

# HEAVY EQUIPMENT TECHNICIAN (HTEC)

## HTEC 102 Safety and Administrative Practices

(4 Credits, Fall)

Introduction to mobile off-road equipment terminology, design, and operation. Includes theory and application of shop safety, tool and equipment usage, precision measuring, lifting/rigging, basic welding, and oxyacetylene skills. Also includes identification of careers within the industry, common workplace practices, and employable skills. PREREQ: Program orientation and successful completion of any two general education courses, or PERM/CHAIR. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 106 Electrical Systems

(4 Credits, Fall)

Introduction to electrical terminology, fundamental principles, and testing and servicing of heavy equipment electrical systems. Includes the use of a multimeter to test battery, starting, charging, and lighting circuits on equipment as well as reading and interpreting wiring schematics to aid in diagnosis. PREREQ: HTEC 102. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 110 Engines/Engine Controls

(4 Credits, Fall)

Diesel engine principles including lubrication, cooling, intake and exhaust, engine controls, and fuel systems. PREREQ: HTEC 102. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 120 Mobile Hydraulic Systems

(4 Credits, Spring)

Terminology, fundamental principles, and basic service of mobile hydraulic systems. PREREQ: HTEC 102, HTEC 106, and HTEC 110. COREQ: HTEC 130 and HTEC 140. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 130 Powertrains

(4 Credits, Spring)

Terminology, fundamental operating principles, and basic service techniques associated with heavy equipment powertrains. PREREQ: HTEC 102, HTEC 106, and HTEC 110. COREQ: HTEC 120 and HTEC 140. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 140 Preventive Maintenance/HVAC

(4 Credits, Spring)

Vehicle and equipment maintenance, service procedures, and vehicle and pre-delivery inspection. Includes terminology, fundamental operating principles, and basic service techniques associated with mobile equipment HVAC systems. PREREQ: HTEC 102, HTEC 106, and HTEC 110. COREQ: HTEC 120 and HTEC 130. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 220 Advanced Electrical Systems

(4 Credits, Fall)

Advanced theories, system testing, and troubleshooting on simulators and actual equipment. PREREQ: HTEC 106, HTEC 120, HTEC 130, and HTEC 140. COREQ: HTEC 240 and HTEC 250. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 230 Advanced Engines/Engine Controls

(4 Credits, Spring)

Advanced system theory with diagnostic procedures on simulators and actual equipment. PREREQ: HTEC 110, HTEC 220, HTEC 240, HTEC 250, and completion of a GEM 1 (or GEM 2), GEM 3, and GEM 6 course. COREQ: HTEC 260 and HTEC 290. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 240 Advanced Powertrains

(4 Credits, Fall)

Advanced theories, component rebuild, and troubleshooting on simulators and actual equipment. PREREQ: HTEC 120, HTEC 130, and HTEC 140. COREQ: HTEC 220 and HTEC 250. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 250 Advanced Hydraulic Systems

(4 Credits, Fall)

Advanced theories, system testing, and troubleshooting on simulators and actual equipment. PREREQ: HTEC 120, HTEC 130, and HTEC 140. COREQ: HTEC 220 and HTEC 240. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 260 Advanced Preventive Maintenance/HVAC

(4 Credits, Spring)

HVAC controls and troubleshooting techniques performed on simulators and actual equipment. PREREQ: HTEC 140, HTEC 220, HTEC 240, HTEC 250, and completion of a GEM 1 (or GEM 2), GEM 3, and GEM 6 course. COREQ: HTEC 230 and HTEC 290. (2 lecture hours, 6 lab hours, 4 credits)

## HTEC 290 Heavy Equipment Technician Capstone

(4 Credits, Spring)

Supervised application of coursework. Capstone projects will be assigned by instructor and may take place within an industry or lab setting. PREREQ: HTEC 220, HTEC 240, HTEC 250, and completion of a GEM 1 (or GEM 2), GEM 3, and GEM 6 course. COREQ: HTEC 230 and HTEC 260. (0 lecture hours, 12 lab hours, 4 credits)

*Refer to How to Read Course Descriptions for an explanation of elements found in the course descriptions above.*