

CONTRACTOR Guide

TO MASONRY APPRENTICESHIP



FLORIDA
MASONRY APPRENTICE
& EDUCATIONAL
FOUNDATION

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FLORIDA
MASONRY APPRENTICE
& EDUCATIONAL
FOUNDATION

RECRUIT, TRAIN & RETAIN

INVESTING IN APPRENTICESHIP IS GOOD FOR YOUR BUSINESS.

Development of your employees means more than just on-the-job training. If you want to build your business, and create a positive work environment and loyal, hard-working employees, you must offer them the opportunity to advance their career.

True development of your workforce starts with recruiting the best and brightest employees, training them to become master masons, foremen and supervisors, and retaining them by offering them opportunities for advancement.

The Masonry Apprentice Program sponsored by the Masonry Association of Florida, is an excellent place to start investing in your company's future.

As a mason contractor in the state of Florida, the masonry apprentice program is a FREE 3-year classroom and on-the-job training program for your employees.

Participants attend class one night or one Saturday per week, which consists of safety training, estimating, blueprint reading, tools and masonry installation techniques for residential and commercial masonry structures. (See page 5 for a complete outline of classroom hours and pages 6-11 for a complete course outline.)

Additionally, participation in an apprenticeship program helps more than just your bottom line. As an added bonus, your participation also elevates your company's image in the construction industry and the masonry industry as a whole. A trained workforce means better quality masonry construction and ensures that masonry will be the preferred building material in the state of Florida.

- Trained employees make fewer costly mistakes.
- Trained employees create better quality masonry structures, improving your company's reputation.
- Trained employees are a profitable investment in your company's future.



**RECRUIT.
TRAIN.
RETAIN.**

**Invest in your company
and your employees.**

Participate in apprenticeship.

www.masonryeducation.org

Their time, Their card,
THEIR CAREER.



Your trainees are spending the time to get the right skills, now make sure they get the credentials they deserve.

Find out how you can offer NCCER's industry recognized, portable credentials that owners and contractors look for.

Credentials Matter.



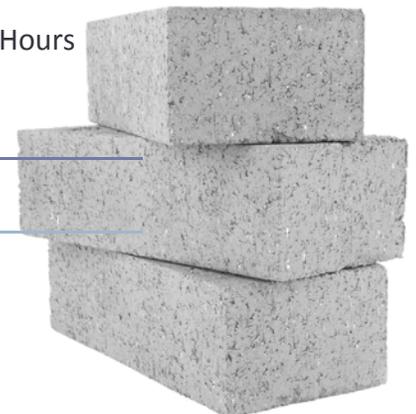
Scan with your smart phone for more information.

The Florida Masonry Apprentice & Educational Foundations is a registered industry training sponsor for NCCER.



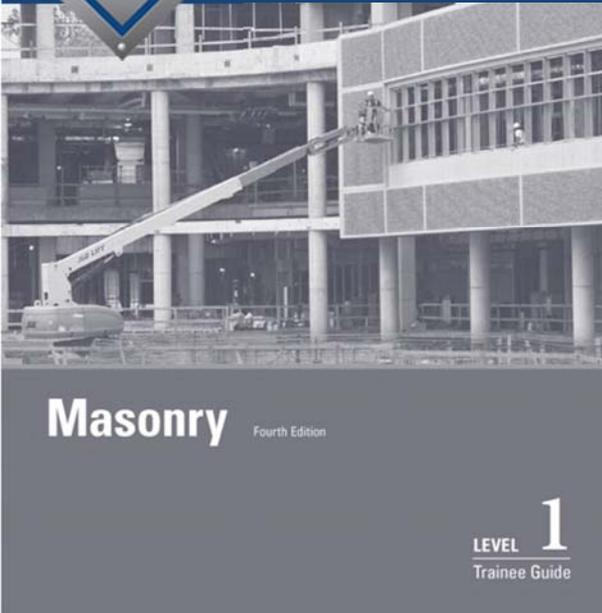
RELATED COURSE TRAINING OUTLINE

Course	Hours
• Introduction to Masonry & Safety	52 Hours
• Masonry Tools & Equipment	12.5 Hours
• Measurements, Drawings & Specification	10 Hours
• Mortar	10 Hours
• Masonry Units & Installation Techniques	60 Hours
• Residential Masonry	25 Hours
• Grout & Other Reinforcement	15 Hours
• Metal Work in Masonry	15 Hours
• Advanced Laying Techniques	50 Hours
• Construction Techniques & Moisture Control	20 Hours
• Construction Inspection & Quality Control	15 Hours
• Masonry in High-Rise Construction	17.5 Hours
• Specialized Materials & Techniques	60 Hours
• Repair & Restoration	17.5 Hours
• Commercial Drawings	25 Hours
• Estimating	25 Hours
<hr/> Total :: 442 Hours <hr/>	





MASONRY:: Level One



MODULE 28101-13 INTRODUCTION TO MASONRY

Provides information about basic masonry materials, tools, techniques, and safety precautions; explains how to mix mortar by hand and lay masonry units; and describes the skills, attitudes, and abilities of successful masons.

