

## COURSE SYLLABUS

<b>LAST REVIEW</b>	Fall 2022
<b>COURSE TITLE</b>	Insulating
<b>COURSE NUMBER</b>	CONS 0123
<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 course in Insulating. It is in alignment with NCCER (selected modules) and the Kansas Board of Regents. The course topics include: Environmental sustainability, Orientation, Trade Relations, Tools of the Trade, Material Handling, Storage, and Distribution, and installing Mineral Wool Insulation.

### PROGRAM LEARNING OUTCOMES

1. Demonstrate appropriate safety practices and procedures.
2. Demonstrate proper methods for completing exterior structures and surfaces.
3. Demonstrate different methods of preparing surfaces for painting.

### TEXTBOOKS

<http://kckccbbookstore.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. Orientation
  - A. Types of insulation.
  - B. History of insulation.
  - C. Tool requirements.
  - D. Systems that require insulation.
  - E. Required insulation.
  - F. Estimating.
  - G. Insulation materials.
  - H. Commercial and industrial plants.
  - I. Subcontractors and general contractors.

- J. Owners.
- K. Energy conservation.
- II. Trade Relations
  - A. Types of contracts.
  - B. Construction teams.
  - C. Insulation contractors.
  - D. Communications.
  - E. Application difficulties.
  - F. First day of assignment.
- III. Tools of the Trade
  - A. Tools required for insulation.
  - B. Specific applications.
  - C. Care of personal hand tools.
  - D. Usage of personal hand tools.
  - E. Safety rules.
  - F. Personal tool storage.
- IV. Material Handling, Storage, and Distribution
  - A. Receiving materials.
  - B. Storing materials.
  - C. Separating materials.
  - D. Materials stored inside.
  - E. Excess materials.
  - F. Boxes of materials.
- V. Installing Mineral Wool Insulation
  - A. Tools for installing mineral wool insulation.
  - B. Forms of mineral wool.
  - C. Measuring requirements.
  - D. Cutting and scoring.
  - E. Attachments.
  - F. Installation methods.
  - G. Sealing requirements.
  - H. Welded pins, stick pins, and clips.
  - I. Pin welding equipment.
- VI. 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. Identify and describe the types of insulation, tools, and estimating.
  1. Identify, describe and explain what insulation is and the basic uses of insulation.
  2. Identify, describe and understand the history of insulation.

3. Identify, describe and explain some tool requirements and their uses.
  4. Identify, describe and explain some systems that require insulation.
  5. Identify, describe and explain who designs the required insulation for different systems.
  6. Identify, describe and explain what an estimate is used for in a project.
  7. Identify, describe some of the types of insulation materials used.
  8. Identify, describe and explain the difference between commercial and industrial plants.
  9. Identify, describe and explain who subcontractors and general contractors are.
  10. Identify, describe and explain who owners are.
  11. Identify, describe and explain what energy conservation is.
- B. Identify and describe trade relations, contractors, and teams.
12. Identify, describe and list the various types of contracts.
  13. Identify, describe and explain how a construction team works together to complete a project.
  14. Identify, describe and explain the work an insulation contractor performs.
  15. Identify, describe and explain what happens when poor communications between trades takes place.
  16. Identify some of the specific areas that would make insulation application difficult.
  17. Identify what is important upon the first day of assignment on the job site.
- C. Identify and describe the types of tools, application, safety and storage.
18. Identify specific tools required in the insulation trade.
  19. Identify, describe and choose the correct tool for the specific application.
  20. Identify, describe and demonstrate the procedures for the care of personal hand tools.
  21. Identify, describe and demonstrate the proper usage of personal hand tools.
  22. Identify, describe and explain the general safety rules for hand tools.
  23. Identify, describe and explain how and where personal tools should be kept when not in use at the job site.
- D. Identify and describe material handling, storage, and distribution.
24. Identify, describe and explain how to receive materials.
  25. Identify, describe and explain how to store materials outside.
  26. Identify, describe and separate materials for easy usage when needed.
  27. Identify, describe and explain why certain materials should be stored inside.
  28. Identify and describe where excess materials should be placed.
  29. Identify and describe what happens to boxes of materials when not kept dry.
- E. Identify and describe installing mineral wool insulation.
30. Identify and use specific tools for installing mineral wool insulation.
  31. Identify and recognize the various forms of mineral wool.
  32. Identify, describe and understand measuring requirements.
  33. Identify, describe and understand cutting and scoring methods.
  34. Identify, describe and understand the various attachments used.
  35. Identify, describe and understand and perform installation methods.
  36. Identify, describe and understand the sealing requirements.
  37. Identify, describe and understand the characteristics of welded pins, stick pins, and clips.
  38. Identify, describe, use and maintain pin welding equipment.

- F. Identify and describe sound environmental practices for insulators, including waste disposal, life cycle analysis, green practices and low impact.
39. Describe waste disposal methods for this industry according to EPA and industry guidelines.
  40. Describe the process of life cycle analysis in this industry based on industry guidelines.
  41. Identify recycled materials by label and industry practice.
  42. Define “low emission” and give two examples.
  43. Identify new “green” materials now being introduced or currently used in this industry.
  44. Describe new “green” practices and methods being instituted or currently employed within this industry.
  45. 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>.