

PACIFIC GAS AND ELECTRIC COMPANY

PGE

245 MARKET STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

July 26, 1979

Local Union No. 1245
 International Brotherhood of
 Electrical Workers, AFL-CIO
 P. O. Box 4790
 Walnut Creek, California 94596

Attention: Mr. Dean Cofer, Business Manager

Gentlemen:

The General Construction Joint Apprenticeship Committee recommends adoption of the attached Guidelines for the Apprentice Electrician Training Program, Station Department.

As the apprenticeship has been extended an additional six months, Company proposes the following wage schedule for the Apprentice Electrician classification:

Start	-	\$316.70	per week
End 6 mos.	-	331.00	" "
End 1 yr.	-	342.50	" "
End 18 mos.	-	354.35	" "
End 2 yrs.	-	369.85	" "
End 30 mos.	-	381.20	" "

Company proposes that before any Apprentice Electrician can progress to journeyman status, it will be necessary that the employee meet all academic and on-the-job Standards of Achievement.

The preceding paragraph will not apply to those employees who have completed or are about to complete the original training program.

Those employees must complete that training program and required skills, as well as successfully completing the Basic Electricity School in Emeryville before they will be considered as having met the training requirements for progression to journeyman.

A list of those employees currently studying under the old program, showing their progress, is attached.

As provided by the Master Apprenticeship Agreement, an employee will not be held at a wage progression step if the training is not timely or the employee could not be scheduled to a particular school, through no fault of the employee.

July 26, 1979

An employee at the top rate of pay who has not met all Standards of Achievement will be given a sufficient period of time in which to meet such requirements. If the employee is unsuccessful in meeting such requirements, that employee's further continuance in the program will be determined by the Joint Apprenticeship Committee as provided in the Master Apprenticeship Agreement.

An apprentice who has not passed the ACT and who has not passed Basic Electricity must pass the ACT before being enrolled in the school.

An apprentice who has not passed the ACT but who has previously met all academic requirements for the apprenticeship will be exempted from passing the ACT for this apprenticeship only.

An employee who is hired directly into the Apprentice Electrician classification will be required to pass the ACT within the first six months of employment. The employee will be allowed three opportunities in which to take the examination. The first examination must be taken at the completion of two months, and if additional tests are requested, they shall be given at intervals of 30 days.

An employee who is hired directly into the journeyman classification, and subsequently proves unable to perform at the journeyman level, will be demoted into the apprentice classification at a wage step commensurate with the employee's academic and on-the-job level. If the employee must be enrolled in the Basic Electricity Course, the employee will be required to pass the ACT before being enrolled. Such employee will follow the above examination schedule.

An employee who is not at one of the proposed wage rates will continue to receive the employee's present wage rate until the Standards of Achievement and time requirements for progression to the next higher wage step are met, except as stated above.

Those employees who have met all requirements for progression to journeyman and who have been at the top wage rate for a period of one year will be progressed to journeyman as of the effective date of this agreement.

If you are in accord with the foregoing and its attachment and agree thereto, please so indicate in the space provided below and return one executed copy of this letter to Company.

Yours very truly,

PACIFIC GAS AND ELECTRIC COMPANY

By *JW Babright*
Manager of Industrial Relations

The Union is in accord with the foregoing and its attachment and it agrees thereto as of the date hereof.

LOCAL UNION NO. 1245, INTERNATIONAL
BROTHERHOOD OF ELECTRICAL WORKERS, AFL-CIO

July 30, 1979

By *Dean Cifer*
Business Manager

GUIDE LINES FOR THE
APPRENTICE ELECTRICIAN TRAINING PROGRAM

I. Objective of the Apprentice Electrician Training Program

The need for trained and fully qualified employees to accomplish the duties of a journeyman electrician in a manner consistent with Company's Standards, Safety and Performance has resulted in this program which coordinates extensive on-the-job and related academic training. The acquisition of knowledge and skill offers the employee in training the vehicle to attain self-confidence, assuredness and satisfaction in his or her work, and the correct and safe method of performing Company's work.

II. Training

During the 36 months of the apprenticeship program, the apprentice will be given job training divided into six time periods which coincides with the wage steps of the classification. In order that uniform and safe practices will be followed in the training period, various assignment of duties and work procedures will be provided in each of the wage steps as outlined in these guide lines and the attached Schedule. The amount of time or units of work as indicated in the Schedule are sufficient to permit the apprentice to develop proficiency in such duty or work procedures, but should not be considered as inflexible dependent on the demonstrated ability of each individual apprentice.

