



# Power Technology Course Syllabus

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Huron Area Tech Center  
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## **Course Description:**

This program will help prepare you for a challenging occupation, ranging from a heavy equipment technician, equipment operator, parts/equipment sales field, off-road equipment or A.T.V. business. Or individualized program enables students to maintain and repair recreational, agricultural, and heavy equipment. Students will tune up, troubleshoot, and overhaul gasoline and diesel engines. Students will also become familiar with suspension, power trains, hydraulics, air-conditioning, and electronics. Welding fabrication is also learned as part of this program. Students have the option of obtaining state Mechanical Certification as well as earning potential articulation credits through our NATEF certification in Medium/Heavy truck repair.

Upon completion of this course students will be able to:

- Perform basic welding and fabrication tasks.
- Perform preventative maintenance on diesel heavy and medium duty vehicles.
- Completely disassemble and reassemble a single cylinder gas small engine.
- Perform hydraulic preventative maintenance and basic repairs.
- Work in a shop or job site in a safe and productive manner.
- Have a basic idea if how to operate equipment like a forklift and backhoe.

## **Required Materials/Dress: [optional]**

All students are required to wear safety glasses and leather work boots at all times while in the shop. Students are required to dress appropriately for the work being performed. (when welding wear a welding jacket and helmet. When running a grinder or drill press proper face shield and hearing protection) All PPE is provided by the HATC with the exception of welding helmets due to Covid-19 as well as work boots.

## **Course Segments:**

- Course Pre-Test Evaluation
- Shop Safety and OSHA training
- Shop Fundamentals
- Electrical
- Welding and metal fabrication
- Small engine
- Diesel technology
- Hydraulics
- Career Readiness
- Course Post-test Evaluation

## **Grading Criteria**

Based on the HATC Student Handbook, the grading criteria is broken into two areas: academic performance (60%) and daily work ethic (40%).

<b><u>Academic Standard (60%)</u></b>	<b><u>Work Ethic Standard (40%)</u></b>
60% of the grades is based on <b>academic performance</b> from skills such as:	40% of the grade is based on <b>daily work ethic</b> in the following:
Hands on task Technical reading Quizzes Tests Journals Etc.	Attendance / Punctuality Personal Management Positive Attitude Initiative / Effort Cooperation Time Management Safety Practices Following Directions

## **Guidelines for Success:**

1. Students will be prepared.
2. Students will work in a clean, neat and professional manner.
3. Students will learn employability and career development skills.
4. Students will learn personal management skills
5. Students will learn specific occupational skills.
6. Students will learn systems thinking /problem solving skills
7. Students will learn workplace communication skills

## **Articulation:**

See full articulation with the following colleges here:

<https://huron.schoolinsites.com/powertechnology>

- Ferris
- State University
- Baker College
- Delta College
- Davenport University

## **Available Credentials:**

- OSHA Agriculture general industry certification through Career Safe
- Welding Certification through Mid-Michigan Community College
- Snap on multi-meter certification through NC3
- CDL (commercial driver license)
- Small engine technician certification through ICEV
- Obtain forklift operator certification
- On-the-job training OJT
- Welding simulator training
- Backhoe simulator training
- Sp2 welding/heavy duty diesel certificate

### **Online Delivery:**

All tests and daily assignments are done through various online courses.

- Google classroom
- ICEV
- SP2
- Career Safe

### **Work-Based Learning:**

Second year students are allowed to participate in on the job training through local businesses through the county. Occupations have to be pre-approved by Mr. Meissner and administration. These positions have to be a related occupation to the power technology program. Students are not allowed to do OJT through a family farm or business.

### **Safety Training**

- OSHA Career Safe Agricultural General Industry Training
- ICEV online shop safety
- ICEV online welding safety
- SP2 online welding course
- SP2 online Heavy Duty/Diesel technology Safety
- SP2 Valvoline automotive chemicals 101
- Armstrong Industrial hand tools safety training.

### **Student Leadership:**

- Opportunity to compete on the IVD (innovative vehicle design) team and compete at Kettering University
- Opportunity to compete in the Skills USA competition.

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