- Discuss the history of masonry.
- Describe modern masonry materials and methods.
- Explain career ladders and advancement possibilities in masonry work.
- Describe the skills, attitudes, and abilities needed to work as a mason.
- Perform the following basic bricklaying procedures:
 - Mixing of mortar, Laying a mortar bed
 - Laying bricks

MODULE 28106-13 MASONRY SAFETY

Describes how to identify the common causes of accidents and the hazards associated with masonry tools, equipment, mortar, and concrete. Provides information on using personal protective equipment, working safely from elevated surfaces, properly using masonry tools and equipment, and handling masonry materials safely.

- Put on eye protection, respiratory protection, and a safety harness.
- Use the correct procedures for fueling and starting a gasoline-powered tool.
- State the safety precautions that must be practiced at a work site, including the following:
 - Safety practices
 - Fall-protection procedures
 - Forklift-safety operations

MODULE 28102-13 - MASONRY TOOLS AND EQUIPMENT

Describes a variety of hand tools, measuring tools, mortar equipment, power tools and equipment, and lifting equipment that masons use on the job, and explains how to use these tools correctly and safely. Provides instructions for assembling and disassembling scaffolds.

- Identify and name the tools used in performing masonry work.
- Identify and name the equipment used in performing masonry work.
- Describe how each tool is used.
- Describe how the equipment is used.
- Associate trade terms with the appropriate tools and equipment.
- Demonstrate the correct procedures for assembling and disassembling scaffolding according to federal safety regulations, under the supervision of a competent person.





MASONRY:: Level One

MODULE 28103-13- MEASUREMENTS, DRAWINGS, AND SPECIFICATIONS

Reviews the calculation of distances and areas common in masonry work, describes the information found on residential construction drawings, and explains the role of specifications, standards, and codes.

- Work with denominate numbers.
- Read a mason's measure.
- Convert measurements in the U.S. Customary (English) system into their metric equivalents.
- Recognize, identify, and calculate areas, circumferences, and volumes of basic geometric shapes.
- Identify the basic parts of a set of drawings.

MODULE 28104-13 - MORTAR

Explains the types and properties of mortar and the materials used in the mixture, including admixtures; provides instructions for mixing mortar by machine; and describes how to properly apply and store mortar.

- Name and describe the primary ingredients in mortar and their properties.
- Identify the various types of mortar used in masonry work.
- Describe the common admixtures and their uses.
- Identify the common problems found in mortar application and their solutions.
- Properly set up the mortar mixing area.
- Properly mix mortar by hand.
- Properly mix mortar with a mechanical mixer.

MODULE 28105-13 - MASONRY UNITS AND INSTALLATION TECHNIQUES

Describes characteristics of block and brick; how to set up, lay out, and bond block and brick; how to cut block and brick; how to lay and tool block and brick; and how to clean block and brick once they have been laid. Provides information about masonry reinforcements and accessories used to lay block and brick professionally and safely.

- Describe the most common types of masonry units.
- Describe and demonstrate how to set up a wall.
- Lay a dry bond.
- Spread and furrow a bed joint, and butter masonry units.
- Describe the different types of masonry bonds.
- Cut brick and block accurately.
- Lay masonry units in a true course.





MASONRY:: Level Two



Masonry Fourth Edition

LEVEL 2
Trainee Guide

MODULE 28201-14 - RESIDENTIAL PLANS AND DRAWING INTERPRETATION

Explains how to work with residential plans and construction drawings and convert that information into action on the job. Describes the organization and format of plans, dimensioning and scaling, and estimating materials quantities from information on the plans.

- Explain the organization of residential plans and drawings.
- Interpret dimensions and scales on drawings.
- Interpret information on residential plans.
- Estimate material quantities from plans and drawings.