The attached Schedule also specifies those study courses in which the apprentice shall receive.

On-the-job training in the duties, and amount of such training, as specified in the Schedule shall apply to the extent that such duties are performed by journeymen where the apprentice is headquartered. In the event that certain of the required items of work experience are not being performed at a headquarters, and the training is therefore not available to the apprentice for his or her work experience record, the reason for this deficiency shall be noted in the apprentice's work record. The apprentice's progression through the apprenticeship steps will not be held up due to shortcomings of this nature; however, within the 6 months of the apprentice's final wage step and before the apprentice is eligible for promotion to journeyman, these deficiencies will be either waived or the training experience be created.

A. General Guide Lines

1. It is intended that assignment of training on the job for each period of the apprenticeship will be made to the apprentice as early in the period as is practicable.
2. Weeks shown on the Schedule exclude any travel time needed to reach the place where training is to be given; however, such weeks shall include time needed to prepare tools and equipment.
3. Apprentices shall be trained by assignment to work with qualified journeymen.

A. General Guide Lines (Continued)

4. Progressive work experience in all phases of electricians work will be provided throughout the six periods of the apprenticeship in accordance with the attached Schedule.
5. Upon entering each new wage step and period of training, the work assignments in the period shall be such that the apprentice will gain the basic knowledge and confidence in himself or herself, the equipment and the procedure being used. More complex assignments shall be made progressively as the apprentice gains in knowledge and capability.
6. An apprentice may be assigned to work without direct supervision only after he or she has performed such work under direct supervision; and is capable of performing such work safely.
7. During the first six months an apprentice shall not be assigned to work on any circuit energized in excess of 600 volts.

8. Notices

- (a) An apprentice who is scheduled to attend the Basic Electricity School shall be given notice of such assignment as early as possible by the Course Supervisor through his or her immediate supervisor.
- (b) When an apprentice attending the Basic Electricity School is not maintaining an acceptable level of work, notice shall be given to the Apprenticeship Committee with copies to the Foreman and the Manager's Office. Such notice shall also be given in the event he or she fails the school.
- (c) When an apprentice fails any Unit Course test, notice shall be given to the Foreman and General Foreman with copies to Union's Business Representative and Company's Industrial Relation Representatives.
- (d) If an apprentice does not maintain an acceptable on-the-job work level, notice shall be given to the Manager's Office with copies to Union's Business Representative and Company's Industrial Relation Representatives and Foreman's immediate supervisor.

B. Guide Lines for Training Periods

1. 0 to 6 Months' Step

During this period the apprentice shall learn the use and care of tools and equipment in the performance of Power Plant and/or Substation construction and other related work.

The apprentice will be assigned work experience as shown on the attached schedule and should qualify in at least 2 of the scheduled skills.

He or she shall become familiar with various standards and regulations applicable to the work that he or she performs and acquaint themselves with the safety aspects of their job.

B. Guide Lines for Training Period (Continued)

During this period the apprentice shall learn on his or her own time the following prerequisite academic courses: B-10 Basic Math, B-15 Basic Print Reading, B-16 Print Reading PGandE Drawings, B-20 Safety, B-35 Introduction to Electricity and Electronics and B-70 Cadwelding. The attached schedule shows that B-10, B-15, B-20 and B-70 are the first courses to be taken. The apprentice can select any one of the six courses they wish to study. Only one course of study will be given and must be successfully completed before the next course of study is issued. Course Units B-10, B-15 and B-20 must be completed before B-16 is issued and B-16 must be completed before B-35 is issued. Course Unit B-70 can be studied and completed any time during the next three time periods or 18 months. Five of the six prerequisite courses must be successfully completed during this period.

