

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Masonry (Level 1)
COURSE NUMBER	CONS 0107
DIVISION	Career and Technical Education
DEPARTMENT	CONS
CIP CODE	46.0201
CREDIT HOURS	2
CONTACT HOURS/WEEK	Class: 1 Lab: 2 Clinical:
PREREQUISITES	KBOR approved Core Curriculum. OSHA 10, Math Level 3 Recommended

COURSE DESCRIPTION

This is the basic masonry course. It is in alignment with NCCER (selected modules) and the Kansas Board of Regents. The course topics include: Environmental sustainability, Introduction to Masonry, Masonry Tools and Equipment, Measurements, Drawings, and Specifications, Mortar, and Masonry Units and Installation Techniques.

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://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 Masonry
 - A. History of masonry.
 - B. Modern masonry materials.
 - C. Career ladders.
 - D. Skills, attitudes, and abilities.
 - E. Safety precautions:
 1. Safety practices
 2. Fall-protection procedures

- 3. Forklift-safety operations
- F. Bricklaying procedures:
 - 1. Mixing of mortar
 - 2. Laying a mortar bed
 - 3. Laying bricks
- G. Eye protection, respiratory protection, and a safety harness.
- H. Fueling and starting a gasoline-powered tool.
- II. Masonry Tools and Equipment
 - A. Tools used in masonry work.
 - B. Equipment used in masonry work.
 - C. Tool use.
 - D. Equipment use.
 - E. Trade terms.
 - F. Assembling and disassembling scaffolding.
- III. Measurements, Drawings, and Specifications
 - A. Denominate numbers.
 - B. Mason's measure.
 - C. (English) system to metric equivalents.
 - D. Areas, circumferences, and volumes of basic geometric shapes.
 - E. Parts of a set of drawings.
 - F. Types of specifications.
- IV. Mortar
 - A. Primary ingredients in mortar.
 - B. Types of mortar used in masonry work.
 - C. Admixtures.
 - D. Common problems.
 - E. Mortar mixing area.
 - F. Mixing mortar by hand.
 - G. Mixing mortar with a mechanical mixer.
- V. Masonry Units and Installation Techniques
 - A. Types of masonry units.
 - B. Setting up a wall.
 - C. Dry bond.
 - D. Bed joints.
 - E. Types of masonry bonds.
 - F. Cutting brick and block.
 - G. Laying masonry units.
- 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 history of masonry, mixing, safety, PPE and career information.
1. Identify and discuss the history of masonry.
 2. Identify and describe modern masonry materials and methods.
 3. Identify and explain career ladders and advancement possibilities in masonry work.
 4. Identify and describe the skills, attitudes, and abilities needed to work as a mason.
 5. Identify and state the safety precautions that must be practiced at a work site, including the following:
 - a. Safety practices
 - b. Fall-protection procedures
 - c. Forklift-safety operations
 6. Identify and perform the following basic bricklaying procedures:
 - a. Mixing of mortar
 - b. Laying a mortar bed
 - c. Laying bricks
 7. Identify and put on eye protection, respiratory protection, and a safety harness.
 8. Identify and use the correct procedures for fueling and starting a gasoline-powered tool.
- B. Identify and describe the types masonry tools and equipment.
9. Identify, describe and name the tools used in performing masonry work.
 10. Identify, describe and name the equipment used in performing masonry work.
 11. Identify and describe how each tool is used.
 12. Identify and describe how the equipment is used.
 13. Identify and associate trade terms with the appropriate tools and equipment.
 14. Identify and demonstrate the correct procedures for assembling and disassembling scaffolding according to federal safety regulations, under the supervision of a competent person.
- C. Identify and describe the measurements, drawings, and specifications used in masonry.
15. Identify and work with denominate numbers.
 16. Identify and read a mason's measure.
 17. Identify and describe convert measurements in the U.S. Customary (English) system into their metric equivalents.
 18. Identify and describe recognize, identify, and calculate areas, circumferences, and volumes of basic geometric shapes.
 19. Identify and describe identify the basic parts of a set of drawings.
 20. Identify and discuss the different types of specifications used in the building industry and the sections that pertain to masonry.
- D. Identify and describe the ingredients, types and mixing of mortar.
21. Identify and name and describe the primary ingredients in mortar and their properties.
 22. Identify and describe the various types of mortar used in masonry work.
 23. Identify and describe the common admixtures and their uses.
 24. Identify and describe the common problems found in mortar application and their solutions.
 25. Identify and properly set up the mortar mixing area.
 26. Identify and properly mix mortar by hand.
 27. Identify and properly mix mortar with a mechanical mixer.

- E. Identify and describe the types of masonry units, set-up, lay-up and installation techniques.
28. Identify and describe the most common types of masonry units.
 29. Identify, describe and demonstrate how to set up a wall.
 30. Identify and lay a dry bond.
 31. Identify, describe and spread and furrow a bed joint, and butter masonry units.
 32. Identify and describe the different types of masonry bonds.
 33. Identify and cut brick and block accurately.
 34. Identify and lay masonry units in a true course.
- F. Identify and describe sound environmental practices for masons, including waste disposal, life cycle analysis, green practices and low impact
35. Describe waste disposal methods for this industry according to EPA and industry guidelines.
 36. Describe the process of life cycle analysis in this industry based on industry guidelines.
 37. Identify recycled materials by label and industry practice.
 38. Define “low emission” and give two examples.
 39. Identify new “green” materials now being introduced or currently used in this industry.
 40. Describe new “green” practices and methods being instituted or currently employed within this industry.
 41. 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>.