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ABSTRACT

Designed for use in basic electronics programs, this curriculum guide is comprised of twenty-nine units of instruction in five major content areas: Orientation, Basic Principles of Electricity/Electronics, Fundamentals of Direct Current, Fundamentals of Alternating Current, and Applying for a Job. Each instructional unit includes some or all of the basic components of a unit of instruction: performance objectives, suggested activities for teachers and students, information sheets, assignment sheets, visual aids, tests, and answers to the test. It is noted that each unit is planned for more than one lesson or class period of instruction. Among the units included in section 3, Fundamentals of Direct Current, are the following: Circuit Fundamentals, Resistance, Voltage and Measurement, Conductors and Insulators, Series Circuits, and Magnetism. In the fourth section unit topics include The Nature of Alternating Current, Inductance, Capacitance, and Capacitive Reactance. (IFA)

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BASIC ELECTRONICS I

by
L. Paul Robertson

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USE OF THIS INFORMATION

Instructional Units

The *Basic Electronics I* curriculum includes 20 units. Each instructional unit includes some or all of the basic components of a unit of instruction: performance objectives, suggested activities for teachers and students, information sheets, assignment sheets, visual aids, tests, and answers to the test. Units are planned for more than one lesson or class period of instruction.

Careful study of each instructional unit by the teacher will help determine:

- A. The amount of material that can be covered in each class period
- B. The skills which must be demonstrated
 - 1. Supplies needed
 - 2. Equipment needed
 - 3. Amount of practice needed
 - 4. Amount of class time needed for demonstrations
- C. Supplementary materials such as pamphlets or filmstrips that must be ordered
- D. Resource people who must be contacted

Objectives

Each unit of instruction is based on performance objectives. These objectives state the goals of the course, thus providing a sense of direction and accomplishment for the student.

Performance objectives are stated in two forms: unit objectives, stating the subject matter to be covered in a unit of instruction; and specific objectives, stating the student performance necessary to reach the unit objective.

Since the objectives of the unit provide direction for the teaching-learning process, it is important for the teacher and students to have a common understanding of the intent of the objectives. A limited number of performance terms have been used in the objectives for this curriculum to assist in promoting the effectiveness of the communication among all individuals using the materials.

Following is a list of performance terms and their synonyms which may have been used in this material:

<u>Name</u>	<u>Identify</u>	<u>Describe</u>
Label	Select	Define
List in writing	Mark	Discuss in writing
List orally	Point out	Discuss orally
Letter	Pick out	Interpret
Record	Choose	Tell how
Repeat	Locate	Tell what
Give		Explain

Order
 Arrange
 Sequence
 List in order
 Classify
 Divide
 Isolate

Distinguish
 Discriminate

Construct
 Draw
 Make
 Build
 Design
 Formulate
 Reproduce
 Transcribe
 Reduce
 Increase
 Figure

Demonstrate
 Show your work
 Show procedure
 Perform an experiment
 Perform the steps
 Operate
 Remove
 Replace
 Turn off/on
 (Dis) assemble
 (Dis) connect

Additional Terms Used
 Evaluate
 Complete
 Analyze
 Calculate
 Estimate
 Plan
 Observe
 Compare
 Determine
 Perform

Prepare
 Make
 Read
 Tell
 Teach
 Converse
 Lead
 State
 Write

Reading of the objectives by the student should be followed by a class discussion to answer any questions concerning performance requirements for each instructional unit.

Teachers should feel free to add objectives which will fit the material to the needs of the students and community. When teachers add objectives, they should remember to supply the needed information, assignment and/or job sheets, and criterion tests.

Suggested Activities

Each unit of instruction has a suggested activities sheet outlining steps to follow in accomplishing specific objectives. The activities are listed according to whether they are the responsibility of the instructor or the student.

Instructor: Duties of the instructor will vary according to the particular unit; however, for best use of the material they should include the following: provide students with objective sheet, information sheet, assignment sheets, and job sheets; preview filmstrips, make transparencies, and arrange for resource materials and people; discuss unit and specific objectives and information sheet; give test. Teachers are encouraged to use any additional instructional activities and teaching methods to aid students in accomplishing the objectives.

Information Sheets

Information sheets provide content essential for meeting the cognitive (knowledge) objectives in the unit. The teacher will find that the information sheets serve as an excellent guide for presenting the background knowledge necessary to develop the skill specified in the unit objective.

Students should read the information sheets before the information is discussed in class. Students may take additional notes on the information sheets.