MODULE 28202-14 - RESIDENTIAL MASONRY

Covers the construction techniques for residential and small structure foundations, steps, patios, decks, chimneys, and fireplaces. Describes work activities that the mason must perform, as well as those that tie into the masonry work.

- Explain the requirements for construction of various types of residential foundations.
- Identify and explain the characteristics, uses, and installation techniques for brick pavers.

- Lay out and build steps, patios, and decks made from masonry units.
- Lay out and build chimneys and fireplaces.

MODULE 28203-14 - REINFORCED MASONRY

Focuses on the use of grout and other types of reinforcement, such as reinforcing steel, to strengthen and support masonry structures. Describes the locations where grout can be used and the techniques for placement. Discusses the use and application of various types of reinforced masonry elements, such as rebar and bond beam lintels.

- 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.
- Apply grout in low and high lifts using the proper techniques.
- Place grout in a hollow block wall and rod it into place.

MODULE 28204-14 - MASONRY OPENINGS AND METAL WORK

Introduces types of metal components, including metal rods, joint reinforcements, plates, anchors, fasteners, and hollow metal frames for doors and windows, and explains how they are installed.

- Describe the uses and installation of vertical reinforcement.
- Describe the uses and installation of different types of horizontal joint reinforcements and ties.



MASONRY:: Level Two

- Describe the uses and installation of different anchors, fasteners, and embedded items.
- Install hollow metal frames.
- Describe the functions of sills and lintels.
- Install sills and lintels and metal hardware

MODULE 28205-14 - ADVANCED LAYING TECHNIQUES

Describes the construction of masonry wall systems, weep vents, and joints. Includes safety requirements and interaction with structural components.

- Recognize the structural principles and fundamental uses of basic types of walls.
- Recognize the requirement for, and function of, control joints and expansion joints.
- Build various types of walls using proper reinforcement, jointing, and bonding techniques.
- Lay out specialty structures such as maintenance

holes, segmented block walls, and screens.

- Identify and explain the different types of masonry arches used today.
- Lay out a semicircular arch and a jack arch.

MODULE 28206-14 EFFECT OF CLIMATE ON MASONRY

Describes materials and techniques used to apply insulation and methods of moisture control as they relate to the mason's trade. Includes hot- and cold-weather considerations.

MODULE 28207-14 CONSTRUCTION INSPECTION AND QUALITY CONTROL

Introduces the quality control requirements for masonry construction. Presents procedures for inspection and testing of masonry materials and finished masonry construction.



DID YOU KNOW?

Any student in a masonry apprentice program that has completed the NCCER CORE in a Florida pre-apprentice construction program can receive up to six months credit towards the completion of their apprenticeship.

If that student also completes Masonry Level 1 in a qualified pre-apprentice program can receive up to a full year of credit!

Ask an MEF state representative for more information!

www.masonryeducation.org



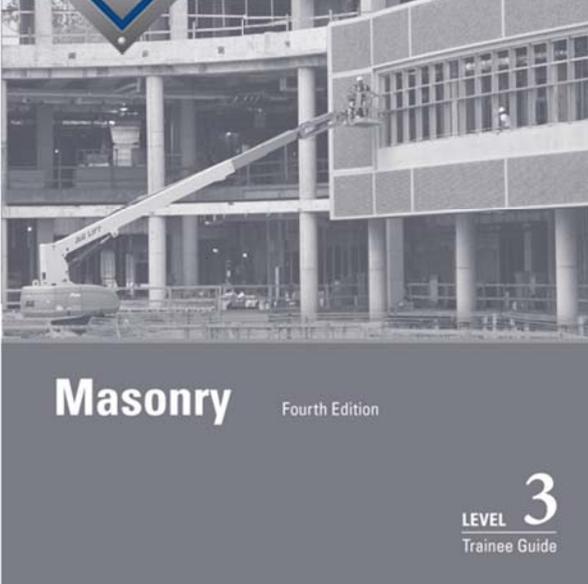
Scan with your smart phone for more information.

The Florida Masonry Apprentice & Educational Foundations is a registered industry training sponsor for NCCER.





MASONRY:: Level Three



MODULE 28301-14 - ELEVATED MASONRY

- Recognize and explain the use of high-rise construction equipment.
- Identify construction sequence in high-rise construction.
- State the safety procedures in high-rise construction.
- Safely work with materials handling equipment in high-rise construction.
- Properly put on a safety harness, lanyard, and lifeline.
- Demonstrate hand signals used for lifting materials.