- (a) A unit test will be given after each course unit when the apprentice feels competent to take the test. (70% must be attained to pass a given unit lesson.) Should an apprentice fail to receive a passing score, he or she shall be given a notice in writing of the areas of study where deficiencies are evident.
- (b) After such failure, the apprentice shall be allowed to take a retest two weeks after notification. He or she will be allowed a maximum of three months to meet the established academic standards of achievement. Failure to meet this standard of achievement will then be reviewed by the Apprenticeship Committee to determine if additional extension of time is justified in order that the individual meet the standard of achievement. If additional extension is granted, and the apprentice still fails to meet the prescribed standards of achievement, he or she shall be automatically dropped from the program in accordance with Paragraph D-6 of the Master Apprenticeship Agreement.
- (c) A written/performance test will be given to the apprentice after successful completion of the unit test. The purpose of this test is to demonstrate to the Course Advisor and/or the Foreman that the apprentice can perform instructional test objectives derived from the course previously studied. The attached schedule shows which course units will require tests.

2. 7 - 12 Months' Step

The apprentice shall continue to perform functions of the prior period and, in addition, will be assigned work experience as shown on the attached schedule. During this period the apprentice will be required to qualify in at least 3 of the scheduled 15 skills and at the end of this period have qualified in 5 skills.

During this period the apprentice shall learn on his or her own time the following additional prerequisite academic courses: B-25 Operating Procedures and B-30 Receive and Store. The procedures for study and testing will be the same as outlined in Section B-1. A total of seven of the eight prerequisite courses should be completed by the end of this period.

B. Guide Lines for Training Period (Continued)

3. 13 - 18 Months' Step

The apprentice shall continue to perform functions of the prior periods and, in addition, will be assigned work experience as shown on the attached schedule. During this period the apprentice will be required to qualify in at least 2 of the scheduled 15 skills and at the end of this period have qualified in a total of 7 skills.

The apprentice shall continue to learn on his or her own time the following additional prerequisite academic courses: B-40 Rigging, B-55 Hand Tools, B-56 Power Tools and B-65 Conduit, Cable and Wire. The procedures for study and testing will be the same as outlined in Section B-1. All 12 prerequisite courses should be completed by the end of this period.

4. 19 - 24 Months' Step

As early as possible in this training period, the apprentice shall be assigned to the Basic Electricity School in Emeryville for classroom and testing procedures on basic electricity.

- (a) Agreed-upon tests will be given at the conclusion of the school and if he or she failed to receive a passing score, the apprentice shall be notified in writing of the reasons for his or her failing.
- (b) After such failure, the apprentice shall be allowed to take a retest two weeks after notification. Further failure will then be reviewed by the Apprenticeship Committee to determine if additional extension of time is justified. If additional extension is granted, and the apprentice still fails to pass the test successfully, he or she will be automatically dropped from the program in accordance with Paragraph D-6 of the Master Apprenticeship Agreement.
- (c) After successfully completing the 4 weeks of Basic Electricity School in Emeryville, the apprentice will be required to take and challenge the unit tests along with the written/performance tests for each of the following course units: E-10 D-C Theory, E-30 Transformers and Vectors, E-15 A-C Theory and E-16 Power Sources and Electric Motors. The tests for E-10 must be taken within one week after the completion of Basic Electricity School and the remaining course unit tests at intervals of 2 weeks.
- (d) Should an apprentice fail to receive a passing score, he or she shall be given a notice in writing of the areas of study where deficiencies are evident. The apprentice will then be given the course unit for study and will follow the procedures for study and testing as outlined in Section B-1 of these guide lines.

The apprentice shall continue to perform functions of the prior periods and, in addition, will be assigned work experience as shown on the attached schedule. During this period the apprentice will be required to qualify in at least 3 of the scheduled 15 skills and at the end of this period the apprentice shall have qualified in a total of 10 skills.

B. Guide Lines for Training Period (Continued)

The apprentice shall continue to learn on his or her own time the following additional academic courses: B-75 Field Testing. This course unit can be studied and completed any time during the next three time periods or 18 months. At the end of this period, the apprentice should have successfully completed; The Basic Electricity School in Emeryville and four of the five higher level academic courses.

5. 25 - 30 Months' Step

The apprentice shall continue to perform functions of the prior periods and, in addition, will be assigned work experience as shown on the attached schedule. During this period the apprentice will be required to qualify in at least 2 of the scheduled 15 skills and at the end of this period have qualified in 12 skills.

During this period the apprentice shall learn on his or own time the following additional higher level courses: E-20 Electronics, E-26 Schematics and Diagrams and E-35 Relays. The procedures for study and testing will be the same as outlined in Section B-1 of these guide lines. A total of seven of the eight higher level courses should be completed by the end of this period.

