



diesel & heavy equipment technician assistant

Technical Diploma

Program Code: 31-412-2

Total Credits: 33

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, 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.

CHECKLIST:

This section will be completed when meeting with your academic advisor.

- FAFSA (www.fafsa.gov)
- Financial Aid Form(s)
Form(s): _____
- Follow-Up Appointment:
Where: _____
When: _____
With: _____
- Official Transcripts
Mid-State Technical College
Student Services Assistant
1001 Centerpoint Drive
Stevens Point, WI 54481
- Other: _____

mstc.edu
888.575.6782



ADAMS CAMPUS
401 North Main
Adams, WI 53910

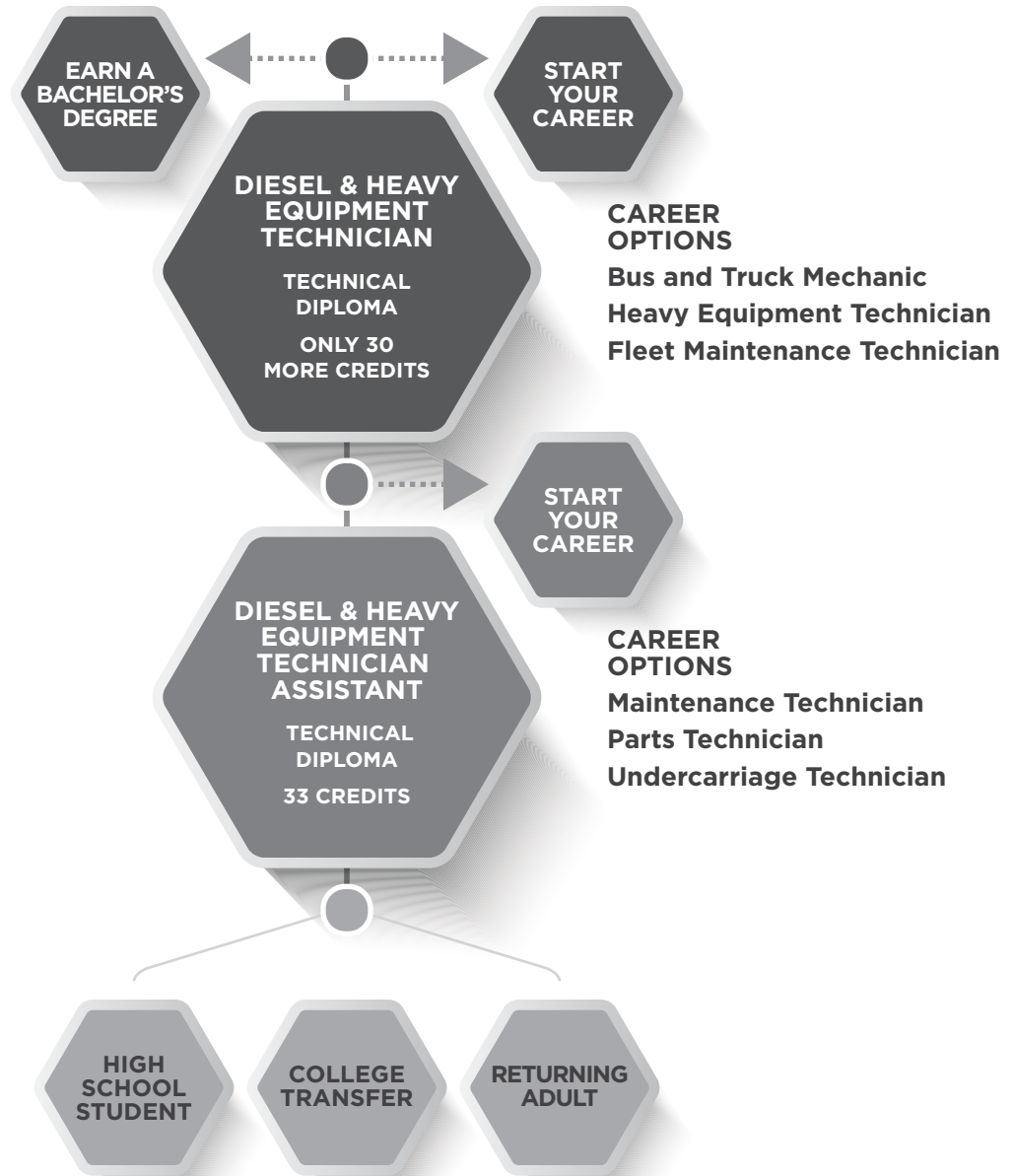
MARSHFIELD CAMPUS
2600 West 5th Street
Marshfield, WI 54449

STEVENS POINT CAMPUS
1001 Centerpoint Drive
Stevens Point, WI 54481

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

BACHELOR'S DEGREE OPTIONS

For more information and additional opportunities, visit mstc.edu/transfer.



College Credit • Dual Credit • Military Experience • Work Experience
Learn about Credit for Prior Learning at mstc.edu/cpl.