MODULE 28302-14 - SPECIALIZED MATERIALS AND TECHNIQUES

Introduces unique types of masonry situations that won't be encountered on every job, including sound-barrier walls, arches, and the use of acid brick, refractory brick, and glass block. Describes the handling and construction of these materials, and introduces the intricacies of each.

- 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.

MODULE 28303-14 - REPAIR AND RESTORATION

Details techniques for identifying and repairing common masonry problems of weathering, settling, stain, etc. Explains tuck-pointing, the removal of efflorescence and stains, and crack repair. Includes sections on how to repair foundation walls, water intrusion, and localized problems and fireplace and chimney repair.

- Recognize signs of deterioration in masonry structures.
- Describe the causes of efflorescence, cracking, and faulty mortar joints.
- Describe the procedures for preventing and correcting efflorescence, cracking, and faulty mortar joints.
- Describe the procedures for preventing and correcting water damage in basements.
- Describe the procedures for rebuilding fireplaces.
- Replace a damaged brick in a wall.
- Repair mortar joints.

MODULE 28304-14 - 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.
- Explain basic construction details and concepts employed in commercial construction.



MASONRY:: Level Three

MODULE 28305-14 - ESTIMATING

Describes how to estimate building materials, such as brick, block, grout, mortar, joint reinforcement, and masonry ties. Details multiple methods for estimating, as well as how to estimate for masonry elements such as openings and lintels.

- Explain and apply basic materials estimating procedures for concrete block and brick construction.
- Explain and apply basic estimating procedures for reinforcements, ties, and other materials.
- Explain and apply procedures for estimating quantities of mortar and mortar materials.

MODULE 28306-13 - SITE LAYOUT-DISTANCE MEASUREMENT AND LEVELING

Covers the techniques needed to produce and read site plans and topographic maps. Describes the use of measuring devices, such as tapes, range poles, plumb bobs, total stations, leveling instruments, and field notes. Also discusses the construction of batter boards and how to ensure correct measurements.

- Describe the major responsibilities of the mason relative to site layout.
- Convert measurements stated in feet and inches to equivalent measurements stated in decimal feet, and vice versa.
- Use and properly maintain tools and equipment associated with taping.
- Use taping and/or chaining equipment and procedures to make distance measurements and perform site layout tasks.
- Determine approximate distances by pacing.
- Recognize, use, and properly care for tools and equipment associated with differential leveling.
- Use a builder's level or transit and differential leveling procedures to determine site and building elevations.

- Record site layout data and information in field notes using accepted practices.
- Check and/or establish 90-degree angles using the 3-4-5 rule.

MODULE 28308-14 - STONE MASONRY

Focuses on the application of natural stone in masonry construction. Describes types of stone and how stone is cut, finished, and stored. Discusses equipment and tools for handling stone. Details how to estimate and install stone using anchors and mortars and explains how to install stone veneers.

MODULE 46101-11 - FUNDAMENTALS OF CREW LEADERSHIP

- Discuss current issues and organizational structure in the construction industry today.
- Understand and incorporate leadership skills into work habits, including communication, motivation, team building, problem solving, and decision-making skills.
- Demonstrate an awareness of safety issues, including the cost of accidents and safety regulations.
- Identify a supervisor's typical safety responsibilities.
- Show a basic understanding of the planning process, scheduling, and cost and resource control.



FOR YOUR EMPLOYEES



GETTING STARTED

Masonry apprenticeship is for individuals who pride themselves in their artistic abilities and who wish to earn a good living while performing their craft. The MAF has developed state registered masonry apprenticeship standards with participating programs throughout the state of Florida. In an earn-while-you-learn structure, the apprentice learns on the job as well as in the classroom. Completion of the 3-year apprenticeship assures the graduate that he/she has knowledge to earn a good living anywhere in the world!

The program consists of hands-on training combined with classroom instruction with the focus on basic masonry skills. This program is FREE — in order to be eligible, students must be employed full-time by a participating employer. The program is state registered and certified by the Masonry Association of Florida, Inc.

APPRENTICESHIP::WHAT TO EXPECT

The mason apprentice program is a 3-year program at no cost to the apprentice—provided that you maintain employment with a member contractor. As your work experience expands, your salary will be reviewed every 6 months by your employer and instructor. With a good attendance record and command of necessary skills, apprentices can enjoy increases in salary.

As an apprentice, you will learn to do the job right the first time by a qualified instructor (Journey person). You are taught both

job safety and the tools to develop good work and life skills. As an apprentice in training, you will learn the trade faster and safer and have a better chance to advance to a foreman or supervisor position based on your skill level.

