

# **Texas Carpenters and Millwrights Training Trust Fund, Houston Campus Carpenter Apprentice Curriculum**

Every apprentice must take (1) one class a quarter, 1<sup>st</sup> quarter January through March; 2<sup>nd</sup> quarter April through June; 3<sup>rd</sup> quarter July through September and 4<sup>th</sup> quarter October through December.

## **First Year (1<sup>st</sup> & 2<sup>nd</sup> Period)**

### **1- Math for the Trades**

This course provides an understanding of tech math beginning with general math, fractions, and decimals. Measurement and measurement tools, layout, area measure, and volume measure are all explained in detail with numerous exercises. A special effort has been made to set exercises in the context of real life technical work tasks.

### **2- Fundamentals of Carpentry (includes OSHA 10)**

This four day course will provide training in fundamental carpentry along with safety training needed in the field. Apprentice who complete this class will also receive their OSHA 10 safety card.

### **3- Basic Carpentry**

This course provides the basic skills and safety precautions for working in the Industrial and Commercial Carpentry Industry. Tool requirements, safe operation, selection and inspection are covered.

### **4- Safety Classes (includes First Aid, CPR, AED, PITO, Fall Protection, Aerial Lift)**

First Aid - This one-day course combines with the next four days to provide 40 hours of Safety Training. This course provides information as well as practical application of first aid techniques.

CPR/AED - This one-day course combines with the other four days this week to provide 40 hours of Safety Training. This course will provide Apprentice with the basics of Cardiopulmonary Resuscitation and the use of an Automated External Defibrillator.

PITO Forklift - This one-day course combines with the other four days this week to provide 40 hours of Safety Training. This course introduces many kinds of lift trucks—their components and applications. The course focuses on industrial lift trucks and rough terrain lift trucks, highlighting unique features and explaining procedures for visual and operating inspections and maintenance. Participants will also learn safe operating procedures.

Fall Protection - This one-day course combines with the other four days this week to provide 40 hours of Safety Training.

Aerial Lift - This one-day course combines with the other four days this week to provide 5 days and a total of 40 hours of Safety Training.

## **Second Year (3<sup>rd</sup> & 4<sup>th</sup> Period)**

### **1- Print Reading**

Apprentice are introduced to lines and symbols that an architect or designer creates. The course encourages creative thinking so that the individual understands and is able to transfer what is on paper to a finished structure or project. The course includes: Introduction to Prints and Specifications; Types of Prints; Title Blocks; Line Identification, Dimensions and Measurements; Symbols and Abbreviations; Views; Elevations; and Governing Codes & Regulations.

### **2- Trade Show I & D**

This course provides the procedures and safety precautions for trade shows and special events. Tool requirements, freight tracking and handling, and the inspection of powered vehicles are covered. Participants will learn about booth configurations, dimensions and sections of exhibit floors, and how to identify these elements on floor plans. The steps for installing and removing carpet, furniture, and accessories are presented. Procedures are given for pipe and drape, skirting and bunting, signage, and graphics. System and custom exhibits are also covered as well as directions for making field repairs. Safety is emphasized throughout.

### **3- Scaffolding**

This six-day 60 hour course will provide apprentice with the skills needed to be placed on scaffolding jobs in the Houston area. Apprentice must have OSHA 10 in order to meet scaffolding requirements. This course provides clarification of the roles of a competent person and a qualified person and presents training requirements for erectors, dismantlers, and users. Information and guidance are given for calculating capacity and contributory leg loads. Criteria are given for all scaffold types as well as methods for platform construction. The course includes assembly techniques for frame, tube and clamp, and systems scaffolds. Scaffold access and egress and safe use guidelines are discussed as well as fall protection and falling object protection.

### **4- Metal Framing**

Construction of today's modern office buildings requires knowledge of the basic installation procedures for metal framing and drywall. The Introduction to Metal Framing course introduces the materials, tools, and fasteners used to construct metal wall framing. It also provides instruction on print reading, site inspection, and estimating the materials, tools, and equipment needed to efficiently complete a job. Introduction to Metal Framing introduces the proper way to cut materials, install track and studs, and deals with specialized framing such as suspended ceilings, soffits, columns, shaft walls, furring and chase walls.

