

APPLIED INDUSTRIAL TECHNOLOGY (CARPENTRY) (ATCT)

ATCT-1301 Introduction to Carpentry 2 Credits

Introduction to carpentry apprenticeship. Includes in-depth overview of OSHA regulations as related to the construction industry. Covers a history of labor management association as it was in the past and how Joint Apprenticeship Committees interact today. Also includes, safety principles, including first aid and CPR.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1310 Carpentry Safety 2 Credits

Introduction to hazards and dangers of elevated working conditions, including those that involve use of ladders and scaffolds. Hazards of working in confined spaces of limited means of egress with limited natural ventilation that are not meant for continuous occupancy will be examined. Introduction to Material Safety Data Sheets and their use to reduce chemical accidents in the workplace. Use of proper safety procedures and safety equipment as prescribed by OSHA and/or safety enforcement agencies will be emphasized.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1320 Introduction to Hand and Power Tools 2 Credits

Study of wood properties, measurement techniques, types and applications of various common fasteners, properties of different woods, identification and use of hand tools, safety considerations, and use of circular portable saw, belt sander, edge sander, router, jigsaw, finish sander, and drill.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1331 Concrete Footers and Walls 2 Credits

Introduction to construction of concrete form work. Includes reading of construction working drawings, layout, fabrication, and erection of standard wall, column, and footing forms.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1340 (ICRA) Best Practices in Health Care Construction 1 Credit

This course is designed to promote the awareness of infection control in existing health-care facilities. Infection control techniques used to prevent the spread of infectious agents to other patients, other areas of the facility and to the workers themselves, will be emphasized. An awareness of the types of hazards presented to workers in health-care facilities will be covered as part of the course.

Lecture: 1 hours

Prerequisite(s): Departmental approval: Admissions to Carpenter's apprenticeship program.

ATCT-1351 Metal Studs and Dry Walls 2 Credits

Introduction to the Interior Systems industry. Construction practices, materials, and equipment used to lay out, fabricate and install metal stud systems. Related blueprint reading skills, math concepts, soffits, door frames and hardware are also an integral part of this course. An emphasis on safety regulations as according to OSHA standards.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1360 Scaffolding 2 Credits

Course covers the various types of scaffolding used in the construction industry including specific applications, assembly and dismantling procedures and identifies and explains the safety rules and regulations for safe assembly and use as prescribed by the Occupational Safety and Health Administration (OSHA).

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to the Carpenter's apprenticeship program.

ATCT-1370 Layout 2 Credits

Introduction to use of builder's level, level transit, and digital theodolite in the construction industry for establishment of elevations and grades and building layout. Course includes required math and geometry concepts and interpretation of site drawings and topographical plans generally used in the construction industry.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1381 Wood Framing 2 Credits

Introduction to basic principles of framing, including terminology, print information, design, codes and systems.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1390 Welding for Carpentry

2 Credits

Introduction to base level knowledge and skills in elementary shielded metal arc welding techniques and practices. Included are general theory of arc welding process, operation of welding equipment, welding safety practices, electrode characteristics and selection, identification of types of weld joints, and guided instruction and practice in arc welding.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program

ATCT-1491 Residential Steel Framing

2 Credits

Introduction to fundamentals of residential framing with steel. Course will include techniques on floor construction, interior/exterior wall construction and roof framing assemblies using steel trusses and/or rafters.

Lecture: 2 hours

Prerequisite(s): ATCT-1381 Wood Framing, and departmental approval: admission to any Applied Industrial Technology program.

ATCT-1550 Roof Framing I

2 Credits

Introduction to construction of common roof types to include: reading of construction working drawings; application of mathematical concepts and calculations related to roof structure; and layout, fabrication, and erection of roof members.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1610 Interior Finish

2 Credits

Introduction to skills required to determine materials and installation of finish elements. Included are window and door trim, interior door installation, standing and running trims.

Lecture: 2 hours

Prerequisite(s): ATCT-1381 Wood Framing, or departmental approval.

ATCT-1710 Stairs Layout

2 Credits

Introduction to basic principles of stair layout, including stair terminology, print information, design, codes, and types.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1806 Special Topics: Open House

2 Credits

Introduction to preparing and setting up for an event including: setting up stages, building scaffolds, building mockups for hands-on activities, cleaning, and painting. Setting up a cafeteria and lunch line for several hundred people. The class will also include communicating and directing those invited to the event.

Lecture: 2 hours

ATCT-1808 Special Topics in Total Station I

2 Credits

Covers the use of total station instruments and their application to field layout. The transfer of data from field drawings and CAD programs to the total station and data collectors for field layout tasks will also be covered. In addition, field layout problems will be utilized and different types of total station instruments will be presented.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to apprenticeship program.

ATCT-1810 Math for the Trades

2 Credits

Introduction to the math techniques used in the construction field. Math subjects that are covered include: addition, subtraction, multiplication, and division, adding and subtracting fractions and measurements, area, volume, estimation, percentages, decimals, and calculating load weights.

