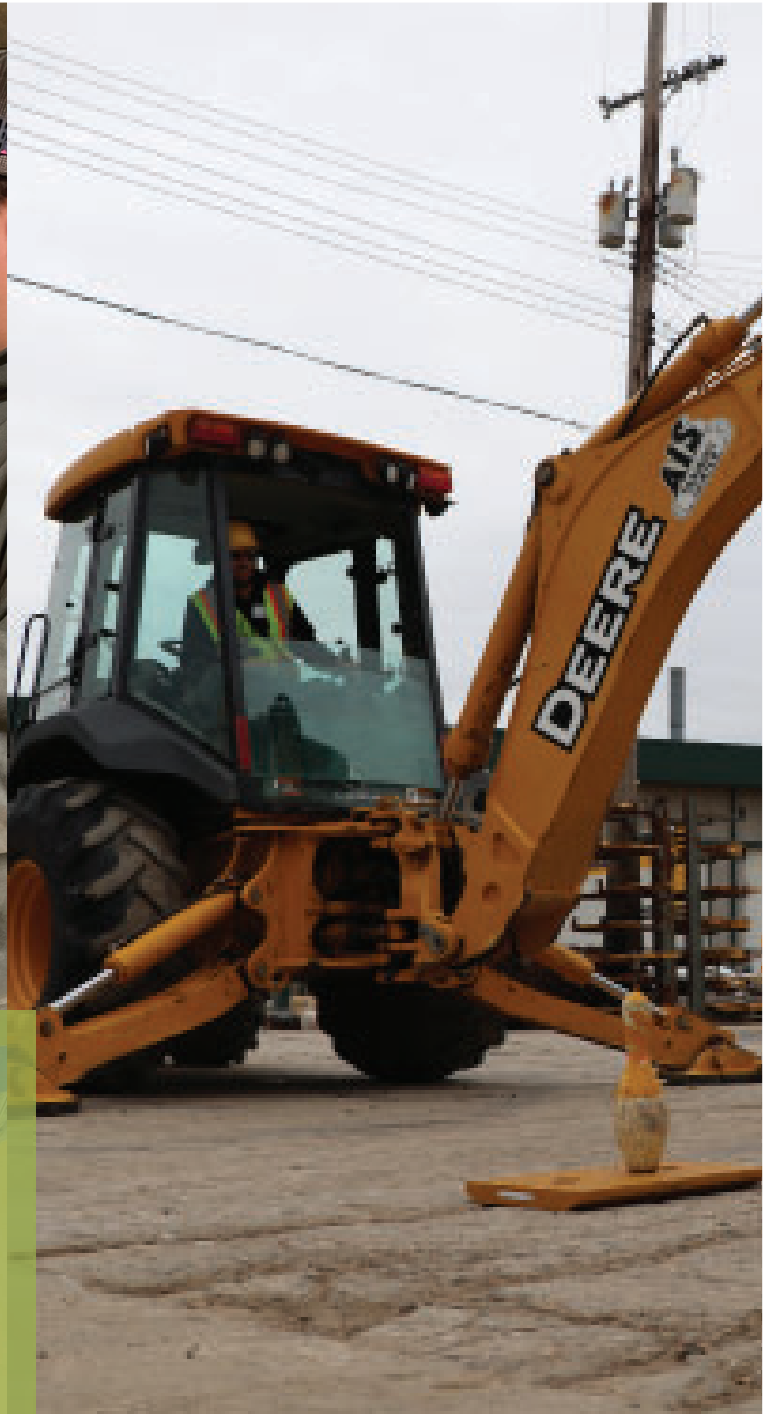


# ENGINEERING, MANUFACTURING AND INDUSTRIAL TECHNOLOGY HEAVY EQUIPMENT OPERATION & REPAIR



## PROGRAM LOCATION

AIS Construction Equipment Company (shuttle available)

## SESSION OFFERED

AM/PM

## AVERAGE LECTURE DAYS/WEEK

2-3 days

## AVERAGE LAB DAYS/WEEK

2-3 days

## HOMEWORK

None

## REQUIRED READING

Workbooks



EXPLORE THE POSSIBILITIES.  
FAST TRACK YOUR FUTURE.

This program provides students with an orientation to the heavy equipment industry including heavy equipment safety, equipment maintenance and basic operation techniques. This is a unique opportunity for you to be trained at AIS Construction Equipment Corporation. AIS is one of the premier heavy equipment sales and service dealers in Michigan. Tasks and skills learned will include: diesel engine diagnosis and repair; basic electricity and electronics; fundamentals of hydraulics including tearing down and assembling hydraulic components and cylinders; heavy equipment powertrains; disassembling and reassembling transmissions and axle assemblies. All students will be exposed to operation of heavy equipment including excavator, bulldozer, front end loader, backhoe and forklift as it relates to underground construction including grades, below grade construction, and earth moving. This is a two-year program. If college level work is attained, student may earn up to 5 articulated by exam LCC credits.

### EXPECTED STUDENT OUTCOMES

- Safety precautions in Heavy Equipment repair and operation
- Basic tool identification and shop principles, procedures and maintenance
- Select the appropriate hand and power tool(s) to perform automotive repairs.
- Demonstrate safe use of battery jumper cables on battery terminals or remote jump points.
- Operate floor jack and position safety stands to allow for safe vehicle servicing.
- Diesel engine operation, troubleshooting, disassembly and assembly
- Basic electrical and electronics in heavy equipment machinery
- Heavy Equipment powertrain identification and operation
- Heavy equipment hydraulic principles, operation and repair
- Identify and perform a safety inspection on all types of construction equipment.
- Name and explain the use of attachments for various pieces of construction equipment.
- National Center for Construction Education and Research (Entry Level Certification) in:
  - Heavy Equipment Safety
  - Basic Safety
  - Orientation to the trade
  - Identification of heavy equipment
  - Basic Operational Techniques

### CAREERS

Bus Mechanic  
CDL Driver/Truck Driver  
Crane and Tower Operator  
Diesel Mechanic  
Excavating Operator  
Farm Equipment Mechanic  
Highway Maintenance Worker  
Heavy Equipment Laborer  
Heavy Equipment Operator  
Landscape Pipe Layers  
Service Technician

### MEDIAN WAGE

\$23.73 hourly

### EMPLOYMENT OUTLOOK

Average, 5-9%

### CERTIFICATIONS

CPR/First Aid

### SUCCESS INDICATORS

Mechanically inclined, detail oriented, focused, good at troubleshooting, have strong hand/eye coordination, able to read and understand service manuals, and have strong communication skills.

### STUDENT LEADERSHIP

Students have the opportunity for leadership, competition, and community service through membership in SkillsUSA.

### ARTICULATED COLLEGE CREDIT

HERT 110 - Equipment Introduction

### ACADEMIC RIGOR

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