

CARPENTER INDUSTRY ADVISORY COMMITTEE

2020

Minimum Industry Training Standards

Acoustical

Cabinetmaker

Carpentry

Drywall Applicator

Hardwood Floor Layer

Insulator

Modular Installer

Millwright

Pile Driver

Scaffold Erector

Shingler

Industry Training Criteria for Acoustical Installer

ONET Code: 47-2031-01A

Date: 8/24/2020

Completion rate established at 30%

1. Length of Training

- a. Minimum of three years
- b. Minimum of 3600 work hours

2. Related Supplemental (Classroom) Instruction

- a. Minimum of 144 hours of Related and Supplemental Instruction per year.
- b. Appendix A: Acoustical Installer related and supplemental instruction

3. On The Job Training

- a. Appendix B: Acoustical Installer Work Processes

4. Competency Evaluation

- a. All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. Apprenticeship Program Completion Percentages

- a. Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 30%.

6. Procedures for the Review and Revision of the Training Criteria

- a. The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Acoustical Installer shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Acoustical Installer Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA)
 - First aid and CPR certification

2. Basic Skills
 - Trade orientation
 - Construction Mathematics
 - Print reading
 - Layout and leveling instruments
 - Scaffolds

3. Hanger Installation
 - Measuring and layout
 - Cutting and fitting
 - Code requirements

4. Ceiling Suspension Installation
 - Standard grid patterns
 - Special ceilings and security systems

5. Sound Attenuation Systems

6. Green Construction & Supplemental Skills
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite “green” responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

Industry Training Criteria for Cabinet Maker

ONET Code: 51-7011.0

Date: 8/24/2020

1. Length of Training

Minimum of four years

Minimum of 4800 work hours

2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Cabinet Maker related and supplemental instruction

3. On The Job Training

Appendix B: Cabinet Maker Work Processes

4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Cabinet Maker shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Cabinet Maker Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA)/respirators; confined space
 - Material safety data sheets (SDS)
 - First aid and CPR certification
2. Basic Skills
 - Trade orientation
 - Construction mathematics
 - Print reading
 - Layout and leveling instruments
 - Stock bills and estimating
3. Hand and Power Tools
 - Precision measuring and layout
 - Plunge and edge cuts
 - Finishing edges and surfaces
4. Milling and Shaping Equipment
 - Materials and cut lists
 - Quality control and productivity
5. Cabinet Design Construction
 - Computer aided design (CAD); production work
 - Jigs and fixtures
 - Fitting and assembly
6. Installation and Finish Work
 - Layout and alignment
 - Installation sequences and procedures
 - Wood finishes and repairs
7. Green Construction & Supplemental Skills
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite “green” responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

Industry Training Criteria for Carpentry

ONET Code: 47-2031.01

Date : 8/24/2020

1. **Length of Training**

Minimum of four years

Minimum of 4800 work hours

2. **Related Supplemental (Classroom) Instruction**

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Carpentry related and supplemental instruction

3. **On The Job Training**

Appendix B: Carpenter Work Processes

4. **Competency Evaluation**

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. **Apprenticeship Program Completion Percentages**

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

6. **Procedures for the Review and Revision of the Training Criteria**

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Carpentry shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Carpentry Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA)
 - First Aid and CPR Certification
2. Basic Skills
 - Trade orientation
 - Construction mathematics
 - Print reading and code requirements (Cal-Green)
 - Layout and leveling instruments
 - Scaffolds
3. Foundation and Floor Construction Systems
4. Structural Framing
 - Wood
 - Metal
 - Manufactured panels
5. Concrete Form Construction
6. Finish Carpentry
 - Interior
 - Exterior
7. Interior Systems
 - Metal studs; drywall; acoustical
 - Cabinet and casework installation; modular systems
 - Clean room
8. Roof Framing
 - Conventional roof framing
 - Engineered components
9. Stair Building
10. Building Envelope and Weatherization Skills
11. Alternative Energy Systems
 - Residential solar systems installation
 - Commercial photovoltaic; concentrated PV and tracking systems
12. Green Construction & Supplemental Skills
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite “green” responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

Industry Training Criteria for Drywall Applicator

ONET Code: 47-2031.01D

Date: 8/24/2020

1. Length of Training

Minimum of three years

Minimum of 4800 work hours

2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Drywall Applicator related and supplemental instruction

3. On The Job Training

Appendix B: Drywall Applicator Work Processes

4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 30%.

