Central Lakes College, Staples Campus 2024-2025

Heavy Equipment Operation & Maintenance

Diploma (D360)

Total Credits 66

Required Courses

CCST 1510	College Success Skills	3 cr
CCST 1530	Employment Strategies	3 cr
HEOM 1101	Construction Safety and First Aid	1 cr
HEOM 1107	Tools, Fasteners, Shop Practices	1 cr
HEOM 1108	Heavy Equipment Math/Estimating	2 cr
HEOM 1112	Intro to Preventative Maintenance	1 cr
HEOM 1113	Preventative Maintenance	4 cr
HEOM 1151	Heavy Equipment Welding	1 cr
HEOM 1164	Class A CDL Theory	3 cr
HEOM 1165*	Commercial Driver's License	3 cr
HEOM 1200	Intro to Operations	1 cr
HEOM 1211	Servicing I	3 cr
HEOM 1212*	Servicing II	2 cr
HEOM 1261*	General Lab	5 cr
HEOM 2102*	Construction Survey/Blueprints	5 cr
HEOM 2103*	Soils and Compaction	4 cr
HEOM 2110*	Backhoe/Excavator Theory	1 cr
HEOM 2111*	Loader Theory	1 cr
HEOM 2134*	Operations Theory	1 cr
HEOM 2135*	Construction Theory	1 cr
HEOM 2136*	Grading Lab I	5 cr
HEOM 2138*	Grading Lab II	4 cr
HEOM 2140*	Excavation Lab I	3 cr
HEOM 2141*	Excavation Lab II	3 cr
HEOM 2142*	Excavation Lab III	3 cr
HEOM 2150	Competent Person	2 cr

**Denotes Prerequisites*

GRADUATION REQUIREMENT - 66 CREDITS

Description

The Heavy Equipment Operation and Maintenance Program is a unique program offered in Minnesota. The program includes courses in both maintenance and operation of heavy construction equipment. Incorporated into the program is the opportunity to "fast track," which includes attending summer session and completing the program with a fourth semester paid internship in industry. Students learn skills necessary to service and maintain a fleet of heavy equipment. Opportunities exist using simulators to improve skills in truck driving and operation of equipment. Students are given real life projects in the operations field, experiencing hands-on training with dozers, scrapers, graders, backhoes, wheel loaders, excavators, skid steers and trucks. Experienced faculty share their knowledge and experience from industry with the next generation of heavy equipment operators. Training takes place at the 360-acre Staples West Campus operations training site, with ample space for students to experience hands-on equipment operation. The West Campus includes an up-to-date classroom facility and nine-bay maintenance shop with overhead cranes, welding bay and dedicated wash bays. The classroom facility includes a soils lab where students are instructed in various types of soil identification and testing. The program stresses the importance of safety, strong work ethic, and the value of continuing education and lifelong learning. We strive to train students in the highest standards of quality and integrity to enhance economic growth in communities.

Outcomes

By completing this program, students will achieve the following learning outcomes:

- Perform basic operations of earthmoving equipment related to grading and excavation needs;
- Perform basic heavy equipment maintenance and repairs;
- Demonstrate written and verbal comprehension of basic surveying techniques related to grades, elevations and blueprint reading;
- Identify and practice safe work habits as required by OSHA and industry standards;
- Obtain a current OSHA 10-hour Safety Card;
- Obtain a Class A Commercial Driver's License;
- Obtain an Adult First Aid/CPR/AED Certification;
- Obtain a Minnesota Aggregate Certification.

Pre-Program Requirements

- The Heavy Equipment Operation and Maintenance Program is offered as a full-time day program. New students are accepted into the program in August and December.
- Students must complete Accuplacer assessment testing prior to acceptance into the program.
- Students must be 18 years old prior to the start of the first semester.
- Students must possess a valid Class D driver's license and have the ability to obtain a Class A (CDL) in accordance with program timelines. Once a student has passed the Class A (CDL), they must maintain the license in a valid status throughout the remainder of the program.

Students will be required to participate in random drug and alcohol screening throughout the program.

Courses must be taken in the semester indicated in the program planning form specific to month student began the program. Any deviation from this order requires approval by the HEOM department with full time program students having priority for classes.

Some courses may require students to meet College Placement Levels in reading, writing, and/or math. See an advisor for more information.

For insurance purposes, internships may require that students be 18 years old.

Graduation Requirements

In addition to the program requirements, students must meet the following conditions in order to graduate:

- College Cumulative GPA Requirement: cumulative grade point average (GPA) of credits attempted and completed at CLC must be at least 2.0;
- College Technical Core GPA Requirement: cumulative GPA of credits attempted and completed towards the technical core of the diploma or degree must be at least 2.0;
- Residency Requirement: students must complete 25% of their credits at Central Lakes College.
- Students participating in the December Fast Track option must maintain a 3.0 cumulative GPA throughout the program.

Career & Transfer

This in the seat, hands-on training program will prepare you for an industry that continually shapes and changes the physical environment. You will be able to become part of the crew that builds a roadway, lays pipe for the city, or demolishes a building to make way for a new sports facility, office building or shopping center. Train under knowledgeable faculty and learn to operate dozers, excavators, motor graders, loaders, skid steer, backhoes and haul trucks. This in-depth knowledge will make you a valuable asset in the construction industry. Employment opportunities exist nationwide in various areas of the construction industry, including highway construction, underground utilities, pipelines and oil fields, mining, flood control, demolition, mining and logging, and with state and local governments.

Academic Plan

Semester One (16 credits)

CCST 1510	College Success Skills	3 cr
HEOM 1101	Construction Safety and First Aid	1 cr
HEOM 1107	Tools, Fasteners, Shop Practices	1 cr
HEOM 1108	Heavy Equipment Math/Estimating	2 cr
HEOM 1112	Intro to Preventative Maintenance	1 cr
HEOM 1164	Class A CDL Theory	3 cr
HEOM 1200	Intro to Operations	1 cr
HEOM 1211	Servicing I	3 cr
HEOM 1151	Heavy Equipment Welding	1 cr

Semester Two (16 credits)

HEOM 1113	Preventative Maintenance	4 cr
HEOM 1165*	Commercial Driver's License	3 cr
HEOM 1212*	Servicing II	2 cr
HEOM 2102*	Construction Survey/Blueprints	5 cr
HEOM 2150	Competent Person	2 cr

Semester Three (18 credits)

CCST 1530	Employment Strategies	3 cr
HEOM 2103*	Soils and Compaction	4 cr
HEOM 2134*	Operations Theory	1 cr
HEOM 2135*	Construction Theory	1 cr
HEOM 2136*	Grading Lab I	5 cr
HEOM 2138*	Grading Lab II	4 cr

Semester Four (16 credits)

HEOM 1261*	General Lab	5 cr
HEOM 2110*	Backhoe/Excavator Theory	1 cr
HEOM 2111*	Loader Theory	1 cr
HEOM 2140*	Excavation Lab I	3 cr
HEOM 2141*	Excavation Lab II	3 cr
HEOM 2142*	Excavation Lab III	3 cr

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