6. 31 - 36 Months' Step

The apprentice shall continue to perform functions of the prior periods and, in addition, will be assigned work experience as shown on the attached schedule. During this period the apprentice will be required to qualify in at least 3 of the scheduled 15 skills and at the end of this period have qualified in all 15 skills.

During this period the apprentice shall learn on his or her own time the following additional higher level academic courses: E-40 Electrical Measurement Instruments. The procedures for study and testing will be the same as outlined in Section B-1 of these guide lines. All 9 of the higher level academic courses should be completed by the end of this period.

The apprentice will be allowed to do any work normally performed by a journeyman, under the direction of a journeyman, as required by the job.

C. Records

1. It shall be the responsibility of each apprentice to maintain his or her own records in collaboration with each Foreman and Course Advisor to whom they are assigned.
2. It shall be the responsibility of each Foreman and Course Advisor to keep necessary files of records on each apprentice and to ascertain that each apprentice has a reasonable opportunity of meeting the Standards of Achievement set forth in these guide lines.
 - (a) At least once each month the Foreman and Course Advisor will review the Training Records in the presence of the apprentice to verify and up-date all records. To counsel the apprentice of consequences or deficiencies in skills and not maintaining the academic training schedules.

APPRENTICE ELECTRICIAN TRAINING PROGRAM

SCHEDULE

ON-THE-JOB ASSIGNMENTS

SKILL	QUALIFYING TIME	STANDARD OF ACHIEVEMENT	LOCATION OF WORK AREA
DUCT (Transite / Plastic)	5 weeks	Layout Excavate Fabricate Install Backfill	Power Plant & Substation
CONDUIT (Rigid or T.W.)	5 weeks	Layout Fabricate Install	Power Plant & Substation
STEEL STRUCTURES (Transmission, or Distribution, or Building)	6 weeks	Layout Rigging Assemble Erect	Substation
SWITCH ASSEMBLY - AIR (60 KV or above)	6 weeks	Layout Rigging Assemble Erect Adjust	Substation
BUS (Copper - Rigid or Cable) (Alum. - Rigid or Cable)	6 weeks	Layout Rigging Install Connect	Substation
TRANSFORMERS	6 weeks	Layout Rigging Assemble Adjust LTC Connect	Substation
REGULATORS	6 weeks	Layout Rigging Assemble Adjust LTC Connect	Substation
P.C.B.'s	6 weeks	Layout Rigging Assemble Adjust Connect	Power Plant & Substation

ON-THE-JOB ASSIGNMENTS (cont'd)

SKILL	QUALIFYING TIME	STANDARD OF ACHIEVEMENT	LOCATION OF WORK AREA
SWITCHBOARDS	6 weeks	Layout Fabricate Paint Install Panels Install Equip.	Power Plant & Substation
CABLE, INTERCONNECT H.V.	4 weeks	Layout Fabricate Rigging Install Connect	Power Plant & Substation
WIRING - CONTROL (Major Equipment)	8 weeks	Layout Fabricate Install Connect Dress	Power Plant & Substation
WIRING - SWITCHBOARDS	10 weeks	Layout Fabricate Install Connect Dress	Power Plant & Substation
WIRING - LIGHTING	4 weeks	Layout Fabricate Install Connect Dress	Power Plant & Substation
WIRING - GROUND	4 weeks	Layout Fabricate Install Connect	Power Plant & Substation
WIRING - CADWELDING	4 weeks	Layout Fabricate Install Connect Weld	Substation
PIPE AND TUBING (Steel, or Copper or Plastic.)	6 weeks	Layout Fabricate Install	Power Plant
CABLE TRAYS	6 weeks	Layout Fabricate Install	Power Plant

ON-THE-JOB ASSIGNMENTS (cont'd)

SKILL	QUALIFYING TIME	STANDARD OF ACHIEVEMENT	LOCATION OF WORK AREA
CONDUIT AND PIPE HANGERS	6 weeks	Layout Fabricate Install	Power Plant
FIELD TESTING	2 exposures each test	Megger Test Oil Test Ratio Test Polarity Test Speed Analysis Test Contact Resistance Test Ground Resistance Test H.V. Detection Test	Substation

ACADEMIC ASSIGNMENTS

B-10 BASIC MATH

The text for this unit is "Basic Shop Math" by TPC Training Systems. The average completion time is 20 hours home study, 1 hour unit test and 3 hours written/performance test.

