

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

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**.

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.
- ☐ 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. 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.
- ☐ Set up student MyCampus account at mstc.edu/mycampus-assistance.
- ☐ Schedule a New Student Advising appointment at **mstc.edu/advising**.



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



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.



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 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**.

OTHER OPTIONS

RELATED PROGRAMS

- Automotive Maintenance Technician
- Automotive Technician

OUTCOMES

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

- Practice personal and professional work habits.
- Perform basic maintenance for the diesel and heavy equipment industry.
- Perform light repairs for the diesel and heavy equipment industry.

TECHNICAL SKILLS ATTAINMENT

The Wisconsin Technical College System (WTCS) has implemented a requirement that all technical colleges measure outcomes attained by students. This requirement is called Technical Skills Attainment (TSA). The main objective of TSA is to ensure graduates have the technical skills needed by employers. Students are notified of TSA reporting through the Braking, Steering & Suspension, and Electrical ASE tests.

PROTECTIVE CLOTHING

Students are required to wear school uniform shirts while working in the diesel shop. Uniform shirts can be purchased from the Wisconsin Rapids campus Bookstore. Students are also required to provide and wear leather work shoes with oil-resistant soles.

NOTES:		

STUDENT HANDBOOK

Visit **mstc.edu/studenthandbook** to view Mid-State's student handbook, which contains information about admissions, enrollment, appeals processes, services for people with disabilities, financial aid, graduation, privacy, Mid-State's Student Code of Conduct, and technology.

GRADUATION REQUIREMENT

The GPS for Student Success course is required for all Mid-State program students and is recommended to be completed before obtaining 12 credits. (Not counted in the total credit value for this program.) Some students are exempt from this requirement. Please see your program advisor for more information.

GPS for Student Success ☐ 108901021 credit

Integrate necessary skills for student success by developing an academic plan, identifying interpersonal attributes for success, adopting efficient and effective learning strategies, and utilizing Mid-State resources, policies, and processes. This course is recommended to be completed prior to obtaining 12 credits and is a graduation requirement unless

ADDITIONAL COURSES AS NEEDED

The following courses may be recommended or required if the student does not achieve minimum Accuplacer scores.

you receive an exemption from your program advisor.

College Reading and Writing 1

Provides learners with opportunities to develop and expand reading and writing skills to prepare for college-level academic work. Students will employ critical reading strategies to improve comprehension, analysis, and

retention of texts. Students will apply the writing process to produce well-developed, coherent, and unified written work.

Pre-Algebra 108341093 credits

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 cred	its
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 cred	its
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 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**.

SAMPLE PART-TIME CURRICULUM OPTION

Term 10457119 31442320 31442321 32412309 32412375	Fabrication Fundamentals 1 Welding Foundations 1 Welding Foundations 2 Suspension & Steering Systems Service Practices in Diesel Industry	9 credits 1 1 1 5 1
	Drivetrains Mobile Hydraulics	6 credits 4 2
Term 31801368 32412308 32412340	Workplace Communication & Braking Systems-Diesel Intro to Electricity for the Diesel Indu	7 credits 1 5 ustry 2 1
Term 32412305 32412313	Preventive Maintenance-Diesel Electrical Systems	7 credits 3 4 credits 29

COURSE DESCRIPTIONS

Braking Systems-Diesel

324123085 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 & 324123401 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

324623022 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

324123053 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

324123095 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 2

314423201 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 pared 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 pared 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.