds. Bond layout. Corner Building. Reading the masons rule. Related carpentry. Related electricity. Related plumbing. Development of speed in the basic skills.

MASONRY 123

Estimating. Use of masonry saw. Patterns and ornamental bonds. Scaffolding. Laying all types of brick and block. Laying window sills. Economics of the masonry trade.

MASONRY 124

Building layout. Use of transit. Arches, fireplaces and chimneys. Study of recent developments in the masonry trade. Structural clay tile. Precast stone. SCR brick. Development of speed in all phases of the masonry trade.

SECRETARY - STENOGRAPHER

This is a one-year program designed to provide students with the opportunity to study and obtain skills, knowledge and procedures that will qualify them for the position of Secretary-Stenographer. Courses are organized to enable the student to place the knowledge that has been gained in the classroom to practical use through laboratory work.

OCCUPATIONAL OPPORTUNITIES

Occupational opportunities to be found are: typist, stenographer, receptionist, transcribing machine operator, secretary, correspondent clerk and assistant in professional office.

Course—Title	Course Class	Hours Lab	Per Week	Qtr. Hrs. Credits
			Shop Practice	
First Quarter				
BUS 110 Typing	3	7	0	6
BUS 109 Shorthand	3	7	0	6
ENG 101 Reading	2	0	0	2
MA 112 Business Math	5	0	0	5
	—	—	—	—
	13	14	0	19
Second Quarter				
ENG 102 Comm. Skills	2	0	0	2
BUS 111 Statistical Typing	1	4	0	3
BUS 113 Shorthand	1	4	0	3
BUS 115 Business Machines	2	2	0	3
BUS 117 Accounting	2	2	0	3
BUS 120 Office Procedures	2	2	0	3
	—	—	—	—
	10	14	0	17
Thlrd Quarter				
ISC 102 Industrial Organization	3	0	0	3
ENG 103 Report Writing	2	0	0	2
BUS 112 Statistical Typing	1	4	0	3
BUS 114 Shorthand	3	2	0	4
BUS 116 Business Machines	2	3	0	3
BUS 118 Accounting	2	3	0	3
	—	—	—	—
	14	12	0	19
Fourth Quarter				
SOC 101 Human Relations	2	0	0	2
BUS 118 Typing	1	4	0	3
BUS 119 Dictation	2	3	0	3½
BUS 121 Office Procedures	3	2	0	4
BUS 166 Budget and Record Keeping	2	3	0	3½
	—	—	—	—
	10	12	0	16

COURSE DESCRIPTION

BUS 109 SHORTHAND

A beginning course in the theory and practice of reading and writing shorthand. Emphasis on phonetics, penmanship, word families, brief forms and phrases.

BUS 113 AND 114 SHORTHAND

Continued study of theory with greater emphasis on dictation for transcription.

BUS 119 TECHNICAL DICTATION

Development of shorthand power through sustained dictation at high speed. Additional work in specialized phrasing and shortcuts is included. Emphasis is placed on training the student for stenographic work on a production basis.

BUS 110 TYPING

Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation and manuscripts.

BUS 111, 112 AND 118 STATISTICAL TYPING

Emphasis on speed and accuracy, and to the development of individual production rates.

BUS 112 BUSINESS MATHEMATICS

Mathematical operations and their applications to business: payrolls, price marking; simple and compound interest, discount; commission; inventory; insurance; taxes; and other mathematics in business.

BUS 115 AND 116 BUSINESS MACHINES

Students will become familiar with various office machines associated with secretarial duties. Instruction will include the care, use, and practice on ten key adding machines, rotary calculators, key driven calculators, fluid process duplicators, mimeograph, dictating and transcribing machines. Established procedures, practices and standards found in modern business offices are emphasized.

BUS 117 ACCOUNTING I

An introduction to the elements of accounting and general accounting principles is integrated with practice in the use of special journals, with respect to single proprietorship, merchandising inventory and sales, accounting for cash, banking procedures, payroll accounting, and accounting for a retail store.

BUS 118 ACCOUNTING II

A detailed study of the periodic summary, work sheet, trial balance, adjustments and closing procedures at the end of an accounting period. An opportunity to apply all accounting principles and procedures of a sole proprietorship through the use of a practice set.

