

# RS COURSE STUDENT LEARNING OUTCOMES

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## RS 101 - Refrigeration/Service 1st Year Apprenticeship

Students will be able to apply safety standards including OSHA 10, first aid and CPR.

Students will be able to demonstrate electrical procedures.

Students will be able to master basic heating and refrigeration and the identification and use of RS (HVAC) tools.

Students will be able to use multiple modes of communication towards enhancing effectiveness in the work environment.

Students will be able to determine pipe length dimensions and formulas to calculate offsets around various objects and in a variety of circumstances as they will encounter in the field.

Students will be able to communicate accumulated technical data effectively with co-workers to apply that information toward completion of work assignments.

Students will be able to use math as related to the refrigeration service trade. Math, such as as calculating temperatures and BTUs, using the Pythagorean Theorem, calculating pressure (PSI), applying geometry.

## RS 151 - Refrigeration/Service 2nd Year Apprenticeship

Students will be able to apply mathematics and science to vapor compression and various refrigerant pressure enthalpy diagrams.

Students will be able to apply the rules of the EPA Section 608 that addresses conservation and handling of refrigerants.

Students will be able to demonstrate handling of refrigeration principles, including safe handling of refrigerants and basic air conditioning principles.

Students will be able to use algebraic formulas and apply geometric concepts to solve various installation situations they will encounter on job sites.

## RS 201 - Refrigeration/Service 3rd Year Apprenticeship

Students will be able to demonstrate intermediate heating and air conditioning techniques that includes knowledge of a variety of control schemes that are found within the field.

Students will be able to demonstrate mastery of electric and direct digital (DDC) controls.

Students will be able to demonstrate their understanding of basic rigging.

Students will be able to lay out piping installations on paper to be transferred to actual installations in the field using trigonometric and geometric formulas.

## RS 251 - Refrigeration/Service 4th Year Apprenticeship

Students will be able to demonstrate mastery of advanced heating and air conditioning, including chiller installation and service.

Students will be able to demonstrate mastery of building automation and related telecommunications.

Students will be able to demonstrate their knowledge of start-up, testing and balancing systems.

## RS 291 - Refrigeration/Service 5th Year Apprenticeship

Students will be able to effectively interpret isometric drawings and plan readings with co-workers to apply that information toward completion of work assignments.

Students will be able to demonstrate the ability to perform chiller compressor teardown.

Students will be able to obtain a State of Nevada license and certifications.