Lecture: 2 hours

ATCT-2220 Roof Framing II

2 Credits

Introduction to construction of hip roofs and intersecting roofs to include: reading of construction working drawings; applying terminology and math concepts related to hip roof type construction; and layout, fabrication, and erection of hip roof members.

Lecture: 2 hours

Prerequisite(s): ATCT-1550 Roof Framing I or departmental approval.

ATCT-2330 Trade Show

2 Credits

Installation and dismantling of trade show exhibits. Includes techniques and procedures, aerial lift, welded frame/mobile tower scaffold erector, and rigging.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-2341 Concrete Specialities

2 Credits

Heavy construction methods for forming piers, columns and decks are an integral part of this course. The techniques to form elevated decks, ramps and stairways will be emphasized. This course will focus on forming procedures as well as related mathematical concepts.

Lecture: 2 hours

Prerequisite(s): ATCT-1331 Concrete Footers and Walls, and departmental approval: admission to any Applied Industrial Technology program.

ATCT-2361 Suspended Ceilings

2 Credits

Skills and techniques required to install a variety of suspended ceiling systems. Includes identification and correct use of tools, reading blueprints, and focus on suspended grid systems.

Lecture: 2 hours

Prerequisite(s): ATCT-1351 Metal Studs and Dry Walls or departmental approval.

ATCT-2370 Interior Systems Layout**2 Credits**

Includes elementary concepts of the interior systems industry construction methods used to layout and fabricate standard metal stud partition walls and soffit systems. Includes related blueprint reading skills, angle and octagon wall layout, applicable math concepts, and safety regulations as prescribed by Occupational Safety and Health Administration (OSHA) standards.

Lecture: 2 hours

Prerequisite(s): ATCT-1351 Metal Studs and Dry Walls, and ATCT-2361 Suspended Ceilings, and departmental approval: admission to any Applied Industrial Technology program.

ATCT-2380 Advanced Stairs**2 Credits**

This is an advanced stair building course covering the calculation of stair design numbers needed to construct a set of curved stairs. Applied math with specific emphasis on the geometry of circles will be covered. In addition techniques necessary to layout, cut and fabricate curved stairs will be covered and applied in shop exercises.

Lecture: 2 hours

Prerequisite(s): ATCT-1710 Stairs Layout and departmental approval: admission to an Applied Industrial Technology Program.

ATCT-2390 Trussed Roofs**2 Credits**

Covers the framing of common roof types using manufactured trusses. Includes reading of truss design and placement drawings, truss design, and layout. Also included will be the erection, bracing and sheathing of trussed roofs and the construction of blind valleys according to installation standards. Fall protection and crane safety will also be an integral part of this course.

Lecture: 2 hours

Prerequisite(s): ATCT-1550 Roof Framing I and departmental approval: enrollment in Carpenter's apprenticeship program.

ATCT-2500 Exterior Finish**2 Credits**

Introduction to basic elements of exterior finish which includes roofing, door and window framing, wall finish. Product types, weather and heat considerations are examined.

Lecture: 2 hours

Prerequisite(s): ATCT-1610 Interior Finish or concurrent enrollment, or departmental approval.

ATCT-2511 Concrete Columns and Decks**2 Credits**

Interpretation of plans and specifications to lay out concrete foundations and construct columns, beams and decks for large commercial buildings.

Lecture: 2 hours

Prerequisite(s): ATCT-1331 Concrete Footers and Walls, and ATCT-2341 Concrete Specialties, and ATCT-1370 Layout; or departmental approval.

ATCT-2520 Stairs Installation**2 Credits**

Introduction to the art and science of laying out, fabricating, and installing fine staircases which are mitered and have hard balustrades using newel posts, rails, and balusters.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-2540 Roof Framing III**2 Credits**

Introduction to layout procedures and mathematical derivation of rafter lengths found in roofs, having more than one slope and containing various offsets. Includes roofs containing all or part of hexagonal shapes or octagonal shapes. Cutting and fabrication of all rafters is an integral part of course.

Lecture: 2 hours

Prerequisite(s): ATCT-1550 Roof Framing I and ATCT-2220 Roof Framing II and departmental approval.

ATCT-2560 Interior Systems III**2 Credits**

In depth study of interior systems including barrel and dome ceilings and commercial door hardware used in the construction industry. Topics include use of specific tools and machining techniques required to install doors and door hardware, frames, exit devices, and associated items. Applicable math concepts, door and hardware schedules; and safety practices as prescribed by OSHA also included. Extensive guided instruction and practice provided.

Lecture: 2 hours

Prerequisite(s): ATCT-2361 Suspended Ceilings or departmental approval.

ATCT-2806 Special Topics in Introduction to Solar Installations**2 Credits**

Introduction to the methods and tools required to install solar panels. Covers basic knowledge of solar panels, the relationship to the sun depending on geographical location, and OSHA standards that apply to the jobsite situation (working on roofs, fall protection, PPE, etc). Production methods will also be emphasized. Upon successful completion of this course, student will earn a 4-year Solar Installer Qualification. This can be renewed with an eight-hour refresher course.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to apprenticeship program.