MODULE OVERVIEW

This module provides information that will help trainees read and understand commercial drawings and specifications. It includes an explanation of how drawings are used to convey specific construction requirements.

PREREQUISITES

Prior to training with this module, it is recommended that the trainee shall have successfully completed Core Curriculum and Drywall Level One.

OBJECTIVES

Upon completion of this module, the trainee will be able to do the following:

1. Recognize the differences between commercial and residential construction drawings.
2. Identify the sheet index, material symbols, code summary, project team, and other references contained in a set of commercial drawings.
3. Accurately read a set of commercial drawings.
4. Identify and document specific items from a door and window schedule.
5. Explain basic construction details and concepts employed in commercial construction.

PERFORMANCE TASKS

Under the supervision of the instructor, the trainee should be able to do the following:

1. Locate ten items contained in a set of commercial drawings (the instructor will select the items).
2. Using a door and window schedule, identify the hardware, ratings, and finishing for each door and window.

MATERIALS AND EQUIPMENT LIST

- Overhead projector and screen
- Transparencies
- Blank acetate sheets
- Transparency pens
- Whiteboard/chalkboard
- Markers/chalk
- Pencils and scratch paper
- Appropriate personal protective equipment
- Pictures of commercial buildings
- Set of commercial drawings
- Set of residential drawings
- Window and door schedules and related floor plans
- Written specifications
- Examples of the following plans/drawings:
  - Site plans
  - Structural drawings
  - Mechanical drawings
  - Plumbing drawings
  - Electrical drawings
  - Architectural drawings
  - Floor plans
  - Detail drawings
  - Elevation drawings
  - Framing plans
- Copies of Quick Quizzes*
- Module Examination**
- Performance Profile Sheets**

* Located in the back of this module.
** Located in the Test Booklet.
SAFETY CONSIDERATIONS
Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly. Emphasize basic site safety. This module may require trainees to visit job sites. Make sure that all trainees are briefed on site safety procedures.

ADDITIONAL RESOURCES
This module is intended to present thorough resources for task training. The following reference works are suggested for both instructors and motivated trainees interested in further study. These are optional materials for continued education rather than for task training.


TEACHING TIME FOR THIS MODULE
An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 25 hours are suggested to cover Commercial Drawings. You will need to adjust the time required for hands-on activity and testing based on your class size and resources. Because laboratories often correspond to Performance Tasks, the proficiency of the trainees may be noted during these exercises for Performance Testing purposes.

<table>
<thead>
<tr>
<th>Topic</th>
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<tbody>
<tr>
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<tr>
<td>A. Introduction</td>
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<td>B. Commercial Plan Requirements and Contents</td>
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<td>1. Requirements</td>
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<td>2. Contents</td>
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<td>Sessions III and IV. Reading and Understanding Drawings I</td>
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<tr>
<td>A. Reading Commercial Plans</td>
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<td>B. Architectural Drawings</td>
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<tr>
<td>C. Laboratory</td>
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<tr>
<td>Have trainees practice calculating the area of each room in a floor plan in a set of commercial drawings.</td>
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<tr>
<td>Sessions V and VI. Reading and Understanding Drawings II</td>
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<td>A. Schedules</td>
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<td>B. Elevations and Sections</td>
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<tr>
<td>C. Laboratory</td>
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<tr>
<td>Have trainees use a door and window schedule to identify the hardware, ratings, and finishing for each door and window. This laboratory corresponds to Performance Task 2.</td>
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<tr>
<td>Sessions VII and VIII. Reading and Understanding Drawings III</td>
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<tr>
<td>A. Structural Drawings</td>
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<tr>
<td>B. Mechanical Drawings</td>
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</tbody>
</table>
Session IX. Reading and Understanding Drawings IV; Written Specifications

A. Electrical Drawings
B. Written Specifications
C. Laboratory
   Have trainees locate ten items contained in a set of commercial drawings. This laboratory corresponds to Performance Task 1.