6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Drywall Applicator shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Drywall Applicator Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA)
 - First aid and CPR certification

2. Basic Skills
 - Trade orientation
 - Construction mathematics
 - Print reading
 - Layout and leveling instruments
 - Scaffolds

3. Framing Installation
 - Measuring and layout
 - Wood and metal
 - Cutting and fitting
 - Welding AWS

4. Interior and Exterior Systems
 - Gypsum and low VOC; green board
 - Exterior insulation finish system (E.I.F.S.)
 - Drywall repairs and patching
 - Drywall finishing

5. Green Construction & Supplemental Skills
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite “green” responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

Industry Training Criteria for Hardwood Floor Layer

ONET Code: 47-2031.01L

Date: 8/24/2020

1. Length of Training

Minimum of three years

,Minimum of 3600 work hours

2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Hardwood Floor Layer related and supplemental instruction

3. On The Job Training

Appendix B: Hardwood Floor Layer Work Processes

4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Hardwood Floor Layer shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Hardwood Floor Layer Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA); respirators
 - Safety Data Sheets
 - First aid and CPR certification
2. Basic Skills
 - Trade orientation
 - Construction mathematics
 - Print reading and code requirements (Cal-Green)
3. Tools of the Trade
 - o Sanding and finishing equipment
 - o Tool maintenance and repair
4. Installation of Wood Flooring
 - Strip flooring
 - Tongue and groove
 - Pre-finished
 - Athletic and specialty floors
 - FSC certified and/or rapidly renewable flooring materials
5. Sanding and Finishing
6. Green Construction & Supplemental Skills
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite “green” responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

Industry Training Criteria for Insulator

ONET Code: 47-2131.00

Date : 8/24/2020

1. Length of Training

Minimum of 3 years

Minimum of 3600 work hours

2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Insulator related and supplemental instruction

3. On The Job Training

Appendix B: Insulator Work Processes

4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Insulator shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Insulator Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA)
 - First aid and CPR certification
2. Basic Skills
 - Trade orientation
 - Construction mathematics
 - Print reading and code requirements (Cal-Green)
 - Layout and leveling instruments
 - Scaffolds
3. Job Preparation, Organization and Control
 - Material identification, handling, storage, loading and securing for transport
 - Stocking, record keeping/inventory control; job orders (work sheets), and material quantity control
 - Familiarization with building envelope insulation best practices
4. Blown-In Insulation
 - Access preparation, refitting and close up
 - Blow machine operation and maintenance
 - Application of loose fill in walls and ceilings
5. Batt & Blanket Installation
 - Residential
 - Commercial and industrial building walls, ceiling and floors
6. Foil & Moisture Barrier Installation
 - Applicable to residential, commercial and industrial applications.
7. Spray, Rigid, and Specialty Application
 - Residential, commercial and industrial application of low volatile organic compounds (VOC) (g), cellulose, urethane and light weight plaster
 - Sound board, styrene, and urethane rigid insulation
 - Fire stop systems
8. Green Construction & Supplemental Skill
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite “green” responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

Industry Training Criteria for Modular Installer

ONET Code: 51-9199.99M

Date: 8/24/2020

1. Length of Training

Minimum of two years

Minimum of 2400 work hours

2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Modular Installer related and supplemental instruction

3. On The Job Training

Appendix B: Modular Installer Work Processes

4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary the industry training criteria. Any and all such industry training criteria for Modular Installer shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Modular Installer Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA)/ergonomics
 - First aid and CPR certification
2. Basic Skills
 - Trade orientation
 - Construction mathematics
 - Print reading
 - Stock bills and work orders
3. Hand and Power Tools
 - Measuring, layout and alignment
 - Power supply and cordless tool management
 - Drills, attachments and anchoring
4. Site Considerations
 - Personal appearance, behavior and office etiquette
 - Material delivery, handling and staging
 - Establishing and maintaining clear transit route(s)
 - Housekeeping and health hazards
5. Assembly Construction
 - General assembly procedures
 - Manufacturer's product-specific instructions and guidelines
 - Custom work and adjustments
 - Quality Control and productivity
6. Installation and Finish Work
 - Layout and alignment
 - Installation sequences and procedures
 - Electrical and component connections
 - Cabinets, shelving and accessories
 - Wood finishes and repairs
7. Green Construction & Supplemental Skills
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite "green" responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

Industry Training Criteria for Millwright

ONET Code: 49-9044.00

Date: 8/24/2020

1. Length of Training

Minimum of four years

Minimum of 4800 work hours

2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Millwright related and supplemental instruction

3. On The Job Training

Appendix B: Millwright Work Processes

4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 36%.

