

## COURSE SYLLABUS

<b>LAST REVIEW</b>	Fall 2022
<b>COURSE TITLE</b>	Painting (Level 1)
<b>COURSE NUMBER</b>	CONS 0140
<b>DIVISION</b>	Career and Technical Education
<b>DEPARTMENT</b>	CONS
<b>CIP CODE</b>	46.0201
<b>CREDIT HOURS</b>	3
<b>CONTACT HOURS/WEEK</b>	Class: 1      Lab: 4      Clinical:
<b>PREREQUISITES</b>	KBOR approved Core Curriculum. OSHA 10, Math Level 3 Recommended

### COURSE DESCRIPTION

This is the basic course in Painting. It is aligned with NCCER (selected modules) and the Kansas Board of Regents. The course topics include: Environmental sustainability, Careers in the Painting Trade, Safety, Ladders, Scaffolds, Lifts, and Fall Protection, Identifying Surface/Substrate Materials and Conditions, Protecting Adjacent Surfaces, Basic Surface Preparation, Sealants and Repair/Fillers, Introduction to Paints and Coatings and Brushing and Rolling Paints and Coatings.

### PROGRAM LEARNING OUTCOMES

1. Demonstrate appropriate safety practices and procedures.
2. Demonstrate proper methods for completion of interior finishes.
3. Demonstrate proper methods for mechanical installation

### TEXTBOOKS

<http://kckccbookstore.com/>

### METHODS OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

### COURSE OUTLINE

- I. Careers in the Painting Trade
  - A. History of the painting trade.
  - B. Career opportunities.
  - C. Apprentice training program.
  - D. Characteristics of professionals.
- II. Safety
  - A. The Occupational Safety and Health Administration (OSHA).
  - B. Hazard(s) and safety rules relating to:

1. Personal hygiene and work clothing
  2. Personal protective and life saving equipment
  3. Respiratory hazards
  4. Fall hazards
  5. Hazardous chemicals and materials
  6. Lead hazards
  7. Asbestos hazards
  8. Confined space hazards
  9. Painting tool and equipment hazards
  10. Hot and cold weather hazards
  11. Electrical hazards
- C. Hazardous Communication (HazCom) including:
1. The HazCom program
  2. Material Safety Data Sheets (MSDSs)
  3. Hazardous Materials Identification System (HMIS)
- III. Ladders, Scaffolds, Lifts, and Fall Protection
- A. Ladders, including:
1. Stepladders
  2. Single ladders
  3. Extension ladders
  4. Trestle and extension trestle ladders
- B. Scaffolds, including:
1. Built-up scaffolds
  2. Swing scaffolds
  3. Beam-suspended scaffolds
- C. Aerial work platforms and scissor lifts.
- D. Fall protection equipment, including:
1. Body harnesses and belts
  2. Lanyards
  3. Deceleration devices
  4. Lifelines
  5. Anchoring devices and equipment connectors
- IV. Identifying Surface/Substrate Materials and Conditions
- A. Substrates used in construction:
1. Wood
  2. Masonry, concrete, and stucco
  3. Plaster/drywall
  4. Synthetic
  5. Metal
- B. Surface condition of substrates and coatings:
1. New
  2. Aged
  3. Previously coated
- C. Surface preparation methods.
- V. Protecting Adjacent Surfaces
- A. Tools and materials required for protecting surfaces:
1. Tape dispensers

2. Types of tape
3. Types of masking material, such as paper, film, light-duty plastic sheeting, and liquid or gel
4. masking
5. Paint shields
6. Covering materials, such as dropcloths, netting, and heavy-duty plastic sheeting

B. Applying interior and exterior masking.

C. Proper cleanup.

## VI. Basic Surface Preparation

A. Tools and materials:

1. Cleaning agents
2. Surface conditioning agents
3. Repair agents
4. Hand tools
5. Power tools

B. Preparation methods:

1. Washing and cleaning
2. Hand tool cleaning
3. Power tool cleaning
4. Etching and neutralization
5. Vacuuming
6. Checking for moisture in concrete, stucco, masonry, wood, or plaster substrates
7. Repair/replacement of substrates

