

Construction Painting

The Construction Painting Apprenticeship at TOCC is based on a curriculum developed by the National Center for Construction Education & Research (NCCER), whose website is www.nccer.org. The following tables show the content of classroom instruction and the number of hours of instruction for each module. Following

the tables are descriptions of the modules. Classroom instruction is complemented by on-the-job training, which is customized for each student. Construction painting is a three-year program, requiring 6,000 hours of time invested by the student.

FIRST SEMESTER (Core)	Hours	SECOND SEMESTER	Hours
Basic Safety	15	Careers in Painting	5
Introduction to Construction Math	15	Safety	10
Introduction to Hand Tools	10	Ladders, scaffold, lifts, fall protection	10
Introduction to Power Tools	5	Identifying surface/substance materials & conditions	5
Introduction to Blueprints	7.5	Protecting Adjacent Surfaces	5
Basic Rigging	20	Basic Surface Preparation	15
Basic Communication Skills	5	Sealants & Repair/Fillers	5
Basic Employability Skills	15	Introduction to Paints & Coating	10
		Brushing, Rolling Paints and Coating	15
Total Semester Hours	92.5	Total Semester Hours	80

First Year (172.5 hours)

Second Year (122.5 hours)

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
Chemical Cleaning and Stripping	7.5	Wood Finishing	22.5
Low-Pressure Water Cleaning	7.5	Coating Two	10
Painting Failures and Remedies	7.5	Spray Painting	32.5
Job Planning and Completion	10		
Abrasive Blasting	7.5		
Drywall Finishing and patching	2.5		
Stains	7.5		
Clear Finishes	7.5		
Total Semester Hours	57.5	Total Semester Hours	65

Third Year (152.5 hours)

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
<i>Painting Failures & Remedies Two</i>	7.5	<i>Wallcoverings</i>	40
<i>Job Supervision, Planning and Control</i>	15	<i>Graphics</i>	12.5
<i>Coating Three</i>	15	<i>Texturing</i>	10
<i>Color and Tinting</i>	10	<i>Spraying with Special Devices</i>	20
<i>Decorative Finishes</i>	22.5		
Total Semester Hours	70	Total Semester Hour	82.5

Total Apprenticeship-Related Training (Classroom Instruction) = 447.5 hours

Construction Painting Modules

First Year (172.5 hours)

First Semester (Core = 92.5 hours)

Basic Safety (15 hours) Explains the safety obligations of workers, supervisors, and managers to ensure a safe workplace. Discusses the causes and results of accidents and the dangers of rationalizing risk. Reviews the role of company policies and OSHA regulations in maintaining a safe workplace. Introduces common job-site hazards and protections such as lockout/tagout, personal protective equipment (PPE) and HazCom.

Introduction to Construction Math (15 hours) Reviews basic mathematical functions such as adding, subtracting, dividing, and multiplying whole numbers, fractions, and decimals. Also reviews basic geometry as applied to common shapes and forms.

Introduction to Hand Tools (10 hours) Introduces trainees to hand tools that are widely used in the construction industry, such as hammers, saws, levels, pullers, vises, and clamps. Also safety and maintenance issues related to hand tools.

Introduction to Power Tools (5 hours) Provides detailed descriptions of commonly used power tools such as drills, saws, grinders, and sanders.

Introduction to Blueprints (7.5 hours) Familiarizes trainees with basic blueprint terms, components, and symbols. Explains the different types of blueprint drawings (civil, architectural, structural, mechanical, plumbing/piping, and electrical).

Basic Rigging (20 hours) Explains how ropes, chains, hoists, loaders, and cranes are used to move material and equipment from one location to another on a jobsite. Also hand signals.

Basic Communication Skills (5 hours) Provides trainees with techniques for communicating effectively with co-workers and supervisors.

Includes practical examples that emphasize importance of verbal and written information and instructions on the job.

Basic Employability Skills (15 hours) Identifies the roles of individuals and companies in the construction industry. Introduces trainees to critical thinking and problem solving skills and computer systems and their industry applications.

Second Semester (80 hours)

Careers in the Painting Trade (5 hours) Presents a brief history of the painting trade. Career opportunities, from apprenticeship/helper to managerial/business-related work, are covered. Describes the characteristics of the successful tradesperson, including productivity, appearance, personal hygiene, and dependability.

Safety (10 hours) Provides a comprehensive overview of the safety and precautions for working on construction sites with a focus on the painting trade. Covers methods of rigging and care of ladders, scaffolds, swing devices, and other equipment.

Ladders, Scaffolds, Lifts, and Fall Protection (10 hours) Covers methods of erecting, using and maintaining ladders, scaffolds, and lifts. Fall protection equipment and safety practices used when working on ladders, scaffolds, and lifts are also discussed.

Identifying Surface/Substrate Materials and Conditions (5 hours) Covers how to identify types of surfaces used in construction including wood, metal, masonry/concrete, plaster/drywall and synthetic substrates. Also discusses how to identify new, aged, or previously coated surface conditions of substrates and coatings.