Mason contractors have been facing a shortage of skilled masons. With the skills you learn in the 3-year program you will have a career for life and can take your experience anywhere in the world for employment.

Classroom training will teach you about tools, materials, job safety, layout for block and brick and blue print reading.

WHAT DO I NEED TO SIGN UP?

All apprentices must be 18 years of age, must apply in person and bring the following documentation: Valid Driver's License, Social Security Number or Card, and if applicable, documentation of US Citizenship or Legal Resident Alien with work permit.

Contact the Florida Masonry Apprentice & Educational Foundation for program locations and sign-up dates:

www.masonryeducation.org

PARTICIPATING EMPLOYER AGREEMENT



APPRENTICESHIP PARTICIPATING EMPLOYER'S AGREEMENT

PROGRAM # FL

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EMPLOYER FEI/EIN

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This agreement made at _____ Florida between _____
 _____ (hereinafter referred to as Employer) and _____
 _____ (hereinafter referred to as Program Sponsor)

WITNESSETH: That for and in consideration of the mutual covenants and promises herein contained, the parties agree as follows:

I. PARTIES: The parties to this agreement are:
 (Employer)

(Program Sponsor)

(NAME-TYPED)

(ADDRESS-TYPED)

(CITY) (STATE) (ZIP CODE)

(PHONE NUMBER - AREA CODE & NUMBER) / (FAX NUMBER - AREA CODE & NUMBER)

(NAME-TYPED)

(ADDRESS-TYPED)

(CITY) (STATE) (ZIP CODE)

(PHONE NUMBER - AREA CODE & NUMBER) / (FAX NUMBER - AREA CODE & NUMBER)

II. TERMS: The term of this agreement shall commence upon execution by both parties as indicated by the dates set out below and shall continue in force and effect until terminated as herein provided. A termination of this agreement shall be effectuated by one party giving at least thirty (30) days written notice to the other party at the address shown in Article I above.

III. DUTIES: The duties of the parties in the performance of this agreement shall be as follows.

Duties of Program Sponsor:

1. To provide the Employer with copies of all pertinent rules, regulations, and other materials affecting the apprenticeship program. These shall include but are not necessarily limited to copies of Chapter 446, Florida Statutes, as amended (the Florida Apprenticeship Law), the rules and regulations of the Florida Department of Education, Division of Career and Adult Education - Apprenticeship (here in after referred to as the Registration Agency), the applicable apprentice standards, and any pertinent information/instructions received from the Registration Agency or other source.
2. To provide such technical information and administration assistance as may reasonably be necessary for the Employer to comply with all applicable rules, standards, and other requirements.
3. To refer registered apprentices to the Employer for employment in such numbers and at such times as may be requested by the Employer to the extent possible with the existing supply of apprentices and within the requirements of applicable rules and standards.
4. To provide the work-related training required by the program standards.

Duties of the Employer:

1. To read and abide by all applicable laws, rules, regulations, standards and other requirements which govern the operation of the program and training of apprentices. The Employer hereby acknowledges receipt of the registered apprenticeship program standards as approved by the Registration Agency.
2. To retain the apprentice(s) in his employ as work is available and train said apprentice(s) in the trade of:

 3. To pay his fair share of the financial expense of the Program Sponsor. In determining the actual amounts due from the Employer, the funding formula contained in the registered program standards shall control.

IV. COPIES: This agreement shall be made and executed in duplicate originals, one of each shall be retained by the Employer and one to be retained by the Program Sponsor. An executed copy shall be made at the same time and be sent by the Program Sponsor to the Registration Agency local servicing representative's address. In addition, a copy of any notice of termination as provided in Article II shall be sent to the Registration Agency, by the party so terminating. IN WITNESS WHEREOF, the parties set their hands on the dates below indicated.

EMPLOYER

PRINT NAME: _____
 SIGN: _____
 TITLE: _____
 DATE: _____

PROGRAM SPONSOR

PRINT NAME: _____
 SIGN: _____
 TITLE: _____
 DATE: _____



BUILD YOUR FUTURE:: BUILD FLORIDA



DID YOU KNOW...?

- ◆ The Florida Masonry Apprenticeship & Educational Foundation sponsors 132 construction training facilities in 43 Florida counties.
- ◆ There were 5327 new students enrolled as of April 2015 for the current school year.

This NCCER pre-apprentice construction training curriculum is endorsed by these organizations:



FOR MORE INFORMATION
www.masonryeducation.org