

# **RACTC High Technology Equipment**

## **Participating Schools (9)**

Belfield  
Glen Ullin  
Hebron  
Hettinger  
Killdeer  
New England  
New Salem  
Scranton  
South Heart

## **Cost per member school:**

Each of the member school pays a yearly membership of \$2500.00 to participate in this program. The North Dakota Career and Technical Education department funds the RACTC at \$4500 per school per year for the purchase of Hi Tech Equipment and instructor training. ( $\$4500 \times 9 = \$40500.00$ ). Equipment repair and the expense to rotate the equipment is the responsibility of the RACTC.

## **Premise:**

The present and future workforce demands that students be technologically literate to succeed in a highly competitive and global market. If our students are to remain competitive in a highly technological workforce, they must have a fundamental understanding through experimental learning, the technological principals that will prepare them for future education and careers.

## **Current Modules:**

### **Hydraulic/ Pneumatic/ Mechanical \$28000.00**

This module is intended to teach the core concepts of mechanical/industrial technology. The trainers include all parts necessary to learn the basic principles of mechanics, pneumatics and hydraulics. Exposure to core industrial technology skills sets the foundation necessary to study today's more sophisticated technologies.

### **Biotechnolgy \$14000.00**

In this unit the student is led through a series of experiments in DNA extraction and plant growth cycle. This unit contains all the equipment and perishable supplies required to extract and analyze DNA and to observe the plant life cycle. The module uses rapid cycling Wisconsin Fast Plants developed at the University of Wisconsin and DNA and enzymes from the National Center of Biotechnology Education in Reading, England.

### **Global Positioning Systems/ Global Information Systems \$10000.00**

This unit introduces students to the complete study of GPS functions and operation. It also introduces GSI data base with hands-on activities which incorporate GPS and GIS databases.

**CNC Router \$30000.00**

This module is intended to teach computer numerical control and machining concepts. Students experience the design, programming and production of a finished part. A CNC Router is used to produce the finished product using a variety of materials. Mastercam is the software used to draft and design parts. The module uses industry standard CAD (Computer Aided Drafting) and CAM (Computer Aided Manufacturing) software to teach students how CNC (Computer Numeric Control) is used to drive today's automated manufacturing systems.

**Laser Engraver \$31000.00**

This module is designed to take students from manipulating graphics to production of a final product. The module is ideally suited for preparing students for the rapidly increasing demand for workers in the graphics and production career area.

**Portable Welder \$15000.00**

This module is designed to provide students with access to different types of portable welders. The student is led through proper safety, startup maintenance, and operation of portable welding. Students will weld using portable SMAW and GMAW.

**Embroidery \$25000.00**

The Commercial Embroidery module is intended to continue CNC principals based on the Universal Coordinate System and the plotting points in the form of stitches. The embroidery machine in the module is a 15 needle industrial grade machine. It utilizes computers with embroidery digitizing and editing software and auto-digitizing software. Students are exposed to cost and time of manufacturing using switch calculating software.

**3-D Printer \$30000.00**

The 3-D printer unit is designed to teach students the principles of 3-D drafting using the SolidWorks program that allows the student to then manufacture the part using the Uprint 3-D printer. In industry the 3-D printer is used to manufacture the prototype part before production.

**Vinyl Printer/Cutter \$20000.00**

The vinyl printer/cutter unit will allow students to design and manufacture vinyl transfers using the CorelDraw program. It includes a t-shirt press for applying transfers to t-shirts. The unit helps prepare students for the fast growing graphics and production career area.