

# HEAVY EQUIPMENT TECHNICIAN - INTERMEDIATE TECHNICAL CERTIFICATE (ITC)

Explore More About This Program: <https://cwi.edu/program/heavy-equipment-technician>

## Certificate Quick Facts

- **Instructional School:** Industry, Engineering, and Trades
- **Department:** Powersports and Diesel Technology
- **Program Code:** HTEC.ITC
- **Program Type:** Career and Technical Education
- **Available Fully Online:** No
- **Eligible for Federal Financial Aid:** Yes

NOTE: Courses required for this program *may* have an additional fee; more information can be found on the [Special Course Fees](#) web page.

## Certificate Requirements

Course	Course Title	Min Credits
<b>General Education Requirements</b>		
Select one of the following:		3
COMM 101	Fundamentals of Oral Communication (Recommended GEM 2) <sup>1</sup>	
CWI 101	Connecting With Ideas (Recommended GE Elective) <sup>1</sup>	
ENGL 101	Writing and Rhetoric I (Recommended GEM 1) <sup>1</sup>	
MATH 118 & 118L	Technical Math and Technical Math Lab (Recommended GEM 3) <sup>1</sup>	
PSYC 140	Human Relations for Career and Personal Success (Recommended GEM 6) <sup>1</sup>	
<b>Major Requirements</b>		
HTEC 111	Introduction to Heavy Equipment Service Industry	3
HTEC 121	DC Circuits & Basic Electrical Systems	3
HTEC 131	Track Systems and Mechanical Repair	3
HTEC 141	Diesel Engine Theory of Operation and Repair	3
HTEC 151	Preventive Maintenance	3
HTEC 161	HVAC System Service	3
HTEC 171	Fundamentals of Fluid Power	3
HTEC 181	Principles of Electronically Managed Systems	3
HTEC 211	Gearing and Driveline Systems	3
HTEC 221	Mobile Equipment Hydraulic Systems	3
HTEC 231	Transmissions	3
HTEC 241	On-Board Vehicle Networks and Electronic Systems Troubleshooting	3
HTEC 251	Engine Emissions and Fuel Systems	3
HTEC 261	Hydraulic System Service and Repair	3
<b>Minimum Credit Hours Required</b>		<b>45</b>

<sup>1</sup> The general education (GE) courses listed above are recommended by the department as the most beneficial GE options for students in this program. **Please note that students may fulfill their GE requirement by completing another course from within one of the designated general education categories.**

## Certificate Plan: Summer Start

*The course sequence listed below is strongly recommended in order to complete your program requirements. Many Career and Technical Education (CTE) courses have prerequisites and/or corequisites that have been accounted for within this Plan of Study Guide. Please register for each semester as shown using the Student Planning tool in myCWI. Consult your advisor for any questions regarding this course sequence plan.*

### **\*\*NOTE\*\***

Prior to beginning their HTEC courses, students must successfully complete any one (1) general education course.

**First Year**

<b>Summer</b>		<b>Credit Hours</b>
<b>Full 8-Week Course Session</b>		
Select one of the following:		3
COMM 101	Fundamentals of Oral Communication (Recommended GEM 2) <sup>1</sup>	
CWI 101	Connecting With Ideas (Recommended GE Elective) <sup>1</sup>	
ENGL 101	Writing and Rhetoric I (Recommended GEM 1) <sup>1</sup>	
MATH 118 & 118L	Technical Math and Technical Math Lab (Recommended GEM 3) <sup>1</sup>	
PSYC 140	Human Relations for Career and Personal Success (Recommended GEM 6) <sup>1</sup>	
<b>Total Semester Credit Hours</b>		<b>3</b>

**Fall**

<b>First 4-Week Course Session</b>		
HTEC 111	Introduction to Heavy Equipment Service Industry	3
<b>Second 4-Week Course Session</b>		
HTEC 121	DC Circuits & Basic Electrical Systems	3
<b>Third 4-Week Course Session</b>		
HTEC 131	Track Systems and Mechanical Repair	3
<b>Fourth 4-Week Course Session</b>		
HTEC 141	Diesel Engine Theory of Operation and Repair	3
<b>Total Semester Credit Hours</b>		<b>12</b>

**Spring**

<b>First 4-Week Course Session</b>		
HTEC 151	Preventive Maintenance	3
<b>Second 4-Week Course Session</b>		
HTEC 161	HVAC System Service	3
<b>Third 4-Week Course Session</b>		
HTEC 171	Fundamentals of Fluid Power	3
<b>Fourth 4-Week Course Session</b>		
HTEC 181	Principles of Electronically Managed Systems	3
<b>Total Semester Credit Hours</b>		<b>12</b>

**Second Year**

<b>Summer</b>		
<b>First 4-Week Course Session</b>		
HTEC 211	Gearing and Driveline Systems	3
<b>Second 4-Week Course Session</b>		
HTEC 221	Mobile Equipment Hydraulic Systems	3
<b>Total Semester Credit Hours</b>		<b>6</b>

**Fall**

<b>First 4-Week Course Session</b>		
HTEC 231	Transmissions	3
<b>Second 4-Week Course Session</b>		
HTEC 241	On-Board Vehicle Networks and Electronic Systems Troubleshooting	3
<b>Third 4-Week Course Session</b>		
HTEC 251	Engine Emissions and Fuel Systems	3
<b>Fourth 4-Week Course Session</b>		
HTEC 261	Hydraulic System Service and Repair	3
<b>Total Semester Credit Hours</b>		<b>12</b>
<b>Minimum Credit Hours Required</b>		<b>45</b>

- <sup>1</sup> The general education (GE) courses listed above are recommended by the department as the most beneficial GE options for students in this program. **Please note that students may fulfill their GE requirement by completing another course from within one of the designated general education categories.**

## Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Read and interpret technical service literature.
- Identify and troubleshoot system problems relating to safety, diesel engines, electrical, hydraulics, powertrains, preventative maintenance, and HVAC.
- Select and order resources needed to repair machine systems.
- Demonstrate the work habits and mechanical skills that are essential to successful job performance.
- Integrate safety skills and rules related to the construction equipment industry.
- Apply digital communication skills to write a comprehensive service report.
- Apply professional standards of communication and etiquette in the workplace.