

**Diesel Mechanic - Heavy Equipment Maintenance**
**AAS Degree | 60 credits**

Campus: Hibbing

<b>FALL SEMESTER 2024 – 20 Credits</b>		<b>CREDITS</b>	<b>HOURS LEC/LAB</b>
DSL 1110	General Shop Practices	2	1/2
DSL 1115	Beginning Electrical Systems	3	1/4
DSL 1120	Beginning Power Transmission	3	1/4
DSL 1125	Beginning Diesel Engines	4	1/6
DSL 1130	Beginning Heavy Equipment Hydraulics	2	1/2
DSL 1150	Diesel Math	1	1/0
ENGL 1110	Professional Organization Writing	3	3/0
WELD 1527 *	Welding for Auto and Diesel	2	0/4
<b>SPRING SEMESTER 2025 – 16 Credits</b>			
DSL 1215	Intermediate Electrical Systems	3	1/4
DSL 1220	Advanced Power Transmissions	3	1/4
DSL 1225	Advanced Diesel Engines	4	2/4
DSL 1230	Advanced Heavy Equipment Hydraulics	3	1/4
DSL 1260	Heavy Equipment Air Conditioning	3	1/4
<b>SUMMER SEMESTER 2025 – 9 CREDITS</b>			
DSL 2115	Advanced Electrical Systems	4	2/4
DSL 2550	Customer Repair Internship	5	0/10
<b>FALL SEMESTER 2025 – 15 CREDITS</b>			
General Education courses from the Minnesota Transfer Curriculum (MNTC). Credits must be selected from a minimum of three of the following goal areas: <ul style="list-style-type: none"> <li>• MNTC Goal 1: Communication</li> <li>• MNTC Goal 3: Natural Sciences</li> <li>• MNTC Goal 4: Mathematics/Logical Reasoning</li> <li>• MNTC Goal 5: History and the Social and Behavioral Sciences</li> <li>• MNTC Goal 6: Humanities and the Fine Arts</li> </ul>		15	

**PROGRAM DESCRIPTION**

Heavy equipment mechanics repair all parts of large trucks, buses, construction, and earth moving equipment. They inspect, test and repair heavy equipment systems, including hydraulics, pneumatics and electrical. Students in the Diesel Mechanics program develop the skills to troubleshoot and repair a Diesel engine through our hands-on learning approach.

MNC's Diesel and Heavy Equipment program provides a modern equipped diesel shop including a fuel injector room and use of an engine dynamometer. Students learn theory and application of 2-cycle and 4-cycle engines, electrical and hydraulic systems, fuel injection, turbochargers, clutches, heavy equipment, recordkeeping, power transmissions, and steering, brakes, and tires.

**PROGRAM LEARNING OUTCOMES**

Upon completion of the Diesel Mechanics and Heavy Equipment Maintenance program, graduates will be able to:

1. Demonstrate professional behavior that reflects integrity, accountability, responsibility, and ethical practice.
2. Work collectively and collaboratively, exhibiting skills in leadership, perseverance, and integrity.
3. Demonstrate the ability to work safely and recognize safety hazards.
4. Establish a basis of using test equipment for troubleshooting Mechanical situations.
5. Demonstrate knowledge of the operation of a diesel engine.
6. Exhibit basic troubleshooting of electrical systems used in heavy equipment and their repair.
7. Demonstrate the ability to troubleshoot hydraulic systems.
8. Demonstrate the ability to troubleshoot heavy duty air and hydraulic brake systems.
9. Exhibit the use of precision measuring tools.

10. Demonstrate the operation of manual and automatic transmissions.
11. Demonstrate the repair of differentials and planetary axles.
12. Establish the necessary skills for undercarriage repair.
13. Demonstrate the operation of steering systems.

### PROGRAM NOTES

- All Diesel students must pass a pre-enrollment drug test. All tests will be screened through a facility designated by Minnesota North College.
- \* WELD 1527 can be taken fall or spring semester.
- [Differential tuition is assessed for the DSL and WELD courses.](#)

### EMPLOYMENT OPPORTUNITIES

Diesel mechanics and heavy equipment mechanics secure jobs with road construction companies, trucking companies, the mining industry, bus lines and logging and diesel equipment dealers. Government agencies hire mechanics to maintain their diesel-powered equipment.

### PROGRAM FACULTY

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**MISSION:** Minnesota North College prepares lifelong learners and engaged citizens through inclusive, transformative experiences reflecting the character and natural environment of the region.

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