Session X. Review and Testing

A. Review
B. Module Examination
   1. Trainees must score 70% or higher to receive recognition from NCCER.
   2. Record the testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.
C. Performance Testing
   1. Trainees must perform each task to the satisfaction of the instructor to receive recognition from NCCER. If applicable, proficiency noted during laboratory exercises can be used to satisfy the Performance Testing requirements.
   2. Record the testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.
MODULE OVERVIEW

This module covers the various aspects of steel framing construction, including common tools and fasteners used, framing components, and framing system accessories. Instructions for selecting and installing steel framing for exterior walls, interior walls, and partitions are also provided.

PREREQUISITES

Prior to training with this module, it is recommended that the trainee shall have successfully completed Core Curriculum; Drywall Level One; and Drywall Level Two, Module 45201-09.

OBJECTIVES

Upon completion of this module, the trainee will be able to do the following:

1. Identify the components of a steel framing system.
2. Identify and select the tools and fasteners used in a steel framing system.
3. Identify applications for steel framing systems.
5. Lay out and install a steel stud structural wall with openings to include bracing and blocking.
6. Lay out and install a steel stud nonstructural wall with openings to include bracing and blocking.
7. Interpret engineer drawings/shop installations.
8. Follow shop drawings to build:
   - Windows/openings
   - Bottom track
   - Top track
   - Bypass clips
   - Deflection cups
9. Integrate work of other trades:
   - Window
   - Water management
   - Stone/brick
   - Miscellaneous iron support

PERFORMANCE TASKS

Under the supervision of the instructor, the trainee should be able to do the following:

1. Build a section of curtain wall from shop drawings to include a window opening with headers, jambs, and sill.
2. Build a section of wall to include an attachment to miscellaneous iron; box out at vertical angles; install clips.
4. Lay out and install a steel stud structural wall with openings to include bracing and blocking.
5. Lay out and install a steel stud nonstructural wall with openings to include bracing and blocking.
MATERIALS AND EQUIPMENT LIST

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Hand tools required for steel framing:
   Screwgun
   Powder-actuated fastener gun
   Hammer drill
   Locking pliers (Vise-Grip™ pliers)
   C-clamps and bar clamps
   Chop saw
   Dry-cut metal cutting saw
   Swivel-head shears
   Aviation snips
   Hole punches
   Hole saw
   Laser level
   Laser bob
   Plumb bob
   Clinching tool
   End circuit nippers and metal snips
   Channel stud shear
   Metal lock fastener (crimper)
   Hand level
   Claw hammer
   Framing square
   Powder-actuated tool training and certification materials
   Standard for Cold-Formed Steel – General Provisions

Various fasteners used with steel framing:
   Self-tapping screws
   Drywall screws
   Pan head screws – 3⁄8", 1⁄2" Type S or S-12
   1⁄2" masonry nails
   Pins
   Bolts and anchors

Floor plan
Slip connectors
Chalkline
100' steel tape

Custom jigs
Door frame jack
Two 1" × 25-gauge metal straps
Red or yellow spray paint
Thin boards
Wood wedges and blocks

Samples of steel framing components and materials:
   Studs
   Runners/tracks
   Metal furring channel and clips
   Resilient channel
   Cold-rolled channel
   Metal door frames, anchors, and clips
   Metal angles
   Tie wire
   Furring brackets for adjustable walls
   Breakaway clips
   Fine-gauge framing material
   Snap-in and standard runner track
   Stud shoes
   Standard resilient clips
   Resilient starter/finisher clips
   Plain drywall channel
   Metal joists
   Metal trusses
   Marked steel framing members (various)
   Bracing

Nonstructural steel framing members and accessories

To the extent possible, prebuilt samples to demonstrate techniques, including:
   Curtain wall framing
   Double top plate
   Held-back partition
   Furring channels
   Metal stud secured to a steel beam
   Metal stud attached to a metal channel
   Window frame and header
   Simple 90-degree radius wall
   Combination wood/metal frame window
   Metal stud wall secured to a concrete wall
   Metal stud frame for a glass wall

Copies of the Quick Quiz*
Module Examinations**
Performance Profile Sheets**
SAFETY CONSIDERATIONS

Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly. This module may require trainees to visit construction sites. Ensure that they are briefed on site safety procedures. This module requires trainees to use power tools to perform metal stud framing. Ensure that all trainees are properly briefed on the use of power tools and are appropriately trained and certified in the safe use of powder-activated tools before using them.

