

Course Name: Electronics I

Program of Study: Manufacturing

Subcategory: Manufacturing Technology Occupations

Anoka-Hennepin Number: 76310 (Electronics I)

State Prog. Code: 171710 - **Course Code:** 5

Number Days: 58 **Approx. Hrs.:** 65 - **Term:** 1 Tri

Number of Credits: 5

Prerequisites: None

Brief Description: Elective open to grades 9, 10, 11, and 12. This course gives students the opportunity to develop a basic understanding in electricity and electronics. The course includes the use of testing equipment and teaches fundamental calculation of values in given circuits. Students will examine how electronic circuits are designed and used in home, work and leisure activities. Students will have an opportunity to build their own electronic device.

Course Outcomes: The following topics will be addressed:

A. Safety

1. Understand and demonstrate proper safety procedures in the area of dress, eye hazard, behavior, and accident procedures
2. Understand and demonstrate safe operation of equipment and tools.
3. Understand and demonstrate safe habits while working with high voltage
4. Understand safe handling and disposal of hazardous materials.
5. Understand and demonstrate proper shop maintenance and organization.

B. Content

1. Students will be able to build, test and dismantle temporary circuits from a given schematic.
2. Students will also be able to test these circuits and troubleshoot any problems.
3. Using Ohm's law, Watt's law and other basic electronic principles, students will find missing values in a given circuit.
4. Students will construct and program robots
5. Through building permanent electronic devices, students will develop soldering skills on progressively challenging projects

Methods: This course will include required reading that relates to the instructional units listed, lectures, discussions, demonstrations, and self-paced work. Although this is a hands-on course, it will be necessary for students to become familiar with new terms, concepts and processes before practicing new skills. All lectures and demonstrations are followed by activities that allow students to more fully understand the presented material.

Evaluation: The grade for this course will be based on the following:

- A - 100% - 90%
- B - 89% - 80%
- C - 79% - 70%
- D - 69% - 60%
- F - 59% or below

Grades will consist of tests, quizzes, activities, assignments, participation and attendance.

Resources: The following resources are needed daily for this course:

- Pen or Pencil
- Folder
- Notebook
- Safety glasses
- Appropriate clothing for work in class - See instructor for complete list of appropriate clothing as different classes have different requirements.

Attend. & Conduct: Attendance and class participation are critical to the student's success in understanding and gaining familiarity with CTE concepts. Please notify the instructor if you will be missing any classes. Students are expected to submit their own work for this course. Academic dishonesty will NOT be tolerated. This includes copying the work of other

students during examinations; unauthorized collaboration on homework and project assignments; unauthorized use of the internet to obtain homework and/or test answers; representing work done by others as your own.

College Credit or Professional Certification: Pending

Coll Cr (if any):

School(s) Accepting Credit:

Hrs Toward Prof. Cert. (if any): 0 Qualification Method: Course compl. w/specified grade

Details: