

HEAVY EQUIPMENT TECHNICIAN - ADVANCED TECHNICAL CERTIFICATE (ATC)

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.ATC
- **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
General Education Requirements		
MATH 118 & 118L	Technical Math and Technical Math Lab (Recommended GEM 3) ¹	3
Select one of the following:		3
ENGL 101	Writing and Rhetoric I (Recommended GEM 1) ¹	
COMM 101	Fundamentals of Oral Communication (Recommended GEM 2) ¹	
Select one of the following:		3
CWI 101	Connecting With Ideas (Recommended GE Elective) ¹	
PSYC 140	Human Relations for Career and Personal Success (Recommended GEM 6) ¹	
Major Requirements		
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
HTEC 271	Industry Practicum	3
Minimum Credit Hours Required		54

¹ 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 requirements by completing another course from within the designated general education category.**

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****

Heavy Equipment Technician (HTEC) majors are required to complete three general education courses in order to receive an Advanced Technical Certificate. Prior to beginning their HTEC courses, students must successfully complete any one (1) general education course. While it is recommended that students complete all three of their required general education courses during the spring and/or summer semester(s) prior to beginning the program, students may complete the additional required GEM courses during regular semesters while enrolled in HTEC courses if they feel capable of doing so.

First Year

Summer		Credit Hours
Full 8-Week Course Session		
Select one of the following:		3
CWI 101	Connecting With Ideas (Recommended GE Elective) ¹	
PSYC 140	Human Relations for Career and Personal Success (Recommended GEM 6) ¹	
Total Semester Credit Hours		3

Fall

First 4-Week Course Session		
HTEC 111	Introduction to Heavy Equipment Service Industry	3
Second 4-Week Course Session		
HTEC 121	DC Circuits & Basic Electrical Systems	3
Third 4-Week Course Session		
HTEC 131	Track Systems and Mechanical Repair	3
Fourth 4-Week Course Session		
HTEC 141	Diesel Engine Theory of Operation and Repair	3
Full 16-Week Course Session		
Select one of the following:		3
ENGL 101	Writing and Rhetoric I (Recommended GEM 1) ¹	
COMM 101	Fundamentals of Oral Communication (Recommended GEM 2) ¹	
Total Semester Credit Hours		15

Spring

First 4-Week Course Session		
HTEC 151	Preventive Maintenance	3
Second 4-Week Course Session		
HTEC 161	HVAC System Service	3
Third 4-Week Course Session		
HTEC 171	Fundamentals of Fluid Power	3
Fourth 4-Week Course Session		
HTEC 181	Principles of Electronically Managed Systems	3
Full 16-Week Course Session		
MATH 118 & 118L	Technical Math and Technical Math Lab (Recommended GEM 3) ¹	3
Total Semester Credit Hours		15

Second Year

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

Fall

First 4-Week Course Session		
HTEC 231	Transmissions	3
Second 4-Week Course Session		
HTEC 241	On-Board Vehicle Networks and Electronic Systems Troubleshooting	3

Third 4-Week Course Session		
HTEC 251	Engine Emissions and Fuel Systems	3
Fourth 4-Week Course Session		
HTEC 261	Hydraulic System Service and Repair	3
Full 16-Week Course Session		
HTEC 271	Industry Practicum	3
Total Semester Credit Hours		15
Minimum Credit Hours Required		54

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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.