ADDITIONAL RESOURCES

This module is intended to present thorough resources for task training. The following reference works are suggested for both instructors and motivated trainees interested in further study. These are optional materials for continued education rather than for task training.

Allied Steel Buildings: www.alliedbuildings.com
Dietrich Metal Framing, Inc.: www.dietrichindustries.com
Steel Framing Alliance: www.steelframing.org
The Steel Network, Inc.: www.steelnetwork.com

TEACHING TIME FOR THIS MODULE

An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 50 hours are suggested to cover Steel Framing. You will need to adjust the time required for hands-on activity and testing based on your class size and resources. Because laboratories often correspond to Performance Tasks, the proficiency of the trainees may be noted during these exercises for Performance Testing purposes.

<table>
<thead>
<tr>
<th>Topic</th>
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<td><strong>Sessions I–IV. Introduction; Tools, Fasteners, and Materials for Steel Framing</strong></td>
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<tr>
<td>A. Introduction</td>
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<tr>
<td>1. Structural Engineering</td>
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<td>B. Tools for Steel Framing Work</td>
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<tr>
<td>1. Power Tools</td>
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<td>C. Fasteners for Steel Framing Work</td>
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<td>1. Screws</td>
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<td>2. Pins, Clinching, Bolts, and Anchors</td>
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<td>D. Steel Framing Materials and Methods</td>
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<td>1. Identification Codes</td>
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<td>2. Framing Methods</td>
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<td>E. Assembling a Steel Frame</td>
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<td><strong>Sessions V–VIII. Steel Framing Applications I</strong></td>
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<tr>
<td>A. Framing Walls</td>
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<td>1. Layout</td>
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<td>2. Wall Assembly</td>
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<tr>
<td>3. Wall Installation</td>
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<td>4. Header Assembly</td>
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<td>5. Jambs and Sills</td>
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</tbody>
</table>
B. Laboratory
   Have the trainees build a section of wall to include an attachment to miscellaneous iron; box out at vertical angles; install clips. This laboratory corresponds to Performance Task 2.

C. Floor and Roof Assemblies

Sessions IX–XIII. Steel Framing Applications II

A. Laboratory
   Have the trainees build several types of headers (back-to-back, box, and L-shaped). This laboratory corresponds to Performance Task 3.

B. Bracing Steel Walls

C. Laboratory
   Have the trainees lay out and install a steel stud structural wall with openings to include bracing and blocking. This laboratory corresponds to Performance Task 4.

Sessions XIV–XVIII. Steel Framing Applications III

A. Nonstructural Wall Framing
   1. Curtain Walls
   2. Curved Walls
   3. Other Nonstructural Assemblies
   4. Furring

B. Laboratory
   Have the trainees build a section of curtain wall from shop drawings to include window openings with headers, jambs, and sill. This laboratory corresponds to Performance Task 1.

C. Laboratory
   Have the trainees lay out and install a steel stud nonstructural wall with openings to include bracing and blocking. This laboratory corresponds to Performance Task 5.

Session XIX. Slip Connections and Other Connections

A. Slip Connections

B. Other Typical Connections

Session XX. Review and Testing

A. Module Review

B. Module Examination
   1. Trainees must score 70% or higher to receive recognition from NCCER.
   2. Record the testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

C. Performance Testing
   1. Trainees must perform each task to the satisfaction of the instructor to receive recognition from NCCER. If applicable, proficiency noted during laboratory exercises can be used to satisfy the Performance Testing requirements.
   2. Record the testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.
Acoustical Ceilings
Annotated Instructor’s Guide

MODULE OVERVIEW
This module covers the materials, layout, and installation procedures used in many types of commercial suspended ceiling systems. Information about specialty ceiling systems, seismic considerations, and suspended ceiling system materials estimation is also provided.

PREREQUISITES
Prior to training with this module, it is recommended that the trainee shall have successfully completed Core Curriculum; Drywall Level One; and Drywall Level Two, Modules 45201-09 and 45202-09.

OBJECTIVES
Upon completion of this module, the trainee will be able to do the following:

1. Establish a level line.
2. Explain the common terms related to sound waves and acoustical ceiling materials.
3. Identify the different types of suspended ceilings.
4. Interpret plans related to ceiling layout.
5. Sketch the ceiling layout for a basic suspended ceiling.
6. Perform a material takeoff for a suspended ceiling.
7. Install selected suspended ceilings.

PERFORMANCE TASKS
Under the supervision of the instructor, the trainee should be able to do the following:

1. Use a laser to establish a level line at ceiling level such as is required when installing the wall angle for a suspended ceiling.
2. Lay out and install selected suspended ceiling systems according to a specific plan.
3. Draw a ceiling plan/sketch for a typical room, then use the plan/sketch to estimate the quantities of materials needed to install an exposed grid ceiling system in the room.

MATERIALS AND EQUIPMENT LIST
Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Pictures of various types of suspended ceilings
Pictures of drywall grid systems
Pictures of various luminous ceiling systems
Set of plans and specifications, including a reflected ceiling plan
Ceiling plan or scaled sketch of a ceiling layout
Graph paper
Architect’s scale

Variety of ceiling panels and tiles
Acoustical tile
Components for the following systems:
  Exposed grid ceiling system
  Suspended drywall furring system
  Metal pan ceiling system
  Direct-hung concealed grid ceiling system
  Integrated ceiling system
Ceiling components used in buildings in seismic categories D, E, and F
Materials/equipment for cleaning a suspended ceiling
Scrap pieces of wall angle
Flat anti-breather spline
Decibel meter
Basic carpenter’s tool box
Framing square
Level

continued
Session II. Reading Plans and Specifications; Ceiling Leveling Equipment; Ceiling Panels and Tiles
A. Reading Plans and Specifications
B. Ceiling Leveling Equipment
C. Laboratory
   Have trainees use a laser to establish a level line at ceiling level such as is required when installing the wall angle for a suspended ceiling. This laboratory corresponds to Performance Task 1.
D. Ceiling Panels and Tiles

Session III. Exposed Grid Systems
A. Grid System Components
B. Installation Procedures

Session IV. Suspended Drywall Ceiling Systems
A. Drywall Furring Ceiling Systems
B. Drywall Grid Systems
C. Laboratory
   Have trainees lay out and install a selected suspended ceiling system according to a specific plan. This laboratory corresponds to Performance Task 2.

Session V. Specialty Systems I
A. Metal Pan Systems
B. Direct-Hung Concealed Grid Systems
C. Integrated Ceiling Systems

Session VI. Specialty Systems II; Seismic Considerations
A. Luminous Ceiling Systems
B. Other Specialty Ceiling Systems
C. Seismic Considerations

Session VII. Laying Out and Estimating Materials; Cleaning Ceilings; Installation Best Practices
A. Laying Out and Estimating Materials
B. Laboratory
   Have trainees draw a ceiling plan/sketch for a room, and then use it to estimate the quantities of materials needed to install an exposed grid ceiling system in a room. This laboratory corresponds to Performance Task 3.
C. Ceiling Cleaning
D. Installation Best Practices

Session VIII. Review and Testing
A. Module Review
B. Module Examination
   1. Trainees must score 70% or higher to receive recognition from NCCER.
   2. Record the testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.
C. Performance Testing
   1. Trainees must perform each task to the satisfaction of the instructor to receive recognition from NCCER. If applicable, proficiency noted during laboratory exercises can be used to satisfy the Performance Testing requirements.
   2. Record the testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.
Session II. Reading Plans and Specifications; Ceiling Leveling Equipment; Ceiling Panels and Tiles
   A. Reading Plans and Specifications
   B. Ceiling Leveling Equipment
   C. Laboratory
      Have trainees use a laser to establish a level line at ceiling level such as is required when installing the wall angle for a suspended ceiling. This laboratory corresponds to Performance Task 1.
   D. Ceiling Panels and Tiles

Session III. Exposed Grid Systems
   A. Grid System Components
   B. Installation Procedures

Session IV. Suspended Drywall Ceiling Systems
   A. Drywall Furring Ceiling Systems
   B. Drywall Grid Systems
   C. Laboratory
      Have trainees lay out and install a selected suspended ceiling system according to a specific plan. This laboratory corresponds to Performance Task 2.

Session V. Specialty Systems I
   A. Metal Pan Systems
   B. Direct-Hung Concealed Grid Systems
   C. Integrated Ceiling Systems

Session VI. Specialty Systems II; Seismic Considerations
   A. Luminous Ceiling Systems
   B. Other Specialty Ceiling Systems
   C. Seismic Considerations

Session VII. Laying Out and Estimating Materials; Cleaning Ceilings; Installation Best Practices
   A. Laying Out and Estimating Materials
   B. Laboratory
      Have trainees draw a ceiling plan/sketch for a room, and then use it to estimate the quantities of materials needed to install an exposed grid ceiling system in a room. This laboratory corresponds to Performance Task 3.
   C. Ceiling Cleaning
   D. Installation Best Practices

Session VIII. Review and Testing
   A. Module Review
   B. Module Examination
      1. Trainees must score 70% or higher to receive recognition from NCCER.
      2. Record the testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.
   C. Performance Testing
      1. Trainees must perform each task to the satisfaction of the instructor to receive recognition from NCCER. If applicable, proficiency noted during laboratory exercises can be used to satisfy the Performance Testing requirements.
      2. Record the testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.
MODULE OVERVIEW

This module provides information about interior finish products, including some of the most widely used wall and ceiling systems. General installation procedures are covered, as are several unique finish products.

PREREQUISITES

Prior to training with this module, it is recommended that the trainee shall have successfully completed Core Curriculum; Drywall Level One; and Drywall Level Two, Modules 45201-09 through 45203-09.

OBJECTIVES

Upon completion of this module, the trainee will be able to do the following:

1. Describe the composition and use of common types of specialty interior products.
2. Identify the different installation and attachment methods used with specialty interior products.

PERFORMANCE TASKS

Under the supervision of the instructor, the trainee should be able to do the following:

1. Identify various types of trim, and state their applications.
2. Measure, cut, and install trim.

MATERIALS AND EQUIPMENT LIST

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Adhesives
Impaling clips
Zee-clips
Wall bar/wall clips
VELCRO® fasteners
Nails and screws
Battens
Fabric-covered fiberglass panels
Fabric wall or ceiling samples
Examples of GFRG products
Pieces of wood veneer
Wood slats
Trim of various types, including reveal trim
Samples of wood wall and ceiling systems

Components, fasteners, and tools required for installing a ceiling trim system, to include:
Reflected ceiling plan or manufacturer’s shop drawings
Binder clips
Installed ceiling grid
Splice connectors
Square
25’ tape
Aviation snips
Utility knife
Hammer
Screwdrivers
Wire hangers and/or straps
Laser level
Chalkline
Tectum™ products
Linear ceiling components
Dome components
Scrap pieces of metal column covers
Copies of the Quick Quiz*
Module Examinations**
Performance Profile Sheets**

* Located in the back of this module.
**Located in the Test Booklet.
SAFETY CONSIDERATIONS

Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly. This module will require trainees to measure, cut, and install trim.

ADDITIONAL RESOURCES

This module is intended to present thorough resources for task training. The following reference work is suggested for both instructors and motivated trainees interested in further study. This is optional material for continued education rather than for task training.


TEACHING TIME FOR THIS MODULE

An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 15 hours are suggested to cover Interior Specialties. You will need to adjust the time required for hands-on activity and testing based on your class size and resources. Because laboratories often correspond to Performance Tasks, the proficiency of the trainees may be noted during these exercises for Performance Testing purposes.

<table>
<thead>
<tr>
<th>Topic</th>
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<tr>
<td>A. Introduction</td>
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<td>B. Vinyl- and Fabric-Covered Fiberglass Panels</td>
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<td>C. Fabric Walls and Ceilings</td>
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<td>Session II. Glass Fiber Reinforced Gypsum; Wood Wall and Ceiling Systems</td>
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<tr>
<td>A. Glass Fiber Reinforced Gypsum</td>
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<td>B. Wood Wall and Ceiling Systems</td>
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<tr>
<td>Session III. Ceiling Trim Systems I</td>
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<tr>
<td>A. Trim Types and Applications</td>
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<tr>
<td>B. Laboratory</td>
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<tr>
<td>Have trainees identify various types of trim, and state their applications. This laboratory corresponds to Performance Task 1.</td>
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<tr>
<td>Session IV. Ceiling Trim Systems II</td>
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<tr>
<td>A. Installation Guidelines</td>
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<td>B. Installation of a Ceiling Trim System</td>
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<td>C. Laboratory</td>
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<tr>
<td>Trainees measure, cut, and install trim. This laboratory corresponds to Performance Task 2.</td>
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<tr>
<td>Session V. Tectum™ Panels; Other Finish Systems; Safety</td>
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<tr>
<td>A. Tectum™ Panels</td>
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<td>B. Other Finish Systems</td>
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<td>C. Safety</td>
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</table>
Session VI. Review and Testing

A. Module Review

B. Module Examination
   1. Trainees must score 70% or higher to receive recognition from NCCER.
   2. Record the testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

C. Performance Testing
   1. Trainees must perform each task to the satisfaction of the instructor to receive recognition from NCCER. If applicable, proficiency noted during laboratory exercises can be used to satisfy the Performance Testing requirements.
   2. Record the testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.
MODULE OVERVIEW
This module covers the main functions of exterior cladding and the different types of cladding available. Procedures for exterior cladding installation are also provided.

PREREQUISITES
Prior to training with this module, it is recommended that the trainee shall have successfully completed Core Curriculum; Drywall Level One; and Drywall Level Two, Modules 45201-09 through 45204-09.

OBJECTIVES
Upon completion of this module, the trainee will be able to do the following:
1. Distinguish between extruded and expanded foam insulations.
2. Identify trims used in exterior insulation and finish systems (EIFS) and stucco, and state their uses.
3. Distinguish between traditional and water management EIFS.
4. Distinguish between traditional hard-coat plaster and synthetic finishes.
5. Describe how to install synthetic veneer stone.
6. Describe building features commonly created with glass fiber reinforced concrete (GFRC).

PERFORMANCE TASKS
Under the supervision of the instructor, the trainee should be able to do the following:
1. Install starter track and stick foam to appropriate substrate.
2. Rasp foam; mix base coat; and install mesh and base coat on the foam panel completed in Task 1.
3. Prime and install finish on panel completed in Task 2.

MATERIALS AND EQUIPMENT LIST

- Overhead projector and screen
- Transparencies
- Blank acetate sheets
- Transparency pens
- Whiteboard/chalkboard
- Markers/chalk
- Pencils and scratch paper
- Appropriate personal protective equipment
- Building paper
- Various house wraps
- Nails and screws
- Control joints
- Weep screeds
- Starter strips
- Flashing
- Samples of traditional and acrylic stucco
- Example of a section of stucco layers
- Example of a rabbet, or stucco lock
- Synthetic and real stones
- Adhesives, hardware, and grout for fastening synthetic stone
- Expanded polystyrene (EPS) samples
- Extruded polystyrene (XPS) samples
- Example of a section of a multilayer EIFS
- Components for installing a multilayer EIFS:
  - Starter track
  - Substrate
  - Foam
  - Base coat
  - Mesh
  - Primer
  - Finish
  - Backwrapping
  - Flashing
  - Sealant

continued
SAFETY CONSIDERATIONS

Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly. This module will require trainees to perform selected EIFS installation procedures. In addition, trainees may be required to tour a site where synthetic stone is being installed. Ensure that they are briefed on site safety procedures.

ADDITIONAL RESOURCES

This module is intended to present thorough resources for task training. The following references are suggested for both instructors and motivated trainees interested in further study. These are optional resources for continued education rather than for task training.

- http://www.cement.org
- http://www.culturedstone.com (1-800-255-1727)
- http://www.eima.com
- http://www.eldoradostone.com
- http://www.jameshardiecommercial.com

TEACHING TIME FOR THIS MODULE

An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 20 hours are suggested to cover Exterior Cladding. You will need to adjust the time required for hands-on activity and testing based on your class size and resources. Because laboratories often correspond to Performance Tasks, the proficiency of the trainees may be noted during these exercises for Performance Testing purposes.