BUS 120 AND 121 OFFICE PROCEDURES

Designed to acquaint the student with the responsibilities encountered by a secretary during the workday. These include the following: receptionist duties, filing, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization, and insurance claims.

BUS 166 BUDGET AND RECORD KEEPING

The basic principles, methods and procedures for preparation and operation of budgets. Special attention is given to the involvement of individual departments and the role they play. Emphasis on the necessity for accurate record keeping in order to evaluate the effectiveness of budget planning.

DRAFTING

The draftsman uses his manual skills in manipulating T-square, triangles, other drafting tools to prepare finished drawings from rough sketches or samples. The preparation of finished designs also incorporates the draftsman's knowledge of mathematics and related information. The draftsman makes any adjustments or changes necessary or desired in structural or mechanical design.

OCCUPATIONAL OPPORTUNITIES

Typical job opportunities are found in the areas of state government, civil service, construction companies, industries, engineering firms, and architectural firms.

Course—Title	Course Class	Hours Lab	Per Week	
			Shop Practice	Qtr. Hrs. Credit
First Quarter				
DD 131 Drafting	3	0	12	7
MA 120 Geometry	3	0	0	3
ENG 101 Reading Improvement	2	0	0	2
PHY 104 Applied Physics I	1	2	0	2
DD 105 Drafting Analysis	2	0	0	2
	—	—	—	—
	11	2	12	16
Second Quarter				
DD 132 Drafting	3	0	12	7
MA 124 Algebra	5	0	0	5
ENG 102 Communication Skills	2	0	0	2
PHY 105 Applied Physics II	1	2	0	2
DD 135 Descriptive Geometry	1	4	0	3
	—	—	—	—
	12	6	12	19
Third Quarter				
DD 171 Mechanical Drafting	3	0	12	7
MA 126 Trigonometry	3	0	0	3
PHY 106 Applied Physics III	1	2	0	2
DD 141 Architectural Drafting	3	0	12	7
	—	—	—	—
	10	2	24	19
Fourth Quarter				
DD 172 Mechanical Drafting	3	0	12	7
SOC 101 Human Relations	2	0	0	2
ISC 102 Industrial Organizations	3	0	0	3
MECH 114 Shop Processes	2	2	0	3
DD 143 Architectural Mechanical Equipment	3	0	0	3
	—	—	—	—
	13	2	12	18

COURSE DESCRIPTION

DD 105 DRAFTING ANALYSIS

The trainee will make an analysis of the various drafting field options offered in the Center. This analysis will include selected reading assignments concerning the options. A study of the job descriptions concerning those areas in the *Dictionary of Occupational Titles*, a study of blueprints in the option fields, and preparation of sketches illustrating major differences in the types of drawings.

DD 131 DRAFTING

An introduction to drafting and the study of drafting practices. Instruction is given in the selection, use and care of instruments, singlestroke lettering, applied geometry, freehand sketching consisting of orthographic and pictorial drawings. Orthographic projection, reading and instrument drawing of principal views, single auxiliary view (primary), and double (oblique) auxiliary views will be emphasized. Dimensioning and note practices will be studied with reference to the American Standards Association practices. Methods of reproducing drawings will be included at the appropriate time.

DD 132 DRAFTING

The trainee will study simple and successive revolutions and their applications to practical problems. Sections and conventions will be studied and both detail and assembly sections will be drawn. Intersections and developments will be studied by relating the drawing to the sheet metal trades. Models of the assigned drawings will be made from construction paper, cardboard, or similar materials as a proof of the solution to the problems drawn.

Methods of drawing and projecting axonometric, oblique, and perspective drawings will be studied with emphasis on the practical applications of pictorial drawings. Various methods of shading will be introduced and dimensioning and sectioning of oblique and axonometric pictorials will be done.

DD 135 DESCRIPTIVE GEOMETRY

This is a study of the graphical analysis of space problems. The problems deal with practical design elements involving points, lines, planes, connectors, and a combination of these. Also included are problems dealing with solid geometry theorems. Where applicable, each graphical solution shall be accompanied by the analytical solution and visualization shall be stressed on every problem.