C. Preparation procedures for surfaces/substrates:

1. Wood
2. Concrete and masonry
3. Plaster and drywall
4. Metal
5. Synthetic

## VII. Sealants and Repair/Fillers

A. Sealants and fillers.

B. Properties for product selection.

C. Sealant application.

D. Products for the following joints:

1. Inside corner joint.
2. Outside corner.
3. Expansion joint.
4. Long, wide, deep crevice.

E. Post-primer sealant.

## VIII. Introduction to Paints and Coatings

A. Pigments, resins, solvents, and additives.

B. Water-based and oil-based paints.

C. Coating(s) recommended for use with various substrates.

D. Describe the properties and/or functions of paints or coatings.

1. Properties:
  - a. Alkyd

- b. Latex
    - c. Epoxy
    - d. Urethane (polyurethane)
  - 2. Functions:
    - a. Primers/undercoats
    - b. Tie coats
    - c. Finish coat
    - d. Sealers
    - e. Shellacs, varnishes, and lacquers
    - f. Stains
    - g. Special purpose coatings
  - E. Methods used for the cleanup.
- IX. Brushing and Rolling Paints and Coatings
  - A. Types of paint brushes.
    - 1. Wall brushes
    - 2. Varnish brushes
    - 3. Sash and trim brushes
    - 4. Stain brushes
    - 5. Special purpose brushes
    - 6. Decorative brushes
  - B. Rollers and roller covers:
    - 1. Dip rollers
    - 2. Self-feeding rollers
    - 3. Special purpose rollers
  - C. Mixing paint.
  - D. Apply paint.
  - E. Clean and store paint brushes and rollers.
- X. Environmental Sustainability
  - A. Environmentally safe waste disposal.
  - B. Life cycle analysis.
  - C. Recycled material.
  - D. Low VOC emissions.
  - E. New “green” materials.
  - F. New “green” methods and practices.
  - G. “Low impact” designs.

## **COURSE LEARNING OUTCOMES AND COMPETENCIES**

Upon successful completion of this course, the student will:

- A. Describe and identify the careers in the painting trade, history, personal qualities of painters.
  - 1. Briefly describe the history of the painting trade, including how the Clean Air and Lead Abatement laws and regulations have changed the paint industry.
  - 2. Identify career opportunities available for people in the painting trade.
  - 3. Explain the purpose and objectives of an apprentice training program.
  - 4. Describe the desired characteristics of professionals in the painting trade.
- B. Describe and identify safety issues, PPE and hazards.

5. Explain the obligations and responsibilities of workers, employers, and the Occupational Safety and Health Administration (OSHA) with regard to safety.
  6. Describe the nature of the hazard(s) and safety rules and guidelines for job site safety relating to:
    - Personal hygiene and work clothing
    - Personal protective and lifesaving equipment
    - Respiratory hazards
    - Fall hazards
    - Hazardous chemicals and materials
    - Lead hazards
    - Asbestos hazards
    - Confined space hazards
    - Painting tool and equipment hazards
    - Hot and cold weather hazards
    - Electrical hazards
  7. Explain the purpose of Hazardous Communication (HazCom) programs including:
    - The elements or parts required of a HazCom program
    - The use of Material Safety Data Sheets (MSDSs)
    - The use of Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) codes
- C. Describe and identify the types and uses of ladders, scaffolds, lifts, and fall protection.
8. Recognize, erect, and safely use the different kinds of ladders, including:
    - Stepladders
    - Single ladders
    - Extension ladders
    - Trestle and extension trestle ladders
  9. Recognize, erect, and safely use the different kinds of scaffolds, including:
    - Built-up scaffolds
    - Swing scaffolds
    - Beam-suspended scaffolds
  10. Recognize and safely use aerial work platforms and scissor lifts.
  11. Recognize and safely use fall arresting and other fall protection equipment, including:
    - Body harnesses and belts
    - Lanyards
    - Deceleration devices
    - Lifelines
    - Anchoring devices and equipment connectors
- D. Describe and identify types of surface/substrate materials and conditions.
12. Identify various substrates used in construction:
    - Wood
    - Masonry, concrete, and stucco
    - Plaster/drywall
    - Synthetic
    - Metal
  13. Identify the surface condition of substrates and coatings:
    - New