<table>
<thead>
<tr>
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<tbody>
<tr>
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<tr>
<td>Session II. Trim; Cladding; Stucco</td>
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<td>A. Trim</td>
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<td>B. Cladding</td>
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<td>C. Stucco</td>
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<tr>
<td>Session III. Synthetic Stone</td>
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Sessions IV-VI. Exterior Insulation and Finish Systems (EIFS)


B. Laboratory
Have trainees install a starter track and stick foam to an appropriate substrate.
This laboratory corresponds to Performance Task 1.

C. Laboratory
Have trainees rasp foam, mix base coat, and install mesh and base coat on
the foam panel completed in Task 1. This laboratory corresponds to
Performance Task 2.

D. Laboratory
Have trainees prime and install finish on the panel completed in Task 2.
This laboratory corresponds to Performance Task 3.

Session VII. Panelized Cladding; Glass Fiber Reinforced Concrete (GFRC)

A. Panelized Cladding

B. Glass Fiber Reinforced Concrete (GFRC)

Session VIII. Review and Testing

A. Module Review

B. Module Examination
1. Trainees must score 70% or higher to receive recognition from NCCER.
2. Record the testing results on Craft Training Report Form 200, and submit
   the results to the Training Program Sponsor.

C. Performance Testing
1. Trainees must perform each task to the satisfaction of the instructor to receive
   recognition from NCCER. If applicable, proficiency noted during laboratory
   exercises can be used to satisfy the Performance Testing requirements.
2. Record the testing results on Craft Training Report Form 200, and submit
   the results to the Training Program Sponsor.
MODULE OVERVIEW
This module provides information about paints, painting, and texturing, as well as application techniques that can give interiors a rich, warm appearance.

PREREQUISITES
Prior to training with this module, it is recommended that the trainee shall have successfully completed Core Curriculum; Drywall Level One; and Drywall Level Two, Modules 45201-09 through 45205-09.

OBJECTIVES
Upon completion of this module, the trainee will be able to do the following:
1. Identify various material types for interior finishes and state their applications.
2. Identify and select the appropriate tools used to apply specific interior finishes.
3. Identify various finish and texture samples.

PERFORMANCE TASKS
This is a knowledge-based module; there are no performance tasks.

MATERIALS AND EQUIPMENT LIST
Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Examples of surfaces painted with textured paint
Texturing materials added to paint, such as:
   Sand
   Vermiculite
   Polystyrene
Paint and compound mixers
Paint sprayers
Spray texturing machines
Hand tools for painting:
   Stipple brush
   Tandem texture brush
   Foam texture roller
Oil-based and water-based primers
Examples of the following spray-on textures:
   Popcorn
   Orange peel
   Knock-down
Examples of powder and ready-mixed texturing compounds
Examples of textured finishes that can be achieved with texturing compound:
   Bold shadowing
   Medium stipple
   Light stipple
   Swirl finish
   Crow’s foot
Examples of faux finishes
Supplies needed to create a marble faux finish:
   Several shades of latex paint
   Clear polyurethane varnish or wax
   Paint roller/holder and pan
   Natural sea sponge
   Pointed artist’s brush
Examples of Venetian plaster faux finish
Supplies needed to create a Venetian plaster faux finish:
   Venetian plaster or Venetian plaster paint
   Venetian plaster or paint top coat
   Steel trowel or blade with rounded corners
   Clean cloth, power buffer, or power sander with 600-grit sandpaper
Module Examinations*

*Located in the Test Booklet.
ADDITIONAL RESOURCES
This module is intended to present thorough resources for task training. The following reference works are suggested for both instructors and motivated trainees interested in further study. These are optional materials for continued education rather than for task training.


TEACHING TIME FOR THIS MODULE
An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2 ½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 15 hours are suggested to cover Specialty Finishes. You will need to adjust the time required for hands-on activity and testing based on your class size and resources.

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<td>A. Paint and Compound Mixers</td>
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<td>B. Paint Sprayers</td>
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<td>C. Spray Texturing Machines</td>
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<td>D. Hand Tools</td>
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<td>Session III. Finish Coat Application</td>
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<td>C. Spray Painting</td>
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<td>A. Texturing Compound</td>
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<td>A. Faux Finishes</td>
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