## **Third Year (5<sup>th</sup> & 6<sup>th</sup> Period)**

### **1- Drywall Application**

This class covers basic drywall information, including the different types of drywall products and the proper techniques for delivering, handling, and storing drywall. The class emphasizes the importance of safety precautions when hanging drywall, including using the correct PPE and the safe handling of power tools. The importance of job planning is emphasized, including gathering information, estimating materials, scheduling deliveries, and coordinating with other trades so that the project remains on time and within budget. The class provides instruction and supervision to accurately prepare and install drywall panels; using the correct tools and methods for taking measurements; and completing all required cuts accurately.

### **2- Acoustical Ceilings**

This course deals with the material, design, and codes in the acoustical ceiling industry. The course identifies common grid components in use, and how and where to find the print reading information needed to correctly lay out and install the ceiling. The latest codes and standards and regulating bodies are identified as are the proper installation methods for exposed and concealed grid ceilings. The addition of metal ceilings, open grid systems, and grid soffit framing as well as the latest installation techniques will improve the productivity of even the most experienced

### **3- Doors and Hardware**

This Doors and Hardware course explores door types, frames, and hardware in depth so that apprentice learn the skills required to ensure that doors and hardware operate properly. There are also numerous tips and techniques that emphasize the importance of organization in the preparation, selection, and installation of doors and finish hardware. The course begins with a thorough explanation of prints and schedules and proceeds with instructions on how to identify and select the proper components for a door opening. The basic door swing and door schedules are covered as well as proper storage and handling techniques.

### **4- Infection Control Risk Assessment (ICRA): Best Practices in Health-Care Facilities**

This course promotes the importance of infection control and outlines protection methods and safe work practices for those who perform construction work in Health Care Facilities. The focus is on renovations and additions to existing occupied buildings. Various types of hazardous materials are identified along with information on how to recognize such hazards, the ways such materials invade the body, and methods to control and minimize exposure. The unique construction challenges of healthcare environments are presented. The course also deals with administrative controls in such facilities and the regulatory agencies for such facilities. The importance of controlling contaminants, guidelines, precautions, and infection control methods are discussed along with descriptions of the specific information on determining risk levels and how all of these challenges relate to construction within the facility. Finally, the course gives specific information on mold, the ways to control and contain a work area, and methods of remediation.

## **Fourth Year (7<sup>th</sup> & 8<sup>th</sup> Period)**

### **1- Introduction to Formwork (Concrete 1)**

This course presents many of the basic and most important aspects of concrete formwork, including formwork materials, form hardware, and formwork safety practices. UBC apprentice will learn how to fabricate simple wall forms for a footing form and a foundation wall form in a safe and efficient way.

### **2- Form Hardware (Concrete 2)**

This Form Hardware 2 course provides apprentice with time to practice skills necessary to recognize, select, and install form hardware. Apprentice will identify and use a variety of hardware devices to reinforce learning.

### **3- Interior Finishes 1**

This course describes the various materials used in interior finishes along with the hand and power tools required. Basic skills are given, such as sharpening chisels; scribing and fitting material; and locating framing members and backing. Participants will learn how to install a variety of interior doors as well as how to construct and install a job-built door frame and a variety of specialty doors. The layout and installation of a variety of finish wall coverings and ceiling treatments are also covered. Safety precautions are included throughout.

### **4- Interior Finishes 2**

This second class emphasizes cabinets, countertops, and stairways. The components of various types of cabinets are described, including face frame, frameless, upper cabinets with a peninsula, and base cabinets with an island. Installation and re-facing skills are taught. Countertops are dealt with and procedures for installing a plastic laminate countertop are included. Stairways--their components and purposes--are detailed and participants learn how to install the components of a stairway. Procedures are given for the installation of standing trim including case joinery, door casing, and window trim. Instructions are also given for installing a variety of running trim including baseboards, chair rails, and cornices. The class concludes with the layout and installation of wall coverings and various types of ceiling treatments are described.