B-15 BASIC PRINT READING

The text for this unit is "Basic Blueprint Reading" by TPC Training Systems. The average completion time is 20 hours home study and 1 hour unit test.

B-16 PRINT READING - PGandE DRAWINGS

The subject material for this unit is the use of PGandE's prints. Standard symbols and designations will be studied, followed by the application of actual construction field drawings, bills of material and standard drawings. The average completion time is 20 hours home study, 1 hour unit test and 3 hours written/performance test.

B-20 SAFETY

The text for this unit is PGandE's "Accident Prevention Rules" book together with subject material that is vital for the Apprentice to know. The average completion time is 9 hours home study, 1 hour unit test and 2 hours written/performance test.

B-25 OPERATING PROCEDURES

The subject material for this unit is PGandE's Operating and Construction Procedures together with Standard Practice and Substation Bulletins. The average completion time is 14 hours home study, 1 hour unit test and 3 hours written/performance test.

ACADEMIC ASSIGNMENTS (cont'd)

B-30 RECEIVE AND STORE

The subject material for this unit is PGandE's procedures for Receiving and Storing Material and Equipment. The average completion time is 16 hours home study, 1 hour unit test and 3 hours written/performance test.

B-35 INTRODUCTION TO ELECTRICITY AND ELECTRONICS

The text for this unit is "Introduction to Electricity and Electronics" by TPC Training Systems. The average completion time is 8 hours home study and 1 hour unit test.

B-40 RIGGING

The text for this unit is "Rigging" by TPC Training Systems. The average completion time is 12 hours home study, 1 hour unit test and 3 hours performance test.

B-55 HAND TOOLS

The text for this unit is "Hand Tools" by TPC Training Systems, and the textbook "Fundamentals of Carpentry" Volume 1, by Walter E Durbahn. The average completion time is 10 hours home study, 1 hour unit test and 1 hour written/performance test.

B-56 POWER TOOLS

The text for this unit is "Portable Power Tools" by TPC Training Systems. The average completion time is 20 hours home study, 1 hour unit test and 3 hours written/performance test.

B-65 CONDUIT, CABLE AND WIRE

The subject material for this unit is the use of PGandE's Engineering Standards and Drawings together with copies of data taken from the text "Handbook for Pipe and Rigid Conduit Bending" by Greenlee Tool Company. The average completion time is 18 hours home study, 1 hour unit test and 3 hours written/performance test.

B-70 CADWELDING

The text for this unit is "Instructions for Cadweld Electrical Connections" by Erico Products, Inc., together with PGandE's Standard Drawings. The average completion time is 3 hours performance test only.

BASIC ELECTRICITY SCHOOL

See attached schedule.

ACADEMIC ASSIGNMENTS (cont'd)

B-75 FIELD TESTING

The subject material for this unit is material prepared specifically for PGandE. Data from various manufacturer's manuals and instructions will be studied. The average completion is 16 hours home study, 1 hour unit test and 3 hours written/performance test.

E-10 D-C THEORY

The text for this unit is "Electricity One - Seven" by Harry Mileaf and published by Hayden Book Co. Inc.. The average completion time is 12 hours home study, 2 hours unit test and 3 hours written/performance test.

E-15 A-C THEORY

The text for this unit is "Electricity One - Seven" by Harry Mileaf and published by Hayden Book Co. Inc.. The average completion time is 15 hours home study, 2 hours unit test and 3 hours written/performance test.

E-16 POWER SOURCES AND ELECTRIC MOTORS

The text for this unit is "Electricity One - Seven" by Harry Mileaf and published by Hayden Book Co. Inc.. The average completion time is 12 hours home study, 2 hours unit test and 3 hours written/performance test.

E-20 ELECTRONICS

The texts for this unit is "Electronics Three" and "Electronics Four" by Harry Mileaf and published by Hayden Book Co. Inc.. The average completion time is 20 hours home study, 2 hours unit test and 2 hours written/performance test.

E-26 SCHEMATICS AND DIAGRAMS

The subject material for this unit is the use of PGandE's prints. Standard symbols and designations will be studied, followed by the application of actual field schematics and control circuits. The average completion time is 16 hours home study, 2 hours unit test and 3 hours written/performance test.

