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# Heavy Equipment Operation

## Heavy Equipment Operation - Certificate of Achievement

Coalinga College Heavy Equipment Operation Certificate Program is a one semester Certificate of Achievement program. Intrinsic learning is accomplished through a hands on approach to introduce students to a wide range of skills necessary for equipment operation. Laboratory work is designed to simulate field experiences.

Heavy equipment operation requires good hand-eye coordination and demands attention to details like timelines, precision operation, coordination of multiple tasks, and following plan directions. Development of problem solving skills and safe work habits will be instilled in the student.

Heavy Equipment Operation program prepares students for careers in the operation of crawlers, tractors, scrapers, backhoes, excavator, loaders, motor graders, trucks, laser controlled equipment, and technical support programs. The curriculum is designed to align with the National Center for Construction Education and Research (NCCER) certification. Completion of the certificate qualifies students to enter the professional job market.

### Program student learning outcomes:

1. Students explain the basic terminology and types of equipment and their uses.
2. Students will explain the need for safety measures when working in and around heavy equipment.
3. Students will describe the long- and short-term health effects, first-aid measures, handling and storage, and/or required personal protective equipment (PPE) for a chemical using a safety data sheet (SDS).
4. Students will explain the basics of a hydraulic system and identify hydraulic components.
5. Students will describe basic safety rules and some specific safety rules when operating heavy equipment.
6. Students will perform basic maneuvering with a tractor.
7. Students will identify and explain earthmoving terms and methods.
8. Students will demonstrate and state the steps of the pre-operational safety inspection.
9. Students will explain safety rules for operating the following: rollers, scrapes, loaders, forklifts, dozers, backhoes, excavators, and motor graders.
10. Students will identify basic geometric shapes.
11. Students will interpret construction plans to determine grading requirements.
12. Students will read and interpret drawings to determine the type of excavations needed to prepare the site.
13. Students will describe how workers' values have changed over the years.
14. Students will list the characteristics of effective leaders.
15. Students will identify the three styles of leadership.
16. Students will explain the purpose of the Occupational Safety and Health Act (OSHA).
17. Students will identify the key points of a safety program.
18. Students will define the three types of project delivery systems.
19. Students will identify the two most common schedules.
20. Students will demonstrate an understanding of laser and GPS technology.
21. Students will explain the requirements for finishing and final grading of earthwork.
22. Students will describe the characteristics of different types of soils.

### For Gainful Employment information please visit:

<https://westhillscollge.com/coalinga/degrees-and-certificates/gainful-employment/>

### Career and employment information may be obtained through:

- O\*Net, [www.onetonline.org](http://www.onetonline.org)
  - Labor Market, California Employment Development Department, [www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov)
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<i>Course #</i>	<i>Title</i>	<i>Units</i>
<b>Required Core Courses (18 Units)</b>		
IMT 060 . . . .	Industrial Core . . . . .	3
HVYEQUI 060A . . . . .	Level I Heavy Equipment Operation . . . . .	5
HVYEQUI 060B . . . . .	Level II Heavy Equipment Operations . . . . .	5
HVYEQUI 060C . . . . .	Level III Heavy Equipment Operations . . . . .	5
	<b>Total . . . . .</b>	<b>18</b>

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