DD 141 ARCHITECTURAL DRAFTING

An introduction to architectural drafting. Further development of techniques in lettering, dimensioning, freehand sketching and instrument drawing. Drawings of construction details, using appropriate material symbols and conventions. Working drawings, including plans, elevations, sections, scale details and full-size details will be prepared from preliminary sketches.

DD 143 ARCHITECTURAL MECHANICAL EQUIPMENT

General study of heating, air conditioning, plumbing and electrical equipment, materials and symbols. Building code requirements pertaining to residential and commercial structures. Reading and interpretation of working drawings by mechanical engineers.

DD 171 MECHANICAL DRAFTING

An introduction to mechanical drafting beginning with problems concerning precision and limit dimensioning. Methods of fastening materials, and fasteners: keys, rivets, springs, and welding. Symbols will be studied and drawings will be made involving these items. Principles of design will be introduced with the study of basic mechanisms of motion transfer; gears, cams, power trains, pulleys, belting and methods of specifying and calculating dimensions will be studied. Drawings will be made involving these mechanisms. Prerequisite: DD 132.

DD 172 MECHANICAL DRAFTING

Principals of design sketching, design drawing, layout drafting, detailing from layout drawings, production drawings and simplified drafting practices constitute areas of study. Forging and casting drawings will be made from layouts. Specifications, parts list and bill of materials are emphasized in this course. The student will develop a complete set of working drawings of a tool, jig, fixture or simple machine and learn principles of design, handbook and manual usage.

RELATED COURSES

COURSE DESCRIPTION

DD 121 BLUEPRINT READING

Interpretation and reading of blueprints used by industry. A course designed to develop the ability to read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures, and notes.

Prerequisite: None

DD 122 BLUEPRINT READING

Interpretation and reading of blueprints used by industry. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes. Prerequisite: None.

DD 123 BLUEPRINT READING

Further practice in interpretation of blueprints as they are used in industry; study of prints supplied by industry; making plans of operations; passing on ideas, information, and processes. Prerequisite: DD 122.

DD 307 GENERAL DRAFTING

An introductory course in drafting for students needing a knowledge of drawing principles and practices for reading and describing objects in the graphic language. The student is expected to gain basic skills in drawing with instruments, lettering, geometrical constructions, freehand sketching, and describing objects orthographically with principal views. Freehand sketching and orthographic reading are to be emphasized.

ELEC 122 DIRECT AND ALTERNATING CURRENT

A study of the electrical structure of matter and the electron theory, the relationship between voltage, current and resistance in series, parallel and series-parallel circuits. Time will be devoted to the analysis of direct current circuits by Ohm's law and Kirchoff's law; time will be allotted for the study of sources of direct current potentials. Fundamentals concepts of alternating current flow; a study of reactance, impedance, phase angle, power and resonance. Time will be allotted for alternating current circuit analysis.

ENG 101 READING IMPROVEMENT

A concentrated effort to improve the student's ability to comprehend what he reads by training him to read more rapidly and accurately. The tachistoscope is used for class drill to broaden the span of recognition, to increase eye coordination and word group recognition, and to train for comprehension in larger units. Reading faults of the individual are analyzed for improvement, and principles of vocabulary building are stressed.

ENG 102 COMMUNICATION SKILLS

Development to the trainee's ability to communicate effectively with other individuals through the medium of good language usage in speaking and writing, to think more clearly, and to reason more forcefully in work problems pertaining to his job.

ENG 103 REPORT WRITING

Brief review of English grammar, spelling, and punctuation. Concentrated effort will be applied to the fundamentals of good writings; sentence structure, proper development of descriptive reporting, and the mechanics of report construction. Practice in writing letters and various report forms will be given and some time will be devoted to oral speech and note taking.

ISC 102 INDUSTRIAL ORGANIZATIONS

Methods, techniques, and practices of modern management in planning, organizing and controlling operations of a manufacturing concern. Introduction to the competitive system and the factors constituting product cost.

MA 100 ESTIMATING

This course is designed to give the student a basic understanding of estimating building materials from a blueprint, with emphasis on his major field.

