

Course Title

Electronics 1A

Description of Target Group

This course is for sophomores, juniors, and seniors who have completed the Survey of Electronics course, and want to gain a more thorough knowledge of electronics. A student may also qualify to take this course by obtaining the instructor's approval, in writing.

Purpose

Electronics 1A is the first term of a one-year course, and is to prepare the student for entry-level positions in the electronics industries. It is also a good foundation for students pursuing engineering majors in college. It is assumed that students will continue with the Electronics 1B course.

Prerequisites: Passing Survey of Electronics, Automotive Fundamentals, or Physics

Standards of Expected Student Achievement

Upon successful completion of this course, students will be able to demonstrate the following knowledge/skills:

1. Safety related to the electronics industry
2. Proficiency with digital multi-meter
3. Use of the Proto Board
4. Calculations of voltage, current, and resistance in DC circuits
5. Identify series and parallel circuits
6. Soldering and de-soldering electronic assemblies
7. Solving basic Ohm's Law calculations

Assessment of Student Learning

1. Students will present evidence of learning by cooperating with group or individual assignments and presentations based on projects and skills.
2. Students will present evidence of learning by presenting ideas, solutions and conclusions to proposed or presented problems.
3. Students will present evidence of learning through teacher observations.
4. Students will present evidence of learning through quizzes, tests, and homework.
5. Teacher evaluations.

Instructional Materials

Text: Introduction to Electronics, Earl D. Gates

Supplementary Materials: Manufacturers documentation; videos

Activities

Lab experimentation, lectures, class participation, demonstrations, audio visual materials, field trips, small group activities, outside resource people, and electronic assembly.

Revised: July 2001

Course Title

Electronics 1B

Description of Target Group

This course is for sophomores, juniors, and seniors who have completed Electronics 1A, and wish to continue their study of electronics. A student may also qualify to take this course by obtaining the instructor's approval, in writing.

Purpose

The purpose of Electronics 1B, the second term of a one-year course, is to prepare the student for entry level positions in the electronics industries. It is also a good foundation for students pursuing engineering majors in college.

Prerequisites: Passing Electronics 1A

Standards of Expected Student Achievement

Upon successful completion of this course, students will be able to demonstrate the following knowledge/skills:

1. Assemble simple circuits from schematic diagrams
2. Use the Proto Board to test electronic circuits
3. Use of capacitors, transistors, diodes, silicon controlled rectifiers
4. Locate faults in simulated automotive circuits
5. Knowledge of basic AC signals
6. Understand the operation of the oscilloscope
7. Understand the basic operation of the TV, VCR, CD player, and computer

Assessment of Student Learning

1. Students will present evidence of learning by cooperating with group or individual assignments and presentations based on projects and skills.
2. Students will present evidence of learning by presenting ideas, solutions and conclusions to proposed or presented problems.
3. Students will present evidence of learning through teacher observations.
4. Students will present evidence of learning through quizzes, tests, and homework.
5. Teacher evaluations.

Instructional Materials

Text: Introduction to Electronics, Earl D. Gates

Supplementary Materials: Manufacturers documentation; videos

Activities

Lab experimentation, lectures, class participation, demonstrations, audio visual materials, field trips, small group activities, outside resource people, and electronic assembly.