

Journeyman Bricklayer Apprenticeship

Textbooks: NCCER Core Curriculum and Masonry Levels 1, 2 and 3 (Fourth edition / Pearson)

CURRICULUM

Stage 1 (155 NCCER Hours)

- Basic Safety (12.5 Hours)
- Construction Math (10 Hours)
- Construction Drawings (10 Hours)
- Intro to Masonry (12.5 Hours)
- Masonry Safety (15 Hours)
- Masonry Tools & Equipment (15 Hours)
- OSHA-10
- Measurements, Drawings & Specs (10 Hours)
- Mortar (10 Hours)
- Masonry Units and Installation techniques (60 Hours)

Stage 2 (155 NCCER Hours)

- Reinforced Masonry (20 Hours)
- Masonry Openings and Metalwork (20 Hours)
- Advanced Laying Techniques (40 Hours)
- Effect of Climate on Masonry (20 Hours)
- Construction Inspection and Quality Control (15 Hours)
- Elevated Masonry (15 Hours)
- Commercial Drawings (25 Hours)

Stage 3 (60 NCCER Hours)

- Specialized Materials and Techniques (60 Hours)

STAGE 1 Skills Tracking - Journeyman Brickmason Apprenticeship

STAGE 1 / Semester 1 (aka Semester 1)

Objective	Details	✓	Date	Initials
Demonstrate personal safety requirements	Proper clothing, hard hats, shoes, safety vest, safety glasses, dust mask			
Demonstrate how to set up a wall for bricklayer	Proper positioning of materials for bricklayers use; Types of mortar and where they are used; Proper way to portion mix sand and mortar; how to mix mortar by hand (using a hoe) and with a mechanical mixer)			
Demonstrate using a table saw, grinder and chop saw	Safety guards and personal safety; Safety measures for silica and dust control; When to use different types of saws; how to hold the saw, the brick or block when using the saw.			
Demonstrate how to build scaffold	Lay out scaffold using mud sill and nailing jack; Deck out scaffold; Use of hangers and how to move them; When and where to use guardrail; Where and when to tie scaffold down.			
Demonstrate proper trowel use	Load trowel; When to set mortar to trowel and when not to; Spreading mortar for brick; Spreading mortar for CMU; Importance of spreading mortar correctly for laying; Importance of full head joints			

STAGE 1 / Semester 2 (aka Semester 2)

Objective	Details	✓	Date	Initials
Use of Mason Line	Proper use of mortar pin; Set and pull line. Proper use of line blocks; Set and pull line. Proper use of twigs; Set and check.			
Lay block to the line	Proper positioning of block; correct spreading of mortar; Buttering block for head joints; Bringing top over to line; Corner to tap bring bottom corners; Proper tooling of joints and running bed joints; Scrapping of access mortar and brushing.			
Lay brick to the line	Hold and properly position brick; understand the importance of mortar spread correctly to easily lay brick; show how the different joints are done in brick grapevine, concave, weathered; Demonstrate how to hold bond when laying brick to keep joints straight.			
Production Test	Apprentice must be able to lay 20-25 8" CMU blocks per hour to the line and pointed up.			
Production Test	Apprentice must be able to lay 45-50 brick per hour to the line and pointed up.			

STAGE 2 Skills Tracking - Journeyman Brickmason Apprenticeship

STAGE 2 / Semester 1 (aka Semester 3)

Objective	Details	✓	Date	Initials
Demonstrate proper grout/ reinforcement installation	Name and describe the primary ingredients in grout and their properties. Identify the different types of grout used in masonry work. Describe the common admixtures and their uses. Describe the use of steel bar reinforcement in masonry construction.			
Proper Installation of knockdown door frame.	Describe the uses and installation of vertical reinforcement and horizontal reinforcements (and ties); Describe the uses and installation of different anchors, fasteners and embedded items; Describe the functions of sills and lintels.			
Perform advanced laying techniques	Recognize the structural principles and fundamental uses of basic types of walls; Recognize the requirement for, and function of, control joints and expansion joints; Identify and explain the different types of masonry arches used today.			
Performance Test	Properly place grout in a hollow block wall and rod in place; Pour grout for a two-lift pour			
Performance Test	Install a knockdown door frame in a 2- or 3-course brick wall; Install Slip Sill; Lay one wythe of brick against one side of the frame; Install hardware cloth unit ties in every other course.			
Performance Test	Lay a wythe of brick against a block with or wood frame to make a composite wall. Use ties and a collar joint; Lay out specialty structures and arches.			
Performance Test	Lay out a semicircular arch and a jack arch.			

STAGE 2 CONTINUED ON NEXT PAGE

STAGE 2 / Semester 2 (aka Semester 4)

Objective	Details	✓	Date	Initials
Demonstrate proper moisture control measures and construction techniques	Explain and demonstrate techniques for constructing masonry around windows, doors and other openings; Explain the requirements for wall bracing, and demonstrate the techniques used to construct pilasters and other types of bracing; Identify the need for moisture control in various types of masonry construction, and demonstrate the techniques used to eliminate moisture problems.			
Demonstrate an understanding of elevated masonry	Properly don a safety harness, lanyard and lifeline; Demonstrate hand signals used for lifting materials.			
General understanding of commercial drawings	Recognize the difference between commercial and residential construction drawings; Identify the basic keys, abbreviations and other references contained in a set of commercial drawings; Accurately read a set of commercial drawings.			
Performance Test	Construct a four-course corbel starting at the 5th course of a double-double-withe wall; Construct an intersecting block wall joined with wire mesh or metal lath.			
Performance Test	Install flashing			

STAGE 3 Skills Tracking - Journeyman Brickmason Apprenticeship

STAGE 3 / Semester 1 (aka Semester 5)

Objective	Details	✓	Date	Initials
Ability to understand specialized materials and techniques	Explain the various techniques used to provide adequate protection during hot- and cold-weather masonry construction; Describe all-weather construction techniques; Describe techniques for surface-bonding mortar; Demonstrate techniques for construction of stone walls and other stone building surfaces; Demonstrate basic knowledge of various building materials such as glass block and refractory brick.			
Performance Test	Lay and build a set of steps 4' wide x 3-risers high.			
Performance Test	Construct a 4x4-foot wall of glass blocks.			