

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Plumbing (Level 1)
COURSE NUMBER	CONS 0142
DIVISION	Career and Technical Education
DEPARTMENT	CONS
CIP CODE	46.0201
CREDIT HOURS	3
CONTACT HOURS/WEEK	Class: 1 Lab: 4 Clinical:
PREREQUISITES	KBOR approved Core Curriculum. OSHA 10, Math Level 3 Recommended

COURSE DESCRIPTION

This is the basic plumbing course. It is in alignment with NCCER (selected modules) and the Kansas Board of Regents. The course topics include: Environmental sustainability, Introduction to the Plumbing Profession, Plastic Pipe and Fittings, Copper Pipe and Fittings, Fixtures and Faucets, Introduction to Drain - Waste - and Vent (DWV) Systems, and Introduction to Water Distribution Systems.

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. Introduction to the Plumbing Profession
 - A. History of the profession.
 - B. Responsibilities of worker.
 - C. Personal characteristics.
 - D. Stages of progress.
- II. Plastic Pipe and Fittings
 - A. Materials and schedules.

- B. Applications of plastic piping.
 - C. Types of fittings.
 - D. Hangers and supports.
 - E. Techniques for hanging and supporting.
 - F. Measure, cut, and join..
 - G. Handling, storage, and protection.
- III. Copper Pipe and Fittings
- A. Types of materials and schedules used with copper piping.
 - B. Material properties, storage, and handling.
 - C. Types of fittings and valves.
 - D. Techniques used in hanging and supporting.
 - E. Measure, ream, cut, and join.
 - F. Hazards and safety.
- IV. Fixtures and Faucets
- A. Types of materials.
 - B. Types of sinks, lavatories, and faucets.
 - C. Types of bathtubs, bath-shower modules, shower stalls, and shower baths.
 - D. Types of toilets, urinals, and bidets.
 - E. Types of drinking fountains and water coolers.
 - F. Types of garbage disposals and domestic dishwashers.
- V . Introduction to Drain, Waste, and Vent (DWV) Systems
- A. How waste moves.
 - B. Major components of a drainage system.
 - C. Types of traps.
 - D. Types of drain, waste, and vent (DWV) fittings.
 - E. Code and health issues.
- VI. Introduction to Water Distribution Systems
- A. Municipal, residential, and private water systems.
 - B. Components of a water distribution system.
 - C. Relationships between components.
- VII. 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 qualities of a plumber and career progression.
 1. Identify and describe the history of the plumbing profession.
 2. Identify the responsibilities of a person working in the construction industry.
 3. Identify and state the personal characteristics of a professional.
 4. Identify the stages of progress within the plumbing profession and its positive impact on society.

- B. Identify and describe the types of plastic pipe and fittings, hazards, and storage.
 - 5. Identify types of materials and schedules of plastic piping.
 - 6. Identify proper and improper applications of plastic piping.
 - 7. Identify types of fittings and valves used with plastic piping.
 - 8. Identify and determine the kinds of hangers and supports needed for plastic piping.
 - 9. Identify the various techniques used in hanging and supporting plastic piping.
 - 10. Identify and properly measure, cut, and join plastic piping.
 - 11. Identify and explain proper procedures for the handling, storage, and protection of plastic pipes.

- C. Identify and describe the types of copper pipe and fittings steel tubing, hazards, and storage.
 - 12. Identify the types of materials and schedules used with copper piping.
 - 13. Identify the material properties, storage, and handling requirements of copper piping.
 - 14. Identify the types of fittings and valves used with copper piping.
 - 15. Identify the techniques used in hanging and supporting copper piping.
 - 16. Identify and properly measure, ream, cut, and join copper piping.
 - 17. Identify the hazards and safety precautions associated with copper piping.

- D. identify and describe the types of materials, fixtures and faucets.
 - 18. Identify the basic types of materials used in the manufacture of plumbing fixtures.
 - 19. Identify and discuss common types of sinks, lavatories, and faucets.
 - 20. identify and discuss common types of bathtubs, bath-shower modules, shower stalls, and shower baths.
 - 21. Identify and discuss common types of toilets, urinals, and bidets.
 - 22. Identify and describe common types of drinking fountains and water coolers.
 - 23. Identify and discuss common types of garbage disposals and domestic dishwashers.

- E. Identify and describe codes, health issues, and types of drain, waste, and vent (DWV) systems.
 - 24. Identify and explain how waste moves from a fixture through the drain system to the environment.
 - 25. Identify the major components of a drainage system and describe their functions.
 - 26. Identify the different types of traps and their components, explain the importance of traps, and identify the ways that traps can lose their seals.
 - 27. Identify the various types of drain, waste, and vent (DWV) fittings and describe their applications.
 - 28. Identify significant code and health issues, violations, and consequences related to DWV systems.

- F. Identify and describe the types and components of water distribution systems.
 - 29. Identify describe the process in which water is distributed in municipal, residential, and private water systems.
 - 30. Identify the major components of a water distribution system, and describe the function of each component.
 - 31. Identify and explain the relationships between components of a water distribution system.

- G. Identify and describe sound environmental practices for plumbers, including waste disposal, life cycle analysis, green practices and low impact.

32. Identify and describe waste disposal methods for this industry according to EPA and industry guidelines.
33. Identify and describe the process of life cycle analysis in this industry based on industry guidelines.
34. Identify recycled materials by label and industry practice.
35. Identify and define "low emission" and give two examples.
36. Identify new "green" materials now being introduced or currently used in this industry.
37. Identify and describe new "green" practices and methods being instituted or currently employed within this industry.
38. 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>.