E-30 TRANSFORMERS AND VECTORS

The study material for this unit has been prepared by PGandE's Electric Operations Department. It explains the application of vectors in electric connections, the study of the construction, principles and application of high voltage transformers. It also covers the transformer connections. The average completion time is 18 hours home study, 2 hours unit test and 3 hours written test.

ACADEMIC ASSIGNMENTS (cont'd)

E-35 RELAYS

The subject material for this unit has been prepared by Station Construction Department Relay Technicians. It describes the different types of relays and their uses. Basic testing of these relays will be covered. The average completion time is 12 hours home study, 2 hours unit test and 2 hours written test.

E-40 ELECTRICAL MEASURING INSTRUMENTS

The text for this unit is "Electrical Measuring Instruments" by TPC Training Systems. The average completion time is 20 hours home study, 1 hour unit test and 3 hours written/performance test.

BASIC ELECTRICITY SCHOOL

SCHEDULE

1st week

Monday

Introduction and General Information.
Electrical Theory.
Magnetism.

Tuesday

Magnetism.
Electrical Equations and Math.
Batteries.
D-C Meters & Multi-Meters.

Wednesday

Mathematical equations, Electrical theory and Magnetism.
D-C series circuits, theory and problem solving.

Thursday

D-C parallel circuits, theory and problem solving

Friday

Series and parallel D-C circuits.
D-C combination circuits, theory and problem solving.

2nd week

Monday

Direct current circuits and test covering 1st weeks training.

Tuesday

Introduction to A-C and Electromagnetism.
Sine wave of alternating current. Film on A-C Generation.
Impedance and A-C Ohms Law.
Voltage and phase relationships in A-C circuits.

Wednesday

Power in A-C circuits. Meaning of power factor
Vectors used for showing voltage and current phase relationship. Test #4
Factors affecting alternating current.

Thursday

Factors affecting A-C.
Resistance and inductance in A-C circuits.
Resistance and capacitance in A-C circuits.
Resistance, inductance and capacitance in A-C circuits.

Friday

A-C series circuits. Test #5
High Voltage demonstration.

3rd week

Monday

Description of basic meter movements and how they are used.
Description of rectifiers and bridge rectifiers.
Description of phase sequence indicators.
Demonstration of uses of the above equipment.
Demonstration of A-C series circuit.

Tuesday

Test #6. Film on A-C and D-C Generation.
Generators.
A-C Generators
3 phase vectors for wye and delta connections. Test #7

BASIC ELECTRICITY SCHOOL

SCHEDULE (cont'd)

Wednesday

Batteries.

Motors.

Thermal effect of electric current fuses and circuit breakers.

Thursday

Test covering prior weeks training.

Safety.

Transformers.

Friday

Transformer construction and operation.

Transformer nameplates and ratios.

Single phase transformers.

KVA and power formula single phase and 3 phase.

Rubber goods test demonstrations.

4th week

Monday

Single phase transformer; use and connections.

Use of vectors for connecting transformers; wye-wye.

Tuesday

Use of vectors for connecting transformers; wye-delta.

Development of power legs in delta connected secondaries. Test #9.

Use of vectors for connecting transformers; delta-delta.

Wednesday

Use of vectors for connecting transformers; delta-delta.

Use of vectors for connecting transformers; delta-wye.

Open delta-open delta use and connections. Test #10.