6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary the industry training criteria. Any and all such industry training criteria for Millwright shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Millwright Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA)
 - First aid and CPR certification

2. Basic Skills
 - Trade orientation
 - Construction mathematics
 - Print reading
 - Layout and leveling instruments
 - Human performance

3. Cutting & Welding
 - Oxy-acetylene cutting and welding
 - Plasma-arc cutting
 - Layout, fabrication and fitting
 - AWS structural welding

4. Machinery Installation
 - Layout and machinery bases
 - Precision measuring and alignment
 - Power drives and hydraulic systems
 - Rigging

5. Machinery Maintenance
 - Pumps and motors
 - Compressors
 - Bearings, pulleys and belts
 - Turbines and generators
 - Troubleshooting and repairs

6. Alternative Energy Systems
 - Utility scale concentrated PV and tracking systems
 - Wind turbine installation and maintenance
 - Geo-thermal and cogeneration power production

7. Green Construction & Supplemental Skills
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite “green” responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

Industry Training Criteria for Pile Driver

ONET Code: 47-2072.00

Date: 8/24/2020

1. Length of Training

Minimum of four years

Minimum of 4800 work hours

2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Pile Driver related and supplemental instruction

3. On The Job Training

Appendix B: Pile Driver Work Processes

4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 30%.

6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Pile Driver shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Pile Driver Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA)
 - First aid and CPR certification
2. Basic Skills
 - Trade orientation
 - Construction mathematics
 - Print reading
 - Layout and leveling instruments
 - Scaffolds
3. Pile Driving
 - Measuring and layout
 - Rigging and signaling
 - Structural pile driving
 - Retaining pile systems (cofferdams, etc.)
 - Handling piles and hammers
 - Pile driving equipment
4. Concrete and Formwork
 - Bridge decks and abutments
 - Pile caps and columns
5. Heavy Timber Framing and Falsework
 - Pipe shoring o Timber falsework
 - Manufactured falsework
6. Marine and Underwater Work
 - Piers and docks
 - Diving systems and submersibles
 - Underwater welding
 - Wave energy conversion (WEC) devices
7. Cutting and Welding
 - Oxy-acetylene cutting and welding
 - Layout, fabrication and fitting
 - AWS structural welding
8. Green Construction & Supplemental Skills
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite “green” responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

Industry Training Criteria for Scaffold Erector

ONET Code: 47-2031.02S

Date: 8/24/2020

1. Length of Training

Minimum of four years

Minimum of 4800 work hours

2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Scaffold Erector related and supplemental instruction

3. On The Job Training

Appendix B: Scaffold Erector Work Processes

4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Scaffold Erector shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Scaffold Erector Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA)/fall protection
 - First aid and CPR certification
 - Confined space safety training
2. Basic Skills
 - Trade orientation
 - Construction mathematics
 - Print reading
 - Layout and leveling instruments
 - Scaffold regulations
3. Frame Scaffold Installation
 - Measuring and layout
 - Basic installation and attachment methods
4. System Scaffold Installation
 - Measuring and layout
 - Basic installation and attachment methods
5. Tube & Clamp Scaffold Installation
 - Measuring and layout
 - Basic installation and attachment methods
 - Confined space (angles and slopes)
6. Specialty Scaffold Applications
7. Green Construction & Supplemental Skills
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite “green” responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

Industry Training Criteria for Shingler

ONET Code: 47-2181.00S

Date: 8/24/2020

1. Length of Training

Minimum of two years

Minimum of 2400 work hours

2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Shingler related and supplemental instruction

3. On The Job Training

Appendix B: Shingler Work Processes

4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Shingler shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

Appendix A: Shingler Related and Supplemental Instruction

1. Safety
 - Safety with hand and power tools
 - Construction site worker safety (OSHA)/fall protection
 - First aid and CPR certification

2. Basic Skills • Trade orientation
 - Construction mathematics
 - Print reading and code requirements (Cal-Green)
 - Rigging

3. Weatherization o Flashing
 - o Underlayment applications
 - o Exterior weather protection
 - o Sealing the building envelope

4. Roofs and Sidewalls
 - Composition
 - Shake
 - Wood shingle
 - Metal
 - Tile
 - Solar system installations

5. Green Construction & Supplemental Skills
 - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
 - Green rating systems; personal jobsite “green” responsibilities
 - Green building codes: CalGreen
 - Green products and sustainable building materials
 - Waste management and recycling procedures
 - Site environmental management and protection procedures
 - Construction air quality management

