

APPLIED INDUSTRIAL TECHNOLOGY (INSULATING TECHNOLOGY) (ATIN)

ATIN-1000 Labor History and Safety 2 Credits

Familiarize the learner with the history of Unions, Apprenticeships and their functions, and the history of the International Association of Heat & Frost Insulators and Allied Workers. Achieve competency in the minimum safety requirements obtained in OSHA 10 Construction training. OSHA 10 Construction Card awarded upon successful completion of this course.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-1010 Applied Insulators Math 3 Credits

Develop mathematical skills for geometric applications and construction related to commercial and industrial installation and replacement of insulation. Includes tape measure reading, geometric design, fractional applications, material estimation, determining diameter, circumferences, radii, and mathematical conversions. Also covers mathematical skills used for material estimation, including perimeter, square footage, area of cylinder, and decimal to fraction calculations.

Lecture: 3 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-1020 Fundamental Insulation I - Insulation Theory 2 Credits

Identify, observe, and predict the main forms of heat transfer. Use these skills and understanding to recognize how and when mechanical insulation is required. Also, covers Firestop requirements and certification.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-1030 Fundamental Insulation II - Fiberglass Insulation 2 Credits

Identify an HVAC Duct system and distinguish the various ducts and functions. Develop the skills to measure, cut, and apply fiberglass insulation to ductwork. Identify a Plumbing System and distinguish the various pipes and functions. Develop the basic skills to measure, cut, and apply fiberglass insulation to plumbing pipes. Also, covers Firestop material application.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-1040 Union Heritage 1 Credit

History of the IAHFIAW (International Association of Heat and Frost Insulators and Allied Workers) union and purposes of apprenticeship programs. Introduction to organized labor and impact of organized labor on today's workforce. State and federal laws associated with organized labor introduced.

Lecture: 1 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-1050 Insulators Safety 2 Credits

The theories and principles of construction safety and health applied to working as an insulator following the Occupational Safety and Health Administration (OSHA) curriculum for the 30-hour Outreach Training Program for construction industry safety and health. Upon completion of course materials and required attendance hours, students receive their OSHA Construction 30-hour Outreach completion cards.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2000 Vapor Barriers 2 Credits

Covers purpose and need for vapor barriers for mechanical insulation systems. Includes terminology, types of materials used, calculations for material estimation, application techniques, inspection, and maintenance of vapor barriers.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2010 Scaffolding 1 Credit

Develop a more detailed understanding on the topic of Scaffolding initially covered in OSHA 10.

Lecture: 1 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2020 Fundamental Insulation III - Mechanical Systems 3 Credits

Classify the various Mechanical Systems relating to the insulation industry. Review Plumbing and Duct systems. Introduce and describe Chilled water, Heating water, Steam, and Cryogenic systems.

Lecture: 3 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2100 Shop Safety 1 Credit

Recognize the hazards associated with the common tools and machinery used in the shop. Develop the skills to safely and effectively operate equipment.

Lecture: 1 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2110 Advanced Metal Jacketing I
3 Credits

Review basic geometric construction. Develop introductory to moderate level layout skills to create equal tees, unequal tees, Equal lateral wyes, and endcaps to be used for metal jacket fabrication.

Lecture: 3 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2120 Advanced Metal Jacketing II
3 Credits

Continue to develop introductory to moderate level layout skills to create equal tees, unequal tees, Equal lateral wyes, and 90° elbows to be used for metal jacket fabrication. Introduce advanced layouts for metal jacketing.

Lecture: 3 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2130 Fundamental Insulation IV - Tanks and Equipment
2 Credits

Develop skills to install an insulation and jacketing system for various tanks, vessels, and boilers. Includes tape measure reading, geometric design, material estimation, determining diameter, circumferences, radii, and mathematical conversions. Also covers mathematical skills used for material estimation, including perimeter, square footage, area of cylinder, and decimal to fraction calculations.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2200 Blueprints and Specifications
2 Credits

Covers how to read blueprints and drawings to identify insulated equipment, using the scale for material estimation, and recognize key symbols related to insulation. Also includes interpretation of engineering specifications related to the insulation system.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2210 Removable Pad Design
2 Credits

Develop the skills to design and fabricate removable pads.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2220 Fundamental Insulation V - Closed Cell Insulation
3 Credits

Covers the various uses and advantages of closed cell insulation. Includes hazards, application techniques, strengths, and limitations of various closed cell materials.

Lecture: 3 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2230 Fundamental Insulation VI- Polyisocyanurate Insulation
3 Credits

Covers the various uses and advantages of Polyiso and similar types of insulation. Includes hazards, application techniques, strengths, and limitations of various polyiso and similar insulation materials.

Lecture: 3 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2240 Removable Insulation
3 Credits

Develop the skills to choose from design templates and fabricate removable insulation. Covers how to determine the need for removable pads, choose design of introductory pads, production of removable insulation boxes for various applications, and use of an industrial sewing machine to fabricate removable pads.

Lecture: 3 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

ATIN-2780 Preparing for the Profession
3 Credits

Basic level First Aid and CPR/AED course that teaches critical skills needed to respond to emergencies and provide first aid, cardiopulmonary resuscitation (CPR), and automated external defibrillator (AED) use in a safe, timely and effective manner. Upon successful completion of this course, students receive an Emergency Care Safety Institute and AAOS First Aid-CPR-AED course completion card. Also includes review of Insulator's Apprenticeship program curriculum to prepare for Journeyman certification exam.

Lecture: 3 hours

ATIN-2790 Effective Supervision and Journeyman Certification
2 Credits

Develop the skills needed to manage human resources and supervise a labor workforce with productivity and professionalism.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.