Aged

Previously coated

14. Be aware of the basic surface preparation methods and coatings required for various substrates.
- E. Describe and identify the proper ways of protecting adjacent surfaces.
15. Describe the tools and materials required for protecting surfaces:
    - Tape dispensers
    - Types of tape
    - Types of masking material, such as paper, film, light-duty plastic sheeting, and liquid or gel masking
    - Paint shields
    - Covering materials, such as dropcloths, netting, and heavy-duty plastic sheeting
  16. Describe the methods of applying interior and exterior masking and coverings to various surfaces.
  17. Understand the importance of proper cleanup.
- F. Describe and identify basic surface preparation methods for different surfaces, and tools.
18. Describe preparation tools and materials:
    - Cleaning agents
    - Surface conditioning agents
    - Repair agents
    - Hand tools
    - Power tools
  19. Describe or demonstrate preparation methods:
    - Washing and cleaning
    - Hand tool cleaning
    - Power tool cleaning
    - Etching and neutralization
    - Vacuuming
    - Checking for moisture in concrete, stucco, masonry, wood, or plaster substrates
    - Repair/replacement of substrates
  20. Describe or demonstrate general preparation procedures for various types of surfaces/substrates:
    - Wood
    - Concrete and masonry
    - Plaster and drywall
    - Metal
    - Synthetic
- G. Describe and identify the types and uses of sealants and repair/fillers.
21. Describe the composition and function of various sealants and fillers.
  22. Select an appropriate product for a given application and surface, stating the important properties for product selection.
  23. Describe tools and additional materials required for sealant application.
  24. Apply and smooth suitable products to the following joints using appropriate tools:
    - Fixed inside corner joint between two types of substrate
    - Fixed outside corner joint between two pieces of the same substrate
    - Expansion joint with 25%-50% expected movement

Long, wide, deep crevice in substrate

25. Based on application conditions, judge whether a post-primer sealant or filler will adhere properly after curing.

H. Describe and identify the types, functions and clean-up of paints and coatings.

26. Explain the function(s) of pigments, resins, solvents, and additives.

27. Describe the basic differences between water-based and oil-based paints and coatings, including the film forming mechanisms, advantages, and disadvantages of both types.

28. Use manufacturer's literature and/or product labels to identify coating(s) recommended for use with various substrates (wood, metal, etc.) and exposure conditions. Also identify the recommended method of surface preparation for each coating.

29. Describe the properties and/or functions of paints or coatings.

Properties:

Alkyd

Latex

Epoxy

Urethane (polyurethane)

Functions:

Primers/undercoats

Tie coats

Finish coat

Sealers

Shellacs, varnishes, and lacquers

Stains

Special purpose coatings

30. Demonstrate and/or explain the general methods used for the cleanup and disposal of water-based and oil-based paints.

I. Describe and identify the types of brushes/rollers, application and clean-up.

31. Recognize the various types of paint brushes and select the proper paint brush for the application.

Wall brushes

Varnish brushes

Sash and trim brushes

Stain brushes

Special purpose brushes

Decorative brushes

32. Recognize the different kinds of rollers and roller covers and select the proper roller and cover for the application.

Dip rollers

Self-feeding rollers

Special purpose rollers

33. Demonstrate how to properly mix paint.

34. Demonstrate how to properly apply paint to surfaces using the brush and the roller.

35. Demonstrate how to clean and store paint brushes and rollers.

J. Identify and describe sound environmental practices for painters, including waste disposal, life cycle analysis, green practices and low impact.

36. Describe waste disposal methods for this industry according to EPA and industry guidelines.
37. Describe the process of life cycle analysis in this industry based on industry guidelines.
38. Identify recycled materials by label and industry practice.
39. Define “low emission” and give two examples.
40. Identify new “green” materials now being introduced or currently used in this industry.
41. Describe new “green” practices and methods being instituted or currently employed within this industry.
42. Identify and explain the term “low Impact” as it relates to the environment.

### **ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES**

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor’s course information document.

### **COLLEGE POLICIES AND PROCEDURES**

*Student Handbook*

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

*College Catalog*

<https://www.kckcc.edu/academics/catalog/index.html>

*College Policies and Statements*

<https://www.kckcc.edu/about/policies-statements/index.html>

*Accessibility and Accommodations*

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.