Protecting Adjacent Surfaces (5 hours) Covers the tools, materials, and methods used for protecting adjacent surfaces and areas prior to surface preparation, paint spraying, etc.

Basic Surface Preparation (15 hours) Covers the tools, materials, and methods used for cleaning, repairing, and penetrating surfaces/substrates in preparation for coating. Basic methods used for surface preparation of wood, metal, plaster/drywall, cementitious, and synthetic surfaces/substrates are described.

Sealants and Repair/Fillers (5 hours) Describes the characteristics of commonly used types of sealants and fillers. Covers guidelines for selecting sealants/fillers and the tools and methods used for applying them on commonly used construction substrates.

Introduction to Paints and Coatings (10 hours) Describes the basic ingredients and film-forming processes common to all paints and coatings. Covers paint systems and functional categories of paints and coatings. Emphasizes water-based alkyd paints and coatings.

Brushing and Rolling Paints and Coatings (15 hours) Covers the types and selection of brushes, rollers, pads, mitts, and related accessories used for applying paints and coatings. Covers techniques used for brushing and rolling paints and coatings on interior and exterior surfaces. Also describes maintenance and storage methods for brushes and rollers.

Second Year (122.5 hours)

First Semester (57.5 hours)

Chemical Cleaning and Stripping (7.5 hours) Describes various kinds of chemical cleaners and strippers, and how they are used to clean and/or remove unwanted material from substrates.

Low-Pressure Water Cleaning (7.5 hours) Covers the design and function of commonly used types of low-pressure washing equipment, including procedures for the safe operation and maintenance of typical equipment.

Painting Failures and Remedies (7.5 hours) Covers failures of paints/coatings on exterior and interior substrates, causes of these failures, and their remedies. Focuses special attention on the

nature of the substrates, application procedures, and surface preparation.

Job Planning and Completion (10 hours) Covers the process for estimating a job to submit a bid. Also covers the processes for planning and accomplishing a job from start to finish with emphasis placed on the importance and use of drawings, specifications, schedules, and other instructions.

Abrasive Blasting (7.5 hours) Covers the basic design and function of abrasive blasting equipment, including general procedures for its use, related industry standards, and safety and health considerations.

Drywall Finishing and Patching (25 hours) Covers the materials and procedures used for drywall finishing and patching. Emphasis is on the techniques for finishing and patching drywall, including the use and care of tools, equipment and supplies, and safety.

Stains (7.5 hours) Describes the different classes and/or kinds of stains, including their composition, selection for use, and application considerations.

Clear Finishes (7.5 hours) Covers the composition, uses, and application of various clear finishes, including varnishes, lacquers, shellacs, and urethanes.

Second Semester (65 hours)

Wood Finishing (22.5 hours) Covers basic wood science and technology subjects related to wood and wood products. Provides detailed procedures and techniques for wood surface preparation and the application of clear finishes to various kinds of wood.

Coatings Two (10 hours) Describes unique properties, safety and health considerations, surface preparation, application, and testing and inspection of selected high-performance coatings.

Spray Painting (Conventional, Airless and HVLP) (32.5 hours) Covers the design and function of commonly used types of conventional, airless, and HVLP spraying equipment, including procedures for the safe operation and maintenance of typical equipment.

Third Year (152.5 hours)

First Semester (70 hours)

Painting Failures and Remedies Two (7.5 hours)
Covers how to recognize and remedy paint/coating failures caused by improper preparation and application of coatings, as well as coating discoloration.

Job Supervision, Planning, and Control (15 hours)
Covers skills and leadership traits associated with the successful supervisor, including how to supervise and motivate employees, how to estimate a job, use of contract documents, and methods for controlling materials and tools/equipment.

Coatings Three (15 hours) Describes unique properties, safety and health considerations, surface preparation, application, and testing, and inspection of high-performance coatings used primarily to protect substrates for commercial or light industrial applications.

Color and Tinting (10 hours) Covers the theory and definition of color; procedures for mixing, tinting, and matching colors; use of the color wheel; and the Munsell, Federal Standard 595B, and other color systems.

Decorative (Faux) Finishes (22.5 hours) Describes the techniques for creating glazing, antiquing, stippling, mottling, gilding, marbling, and graining decorative finishes.

Second Semester (82.5 hours)

Wallcovering (40 hours) Covers the wallcovering process from start to finish. Included are equipment and materials, estimating methods, surface preparation, adhesives and installation, and failures and remedies.

Graphics (12.5 hours) Covers types of graphics and their uses, methods of transferring graphic patterns to a surface, building code regulations and other factors in the use of graphics.

Texturing (10 hours) Covers the characteristics of various texturing materials, surface preparation procedures, and techniques for producing different patterns.

Spraying with Special Devices (20 hours) Covers the design and function of texture, cold roof coating, electrostatic, and plural component spraying equipment. Includes procedures for the safe operation and maintenance of typical equipment.