CNST A060N: MASONRY CONSTRUCTION NONCREDIT

Item	Value
Curriculum Committee Approval Date	11/15/2023
Top Code	095260 - Masonry, Tile, Cement, Lath and Plaster
Units	0 Total Units
Hours	162 Total Hours (Lecture Hours 54; Lab Hours 108)
Total Outside of Class Hours	0
Course Credit Status	Noncredit (N)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	Yes; Repeat Limit 99
Open Entry/Open Exit	No
Grading Policy	P/NP/SP Non-Credit (D)

Course Description

Covers masonry materials, construction and blueprint reading with estimating, construction masonry block walls, paving, veneering, brick and stone pilasters, brick walls and planter boxes, stucco over masonry. Noncredit. NOT DEGREE APPLICABLE. Not Transferable.

Course Level Student Learning Outcome(s)

1. Properly install a concrete block wall that complies with state, county, or city building code requirements.
2. Properly install brick ribbons or brick veneers that are structurally sound, which will include trenching for footings, rebar, wall ties, and demonstrate proper project layout.

Course Objectives

- 1. Read a measuring tape rapidly and accurately to the nearest 1/16 inch.
- 2. Add and subtract fractions and whole numbers.
- 3. Establish layout lines and batter boards for the proper assembly of brick and concrete block projects.
- 4. Identify the different types of footings and calculate the cubic yards of concrete needed to construct a footing.
- 5. Apply the appropriate formulas for problem solving of masonry problems
- 6. Name the appropriate mortar materials used in masonry.
- 7. Recognize and properly name various positioning patterns of brick.
- 8. Apply the appropriate techniques to the installation of block and brick.
- 9. Name and perform the different types of masonry mortar joints.
- 10. Identify masonry projects that can be built with standard industry plans.
- 11. Identify masonry projects that will require a building permit.
- 12. Perform the concrete slump test.
- 13. Properly install masonry reinforcement per code requirements.
- 14. Properly install masonry expansion joints per code requirements.
- 15. Properly apply the masonry acid wash solution to finished projects.
- 16. Properly establish elevations for masonry wall foundations.
- 17. Establish the proper drainage for masonry flatwork.

Lecture Content

Orientation to construction lab area. Safety procedures for all work in the lab. Safety Examination. Basic hand tools for masonry. Power tools for the trade. Learning to use the basic tools. The development of mortar. Types of mortar and their characteristics Proper method of mixing mortar. Concrete forms and placing footings. Building Codes that deal with footings. Math formulas dealing with concrete and estimating projects Estimating concrete block material. Estimating wood form material. Estimating concrete for footings in cubic yards Laying concrete block to the line. Laying the first course Wet set compared to mortar set. Laying the block corner. Leveling the first course. Plumbing and squaring the project. Joint types and the techniques of jointing. Spreading the bed joints. Spreading the head joints. IX. Bonding concrete block and rules of bonding. Running bond. Stacked bond. X. Laying brick to the line. Line blocks for brick. Setting the trig for bricks. Building the brick corner. Racking back le ads for bricks. Parging the corners on brick. Service entrance equipment. Overhead panels. Lateral service panels. Estimating brick materials. Traditional brick patterns. Toothing a corner. Construction of semicircular and segmental arches. Developing the arch. Setting the form for a arch Types of arches. Lintels of masonry.

Lab Content

I. Layout brick to mason line with plasters windows II. Building corners piers III. Intersecting walls IV. Bonded hollow wall grout V. Veneering metal ties VI. Arches VII. Fireplace VIII. Floor pavings ';serif'; font-size: 11pt; IX. Concrete block wall hollow/decorative X. Cleaning, finishing, maintaining materials techniques XI. Brick planter boxes

Method(s) of Instruction

- Enhanced NC Lect (NC1)
- Enhanced NC Lab (NC2)
- Live Online Enhanced NC Lect (NC9)
- Live Online Enhanced NC Lab (NCA)

Instructional Techniques

Lecture, demonstrations, cooperative learning groups, and lab assignments.

Reading Assignments

Students are assigned a weekly reading assignment - approximately 2- 3 hours per week.

Writing Assignments

Homework assignments and lab competency of trade techniques - approximately 2 hours per week.

Out-of-class Assignments

Students are assigned research papers dealing with masonry codes and procedures - approximately 2-3 hours per week.

Demonstration of Critical Thinking

Students will be given various types of written tests for their evaluation in this course during this semester. These will include identification,

multiple choices, fill-in the blank and mathematical calculation. Students will be required to do lab assignments. Students will be required to participate in class discussions and presentations.

Required Writing, Problem Solving, Skills Demonstration

Homework assignments and lab competency of trade techniques.

Eligible Disciplines

Construction technology: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Kicklighter, C.E.. Modern Masonry, 8th ed. Goodheart-Willcox, 2015 Rationale: .