**BEGIN AT ANY POINT
IN THE PATHWAY**

OTHER OPTIONS

RELATED PROGRAMS

- Automotive Maintenance Technician
- Automotive Technician

PROGRAM 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 program 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 in their final few courses of the program.

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

10890102 1 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 must be completed prior to obtaining 12 credits and as a graduation requirement.

ADDITIONAL COURSES AS NEEDED

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

Intro to College Reading

10838104 2 credits

Provides learners with the opportunities to develop and expand reading skills, including comprehension and vocabulary skills. Learners apply reading skills to academic tasks and read to acquire information from a variety of sources.

Intro to College Writing

10831103 3 credits

Introduces basic principles of composition, including organization, development, unity, and coherence in paragraphs and multi-paragraph documents. The purpose of this course is to prepare students for successful entry into required program courses. This course is tuition bearing and under certain circumstances may qualify for financial aid. This course cannot be used to satisfy program completion requirements at Mid-State.

Prerequisite: Accuplacer Sentence Skills score of 60 or equivalent. Proficiency in word processing skills recommended.

Pre-Algebra

10834109 3 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.

Prerequisite: Accuplacer Math score of 65, Accuplacer Algebra score of 30, ABE Math Prep V 76854785 and ABE Math Prep VI 76854786 with a grade of “S.” (Note: ABE Math Prep V and VI courses cannot be used to satisfy program completion requirements at Mid-State.)

SAMPLE FULL-TIME CURRICULUM OPTION

Term		16 credits
10442117	Welding Fundamentals 1	1
10442118	Welding Fundamentals 2	1
10457119	Fabrication Fundamentals 1	1
10457120	Fabrication Fundamentals 2	1
32412375	Service Practices in Diesel Industry	1
32412340	Intro to Electricity for the Diesel Industry	1
32412308	Braking Systems-Diesel	5
32412309	Suspension & Steering Systems	5

Term		17 credits
10462121	Mobile Hydraulics Repair	3
10801199	Employment Strategies	3
32412305	Preventive Maintenance-Diesel	3
32412312	Drivetrains	4
32412313	Electrical Systems	4

Total credits 33

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/classfinder.

SAMPLE PART-TIME CURRICULUM OPTION

Term		10 credits
10442117	Welding Fundamentals 1	1
10442118	Welding Fundamentals 2	1
10457119	Fabrication Fundamentals 1	1
10457120	Fabrication Fundamentals 2	1
32412340	Intro to Electricity for the Diesel Industry	1
32412308	Braking Systems-Diesel	5

Term		6 credits
32412375	Service Practices in Diesel Industry	1
32412309	Suspension & Steering Systems	5

Term		9 credits
10462121	Mobile Hydraulics Repair	3
10801199	Employment Strategies	3
32412305	Preventive Maintenance-Diesel	3

Term		8 credits
32412312	Drivetrains	4
32412313	Electrical Systems	4

Total credits 33

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.

Prerequisite: Admission to Diesel & Heavy Equipment Technician program 324121 or Diesel & Heavy Equipment Technician Assistant program 314122

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: Admission to Diesel & Heavy Equipment Technician program 324121 or Diesel and Heavy Equipment Technician Assistant program 314122, 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.

Prerequisites: Admission to Diesel & Heavy Equipment Technician program 324121 or Diesel & Heavy Equipment Technician Assistant program 314122 and Intro to Electricity for the Diesel Industry 32412340

Employment Strategies

10801199 3 credits

A course designed to assist students in securing employment. This communication-based course helps develop an awareness of personal and academic skills as they relate to the job seeking process. Topics of study include personal and skill assessments, research of employment sources, completion of application forms, formation of professional resumes, composition of various business letters, interviewing skills, and job offer evaluation. NOTE: To enroll you must have completed 50 percent of technical program credits or receive department approval. See program advisor, program faculty, program counselor, or department dean/associate dean to register.

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.

Fabrication Fundamentals 2

10457120..... 1 credit

An introduction to plate steel and heavy fabrication. Presents fabrication techniques using heavy fabrication equipment. CNC Cutting, Plate and Tube bending, Sawing and Shearing equipment will be presented and followed up with lab activities to provide a hands-on experience. Emphasizes developing an understanding of the equipment, techniques, safe work habits, and application of heavy 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.

Prerequisite: Admission to Diesel and Heavy Equipment Technician program 324121 or Diesel and Heavy Equipment Technician Assistant program 314122

Mobile Hydraulics Repair

10462121 3 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.

Prerequisite: Admission to Diesel & Heavy Equipment Technician program 324121 or Diesel & Heavy Equipment Technician Assistant program 314122

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: Admission to Diesel & Heavy Equipment Technician program 324121 or Diesel & Heavy Equipment Technician Assistant program 314122 and Suspension & Steering Systems 32412309; 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.

Prerequisite: Admission to Diesel & Heavy Equipment Technician program 324121 or Diesel & Heavy Equipment Technician Assistant program 314122

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.

Prerequisite: Admission to Diesel & Heavy Equipment Technician program 324121 or Diesel & Heavy Equipment Technician Assistant program 314122

Welding Fundamentals 1

10442117 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 Fundamentals 2

10442118 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.