



INTRODUCTION TO CONCRETE MASONRY # 3155

INDUSTRY SECTOR: Building Trades and Construction

PATHWAY: Residential and Commercial Construction

DESCRIPTION:

This basic certificate program in Concrete Masonry includes orientation to the cement masonry trade, industry terminology and blueprint reading. Hands-on training includes the proper use and maintenance of tools and instruction in job safety procedures. Students will learn the basic ingredients of concrete, rodding placement and floating, basic set-up and form work, and clean-up. Integrated throughout the course are Common Core State Standards and Career Technical Education Standards, which include safety, communication, technology, ethics, career planning and other employability skills

INFORMATION:

- A. Pre-requisite:** 16 years old or a 11th /12th grader.
- B. Abilities Required:** [Click here to enter text.](#)
- C. Dress Requirement and Grooming:** Must dress code / Industry Standards.
- D. Students must master 75% of the certificate competencies to receive a certificate.**
- E. Course Length:** 180 hours
- F. Textbook:** [Click here to enter text.](#)
- H. UC a-g Approved:** No
- I. Industry Certification:** No
- J. Sequencing to Include a Capstone:** Not Applicable
- K. Community College Articulation:** No
- L. Common Core Alignment:** Yes
- M. Community Classroom:** No
- N. Career Technical Student Organization:** No
- O. Word Based Learning:** No

UNIT 1. ORIENTATION
INSTRUCTIONAL HOURS: 5.0 HOURS

Common Core Unit Objective

Certificate Competencies

- Identifies and discusses course objectives and competencies.
- Discusses ROP Student Outcomes.
- Explains class attendance and behavior objectives.
- Discusses job opportunities.

Key Assignments

Anchor Standards

5.0 Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the Building and Construction Trades sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques.

9.0 Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution as practiced in the Skills USA career technical student organization.

10.0 Apply essential technical knowledge and skills common to all Pathway Standards in the Building and Construction Trades sector, following procedures when carrying out experiments or performing technical tasks

Pathway Standards

11.1. Utilize work-based/workplace learning experiences to demonstrate and expand upon knowledge and skills gained during classroom instruction and laboratory practices specific to the Building and Construction Trades sector program of study.

Common Core Standards

RS 11-12.4 Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text

UNIT 2. REINFORCING STEEL

INSTRUCTIONAL HOURS: 20.00 HOURS

Common Core Unit Objective

Students will learn how to bend and place rebar and the importance of rebar in reinforcing walls

Certificate Competencies

- Demonstrates and/or explains sizes fabricating shapes, cutter-benders,

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UNIT 3. BASIC BLUEPRINT READING

INSTRUCTIONAL HOURS: HOURS

Common Core Unit Objective

Students will learn how to read and understand Blueprints

Certificate Competencies

- Orientation of prints.
- Identifies views and lines.

Key Assignments

- Students in teams of 3 will read and make material cost break downs from a set of Blueprints.

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UNIT 4. MATERIALS- IDENTIFICATION AND USE

INSTRUCTIONAL HOURS: 20.00 HOURS

Common Core Unit Objective

Students will learn different applications of a variety of materials and their use.

Certificate Competencies

- Demonstrates and/or explains block sizes, adds brick, paving, stucco or cultured stone.
- Explains block standards
- Identifies the different kinds of block/brick

Key Assignments

- Students to mix Mortar for their straight lead project.

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UNIT 5. CONSTRUCTION MATHEMATICS

INSTRUCTIONAL HOURS: 10.00 HOURS

Common Core Unit Objective

Students will know how to read a measuring tape and calculate measurements.

Certificate Competencies

- Demonstrates knowledge of addition, subtraction, multiplication and division of whole numbers, decimals, fractions and mixed numbers
- Demonstrates knowledge of measurement

Key Assignments

- Students will use measuring and mathematics on their wood structure project.

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UNIT 6. MORTAR
INSTRUCTIONAL HOURS: 20.00 HOURS

Common Core Unit Objective

Students will know how to properly mix and apply mortar.

Certificate Competencies

- Demonstrates mixing by hand and by mixer
- Demonstrates mixing procedure

Key Assignments

- Students will mix Mortar and construct a straight lead.

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UNIT 7. USE OF TOOLS AND EQUIPMENT
INSTRUCTIONAL HOURS: 25.00 HOURS

Common Core Unit Objective

Students will learn different tools and equipment in Masonry.

Certificate Competencies

- Demonstrates manipulation of tools
- Demonstrates techniques of spreading and buttering
- Demonstrates proper care, operation of a cement mixer, hand tools and level.

Key Assignments

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SECTION 8. INDIVIDUAL PROJECT INSTRUCTIONAL HOURS: 30.00 HOURS

Common Core Unit Objective

Students will learn how to start and complete a project.

Certificate Competencies

- Demonstrates building skills learned in the classroom
- Projects plumb and level

Key Assignments

- Students work on straight lead, sample panel and corner leads using newly acquired skills.

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SECTION 9. PROJECT APPLICATION

INSTRUCTIONAL HOURS: 40.00 HOURS

Common Core Unit Objective

Students will learn to start and complete their projects.

Certificate Competencies

Key Assignments

- Students work on individual long wall from start to finish.

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