Thursday

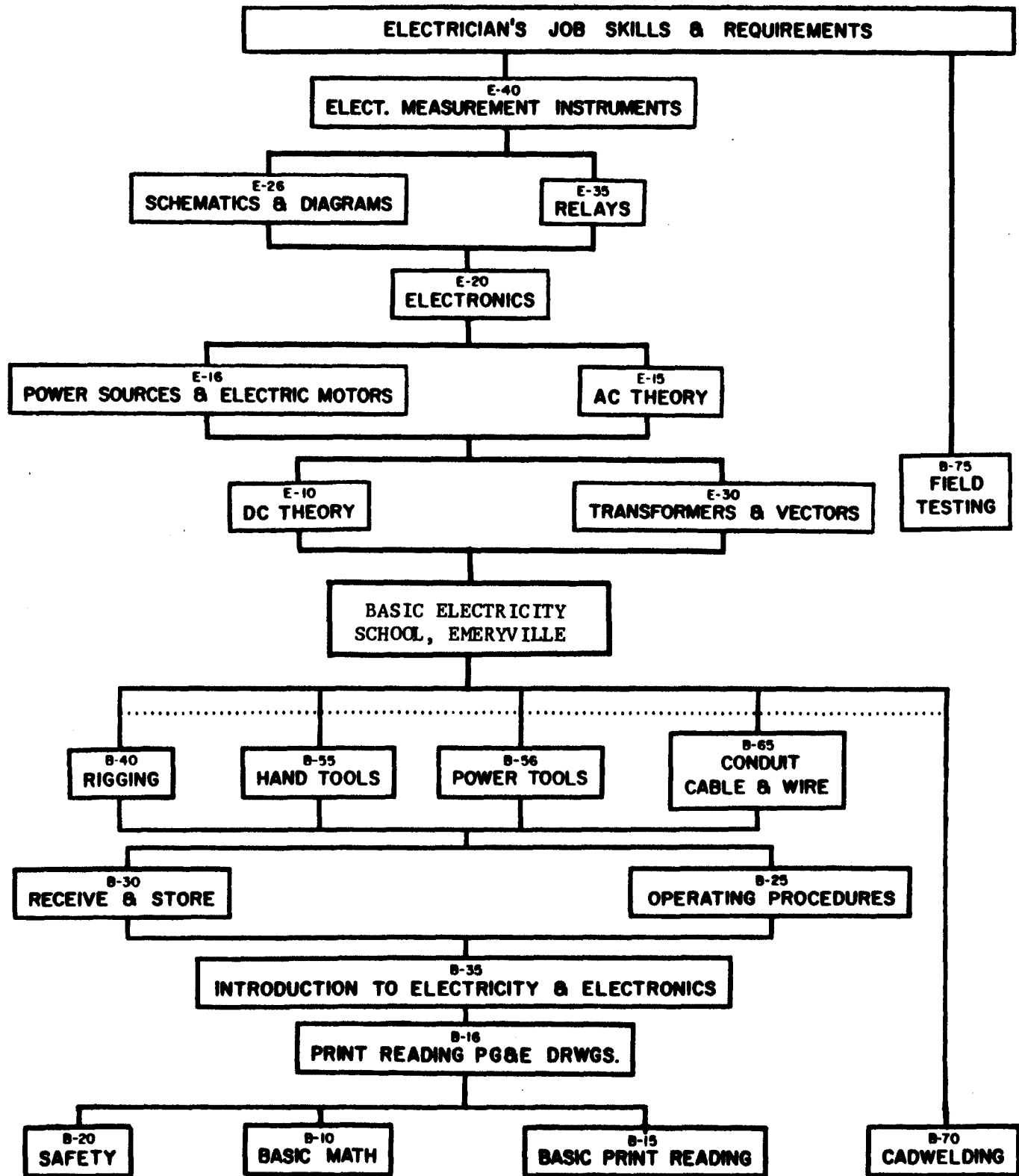
Open wye-open delta use and connections.

Special purpose transformers; use and connection. Test #11

Friday

Final Examination

Student Counseling and Evaluation.



**COURS
MAP**

ACADEMIC PROGRESS CHART

NAME _____ CRAFT _____ S.S.No. _____ START DATE _____ 19__

UNIT NO.	COURSE	DATE REC'D	UNIT LESSONS COMPLETED DATE	UNIT TEST DATE & GRADE	PERFORMANCE TEST DATE & GRADE
B-10	Basic Math				
B-15	Basic Print Reading				
B-16	Print Reading P.G.&E. Drawings				
B-20	Safety				
B-25	Operating Procedures				
B-30	Receive and Store				
B-35	Intro. to Electricity & Electronics				
B-40	Rigging				
B-55	Hand Tools				
B-56	Power Tools				
B-65	Conduit, Cable & Wire				
B-70	Cadwelding				
B-75	Field Testing				
Basic Electricity School - Emeryville					
Start () Complete ()					
E-10	D-C Theory				
E-15	A-C Theory				
E-16	Power Sources & Electric Motors				
E-20	Electronics				
E-26	Schematics & Diagrams				
E-30	Transformers & Vectors				
E-35	Relays				
E-40	Electrical Measurement Instruments				