

HEATING, AIR CONDITIONING, AND APPLIANCE TECHNOLOGY (TECHNICAL AND INDUSTRIAL DIVISION)

HACAT-115 BASIC ELECTRICITY (5 cr.) The student will learn basic electricity principles including how to measure voltage, current, resistance, and wattage. Troubleshooting various types of motors (single-phase and three phase) along with capacitance and inductance measures will be taught. Further, the course will explain how various controls are used in HVAC, appliances and their applications.

HACAT-135 AUTOMATIC DRYERS (2 cr.) Students will learn the operation and repair of electric and gas dryers. The student will be taught to properly diagnose and repair all current models of dryers. Instructional areas include installation requirements, drive systems, seal mechanisms, replace seals, motor assemblies, diagnose timer assemblies, diagnose electronic controls, service electric heating systems, and gas heating systems.

HACAT-145 AUTOMATIC WASHERS (4 cr.) Training in the operation and service of washing machines. The student will be instructed in the proper diagnosis and repair of current models. The course outline includes installation, replacing water level switches, safety switches, diagnose various solenoids, replacing drive motors, pumps, filters, dispensers, repairing transmissions, and clutch mechanisms, install/adjust belts, and diagnose electrical problems.

HACAT-155 DISHWASHERS/COMPACTORS (3 cr.) Training in the operation and service of dishwashers and compactors. The student will be instructed on how to properly diagnose and repair current models. The course outline includes installation requirements, repairing wash systems, replacing door seals, replacing timer assemblies, diagnosing various electrical problems, replacing drive mechanisms, and repairing safety switches.

HACAT-165 RANGES/MICROWAVE OVENS (3 cr.) Training in the operation and services of ranges and microwave ovens. The student will be taught to properly diagnose and repair current models. The course outline includes installation, repair surface cooking systems, repair oven systems, replace safety switches, repair door assemblies, repairing interlock systems on microwave ovens, repairing protection mechanisms on microwave ovens, repairing high-voltage components, and diagnosing electrical and mechanical problems.

HACAT-215 HVAC PRINCIPLES (5 cr.) Teaches the proper handling procedures of refrigerants, brazing techniques, the evacuation and charging processes, the proper usage of tools specific to this trade, installation requirements, HVAC controls, and to familiarize the student with various kinds of motors used in the HVAC products. Learn how to work with customers, and find parts for repair of HVAC and appliance products. First Aid is also taught as part of this course.

HACAT-225 REFRIGERATION THEORY (6 cr.) Study of the operation and service of commercial refrigeration systems to include evaporators, condensers, compressors, and metering devices. Defrost systems and commercial ice making are also covered. Electrical control systems, pressure control systems, and other devices specific to refrigeration systems will be taught. The course will also prepare students to take the ESCO Refrigerant Certification for handling all refrigerants as required by the EPA.

HACAT-235 AIR CONDITIONING THEORY (11 cr.) Service and operation of air conditioning systems to include evaporators, condensers, compressors, and metering devices. Air distribution and comfort/psychometrics will be taught. All-weather systems will

be worked on including heat pumps. Defrost systems will also be taught. Requirements to prepare students for the low voltage certification as required by Washington State and HVAC Apprentice for Idaho will also be covered.

HACAT-245 DOMESTIC PRODUCTS (3 cr.) Provides basic understanding on domestic refrigeration products and icemakers for refrigerators and freezers; to train on repair of most major brands. The student will learn basic troubleshooting processes and the controls used in these products.

HACAT-255 HEATING SYSTEMS (8 cr.) Learn basic operation and service of heating systems to include electric, gas, and oil heating. Study of the controls used in these systems and troubleshooting techniques will be taught as well as venting and piping requirements as used on these products.

HACAT-265 WATER HEAT SYSTEMS (2 cr.) Provides basic knowledge of water heating systems to include gas, and electric hot water heaters as well as gas and oil hydronic heating systems. The student will learn basic operation and service of water heating systems, study controls used in these systems, trouble-shooting techniques, and determine venting/piping requirements as used on these products.

HACAT-290 DIRECTED STUDY IN HEATING AIR CONDITIONING AND APPLIANCE TECHNOLOGY (1-8 cr.) To provide further study in the HVAC and appliance field providing more hands-on application. This course is tailor made for the student's needs.

HACAT-296 COOPERATIVE EDUCATION IN HEATING, AIR CONDITIONING AND APPLIANCE TECHNOLOGY (2-8 cr.) Advanced on-the-job training in servicing laundry, refrigeration, and heating products. Student can be a paid, part time employee supervised by employer. Coordinator works with employer to establish and maintain goals. May be repeated. Instructor permission - second year only.