MA 120 FUNDAMENTALS OF MATHEMATICS

Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Practice in depth.

MA 121 MATHEMATICS

Review of fundamental number concepts, operations, and systems of measurement. Mathematical situations dealing with common and decimal fractions, powers and roots, ratio and proportions, and percentages. A study of algebraic and geometric principles and concepts needed in understanding calculations, formulas, solution of equations, and selected plane and solid geometric forms. Prerequisite: None.

MA 122 MATHEMATICS

Foundation for a better understanding of applied mathematics. This course is a review of simple mathematical situations dealing with fractions, decimals, conversion of one to the other, short methods and checks, percentages and applications, ratio and proportion, and powers and roots. It will also present an introduction to axiomatic solution of equations and includes special products and factoring, algebraic fractions and their applications to equations. Prerequisite: None.

MA 123 MATHEMATICS

Fundamental geometric concepts and construction of plane and solid figures, surface and volume measurements, and related problems; introduction to trigonometry of the right triangle. Introduces gear ratio, lead screw and indexing problems with emphasis on application to the machine shop. Practical applications and problems will furnish the trainee with experience over the wide range of geometric propositions and trigonometric relations in shop problems, concluded by an introduction to compound angle problems. Prerequisite: Math 122.

MA 124 ALGEBRA

Basic concepts and operations of algebra: historical background of our base-10 number system; algebraic operations: addition, subtraction, multiplication and division; fractions, letter representation, grouping, factoring, ratio and proportions, variation; graphical and algebraic solution of first degree equations; solution of simultaneous equations by: addition and subtraction, substitution, graphing; exponents, logarithms, tables and interpolation.

MA 125 ELECTRICAL MATHEMATICS

To acquaint the student with the fundamental concepts of algebra; basic operations of addition, subtraction, multiplication and division are covered; time is spent in the solution of first order equations, use of letters and signs, grouping, factoring, exponents, ratios, proportions. Solution of equations both algebraically and graphically; a study of logarithms and use of tables. An introduction to trigonometric functions and their application to right triangles; a study of vectors for use in alternating current.

MA 126 TRIGONOMETRY

Trigonometric ratios; solving problems with right triangles, using tables, and interpolating; solution of oblique triangles using law of sines and law of cosines; graphs of the trigonometric functions; inverse functions, trigonometric equations. All topics are applied to practical problems.

MA 200 ADVANCED ESTIMATING AND LAYOUT

This course is designed to give detailed methods of estimating and use of the builders level and transit in layout work. Prerequisite: MA 100.

MECH 112 WELDING

Demonstration by the instructor and practice by student in the welding shop. Safe and correct methods of assembly and operating the welding outfit will be emphasized. Practice will be given for surface welding, bronze welding, silver brazing, and flame cutting methods applicable to mechanical repair work. Prerequisite: None.

MECH 114 SHOP PROCESSES

Comparison of the unit-production and mass-production systems. Casting, forging and allied processes, welding and sheet metal working processes are demonstrated and discussed. Mass-production methods are studied in relationship to precision dimensional control. Prerequisite: MECH 113.

PHY 104 APPLIED PHYSICS I

Introductory course in physics and its applications. Covers systems of measurement, theory of matter, properties of solids, liquids, and gases. Prerequisite: None.

PHY 105 APPLIED PHYSICS II

Basic principles of electricity, types of electricity, and its production, transmission, and transformation. Such factors as the electron theory, electrical measurement, magnetism, electromagnetism, and the magnetic effects of electricity constitute major areas of study. Prerequisite: PHY 104.

PHY 106 APPLIED PHYSICS III

Physical principles of force, energy, work and power; equilibrium and the laws of motion; principles of machines, mechanical advantage, and transmission of power in practical applications and the use of vectors and graphical presentations.

SOC 101 HUMAN RELATIONS

The purpose of the course is to help the student acquire greater understanding of his relations to other persons through learning and applying some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to government practices and labor organization, with special emphasis on the operating responsibilities of good management.

SOC 103 MANAGEMENT PROCEDURES

Management procedures are developed to familiarize the prospective businessman with the many important functions that must be carried on in the operation of a small business or enterprise. An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations are some of the subjects studied.