



# DIESEL & HEAVY EQUIPMENT TECHNICIAN ASSISTANT

**Technical Diploma**  
**Program Code: 31-412-2**  
**Total Credits: 29**

Mid-State's Diesel & Heavy Equipment Technician Assistant program provides students with the knowledge and technical skills needed to perform basic maintenance and light repairs in the following areas: brakes, hydraulics, suspension and steering, drive train, tire service, basic electricity, and preventive maintenance inspection. This one-year option is ideal for students looking to work in a fleet environment. Through hands-on classroom learning and training on state-of-the-art equipment, you will learn to perform preventive maintenance, inspection, and light repairs. You'll also participate in field trips, tours, and equipment demonstrations, and you'll get real-world experience by maintaining Mid-State's vehicle fleet and operating onsite equipment.

**Estimated tuition and fees:** [mstc.edu/programcosts](http://mstc.edu/programcosts)

## ACADEMIC ADVISOR

To schedule an appointment with an academic advisor, call 715.422.5300. Academic advisors will travel to other campuses as necessary to accommodate student needs. For more information about advising, visit [mstc.edu/advising](http://mstc.edu/advising).

## NEW STUDENT CHECKLIST

Complete the following steps to prepare for your New Student Advising appointment with your academic advisor:

- ☐ Submit a Mid-State application at [mstc.edu/apply](http://mstc.edu/apply).
- ☐ Send official transcripts to:  
Mid-State Technical College  
Student Services  
1001 Centerpoint Drive  
Stevens Point, WI 54481
- ☐ Complete the Free Application for Federal Student Aid (FAFSA) at [fafsa.gov](http://fafsa.gov). Mid-State's Financial Aid team is available to assist with your FAFSA application and to answer your financial aid questions. Contact Financial Aid or schedule an appointment at [mstc.edu/financial-aid](http://mstc.edu/financial-aid).
- ☐ Set up student MyCampus account at [mstc.edu/mycampus-assistance](http://mstc.edu/mycampus-assistance).
- ☐ Schedule a New Student Advising appointment at [mstc.edu/advising](http://mstc.edu/advising).



[mstc.edu](http://mstc.edu) • 888.575.6782 • TTY: 711



**ADAMS CAMPUS**  
 401 North Main  
 Adams, WI 53910

**MARSHFIELD CAMPUS**  
 2600 West 5th Street  
 Marshfield, WI 54449

**STEVENS POINT  
 DOWNTOWN CAMPUS**  
 1001 Centerpoint Drive  
 Stevens Point, WI 54481

**WISCONSIN RAPIDS CAMPUS**  
 500 32nd Street North  
 Wisconsin Rapids, WI 54494

# CAREER PATHWAY • BEGIN AT ANY POINT



## CREDIT FOR PRIOR LEARNING AND EXPERIENCE

### CREDIT FOR PRIOR LEARNING AND EXPERIENCE

- Certifications and Licenses
- High School Credit
- Military Experience
- National/Standardized Exams
- Transfer Credit
- Work and Life Experience

Learn about Credit for Prior Learning at [mstc.edu/cpl](https://mstc.edu/cpl).

## TECHNICAL DIPLOMA

### DIESEL & HEAVY EQUIPMENT TECHNICIAN ASSISTANT

Technical Diploma • 29 Credits

#### Start Your Career

- Light Maintenance Technician
- Parts Associate
- Undercarriage Technician

### DIESEL & HEAVY EQUIPMENT TECHNICIAN

Technical Diploma • 58 Credits

#### Start Your Career

- Bus and Truck Technician
- Heavy Equipment Technician
- Fleet Maintenance Technician

## BACHELOR'S DEGREE

### BACHELOR'S DEGREE OPTIONS

For those interested in continuing their education, Mid-State offers transfer agreements with various four-year colleges and universities. For more information and additional opportunities, visit [mstc.edu/transfer](https://mstc.edu/transfer).

## OTHER OPTIONS

### RELATED PROGRAMS

- Automotive Maintenance Technician
- Automotive Technician

Employers will expect you, as a Diesel & Heavy Equipment Technician Assistant graduate, to be able to:

Provides an introduction to algebra. Includes operations on real numbers, solving linear equations, percent and proportion, and an introduction to polynomials and statistics. Prepares students for elementary algebra and subsequent algebra-related courses.

## SAMPLE FULL-TIME CURRICULUM OPTION

Term		15 credits
10457119	Fabrication Fundamentals 1	1
31442320	Welding Foundations 1 ☑	1
31442321	Welding Foundations 2	1
32412308	Braking Systems-Diesel	5
32412309	Suspension & Steering Systems	5
32412340	Intro to Electricity for the Diesel Industry ☑	1
32412375	Service Practices in Diesel Industry ☑	1

Term		14 credits
31801368	Workplace Communication ☑	1
32412305	Preventive Maintenance-Diesel	3
32412312	Drivetrains	4
32412313	Electrical Systems	4
32462302	Mobile Hydraulics	2

**Total credits 29**

☑ This course has options available to receive credit for prior learning (CPL) or work experience. Visit the website at [mstc.edu/cpl](http://mstc.edu/cpl) or contact your advisor for details.

Please Note:

- This curriculum sequence is only for student planning. Actual student schedules will vary depending on course availability.
- Program completion time may vary based on student scheduling and course availability. For details, go to [mstc.edu/schedule](http://mstc.edu/schedule).

## SAMPLE PART-TIME CURRICULUM OPTION

Term		9 credits
10457119	Fabrication Fundamentals 1	1
31442320	Welding Foundations 1 ☑	1
31442321	Welding Foundations 2	1
32412309	Suspension & Steering Systems	5
32412375	Service Practices in Diesel Industry ☑	1

Term		6 credits
32412312	Drivetrains	4
32462302	Mobile Hydraulics	2

Term		7 credits
31801368	Workplace Communication ☑	1
32412308	Braking Systems-Diesel	5
32412340	Intro to Electricity for the Diesel Industry ☑	1

Term		7 credits
32412305	Preventive Maintenance-Diesel	3
32412313	Electrical Systems	4

**Total credits 29**

## COURSE DESCRIPTIONS

### Braking Systems-Diesel

**32412308 ..... 5 credits**

Learners employ fundamentals of vehicle braking systems, including drum, disc, hydraulic, and air systems to perform on vehicle diagnosis and repairs. Includes power and anti-skid systems, with emphasis on troubleshooting and component replacement.

### Drivetrains

**32412312 ..... 4 credits**

Learners practice on-vehicle diagnosis and repair of clutches, manual transmissions, drive shafts and universal joints, and drive axles. Provides general overview of the most common transmissions and drive train components used in industry. The diagnostic and service procedures studied apply to the truck, construction, and heavy equipment industries.

*Prerequisites: Suspension & Steering Systems 32412309 and Braking Systems-Diesel 32412308*

### Electrical Systems

**32412313 ..... 4 credits**

Learners employ principles of construction, function, and operation of batteries, starting systems, charging systems, and controls. Incorporates basic electronics, including series and parallel circuits, magnetism and Ohm's Law, wiring schematics, soldering techniques, and use of diagnostic equipment.

*Prerequisite: Intro to Electricity for the Diesel Industry 32412340*

### Fabrication Fundamentals 1

**10457119..... 1 credit**

An introduction to structural shapes and sheet metal fabrication. Presents fabrication techniques, metal selection, and layout, cutting, bending, drilling, threading, and joining using manual equipment and techniques. Information is presented to the student and followed up with lab activities to provide a hands-on experience. Emphasizes developing an understanding of the tools, techniques, safe work habits, and application of sheet metal fabrication skills.

### Intro to Electricity for the Diesel Industry ☑

**32412340 ..... 1 credit**

Introduces learners to electrical measurement tools and techniques. Includes both hands-on experience and theory on topics including multimeter operation, Ohm's law, wiring diagram interpretation, and circuit testing. Content is focused on tools and procedures commonly used in automotive, and diesel/heavy equipment industries. Learners will have the opportunity to earn NC3 multimeter certification during this course.

# COURSE DESCRIPTIONS

## Mobile Hydraulics

**32462302 .....2 credits**

Learners employ basic principles and application of pumps, compressors, motors, valves, actuators, and conductors to demonstrate the understanding of hydraulic systems as well as the physical properties of liquids. Learners will identify various parts of a circuit in order to perform light maintenance and troubleshooting in hydraulic systems used on heavy truck, earth-moving, or agricultural equipment.

## Preventive Maintenance-Diesel

**32412305 .....3 credits**

Introduces learner to vehicle preventive maintenance and inspection. Focuses on maintaining and inspecting the engine system, cab, electrical and electronics, and frame and chassis components with an emphasis on DOT inspections. Learners practice proper service on vehicle systems and perform a visual inspection of all vehicle components. Learners also practice how to properly document all maintenance and inspection findings.

*Prerequisites: Suspension & Steering Systems 32412309 and Braking Systems-Diesel 32412308*

## Service Practices in Diesel Industry ☑

**32412375 .....1 credit**

Introduces the learner to common tools, terminology, and service practices in the transportation field. Covers safety, environmental concerns, and basic customer relations. Service shop management practices and the use of automated work order, parts ordering, and time management concepts are included.

## Suspension & Steering Systems

**32412309 .....5 credits**

Analyze the construction and working principles of chassis components to perform on vehicle repairs. Includes instruction on frames, suspension systems, steering gears and linkages, wheels and tires, and wheel alignment. Learners practice on-vehicle diagnosis and repair of suspension and steering systems.

## Welding Foundations 1 ☑

**31442320 .....1 credit**

An introduction to fundamental welding techniques with an emphasis on safe work habits that covers the processes of SMAW, GMAW, and OXY-Fuel cutting. Classroom instruction paired with lab activities are designed to provide fundamental skills in each of the welding processes covered in the class.

## Welding Foundations 2

**31442321 .....1 credit**

An introduction to fundamental welding techniques with an emphasis on safe work habits that covers the processes of GTAW, FCAW and Plasma cutting. Classroom instruction paired with lab activities are designed to provide fundamental skills in each of the welding processes covered in the class.

## Workplace Communication ☑

**31801368 .....1 credit**

Analyze workplace communication situations to develop professional verbal and written communication skills. Learners apply verbal and written communication skills, as well as conflict resolution strategies, to improve workplace communication climates and promote personal and professional growth.