# Scope & Sequence

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| Course Name: Masonry Technology II **PEIMS Code:** 13006400 | | | **Course Credit:** 2.0  **Course Requirements:** Grade Placement 11-12.  **Prerequisites:** Masonry Technology I. |
| **Course Description:** Masonry Technology II is designed to further enhance the skills and knowledge of the beginning masonry student. For safety and liability considerations, limiting course enrollment to 15 students is recommended. | | | |
| **NOTE:** This is a suggested scope and sequence for the course content. This content will work with any textbook or instructional materials. If locally adapted, make sure all TEKS are covered. | | | |
| **Total Number of Periods**  **Total Number of Minutes**  **Total Number of Hours** | 350 Periods.  15,750 Minutes.  262.5 Hours.\* | \*Schedule calculations based on 175/180 calendar days. For 0.5 credit courses, schedule is calculated out of 88/90 days. Scope and sequence allows additional time for guest speakers, student presentations, field trips, remediation, extended learning activities, etc. | |
| **Unit Number, Title, and Brief Description** | **# of Class Periods\***  (assumes 45-minute periods)  Total minutes per unit | **TEKS Covered**  **§130.52. (c) Knowledge and skills** | |
| **Unit 1: Leadership/Professional Skills**  Students will explore leadership, citizenship, workplace issues, communication skills, computer skills and teamwork skills required for success in the community and workplace. Students will have an opportunity throughout the course to solve problems and demonstrate critical-thinking skills. Students will expand their knowledge base and interest in careers and entrepreneurship opportunities in the field of masonry. Students will explore and discuss employment opportunities and industry certifications and requirements in small groups and as a class as they continue develop their individualized career preparation plans. Students will discuss and demonstrate personal responsibility. | 30 periods  1,350 minutes | (1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:  (A) explain the role of an employee in the construction industry;  (B) demonstrate critical-thinking skills;  (C) demonstrate the ability to solve problems using critical-thinking skills;  (D) demonstrate knowledge of basic computer systems;  (E) explain common uses for computers in the construction industry;  (F) define effective relationship skills; and  (G) recognize workplace issues such as sexual harassment, stress, and substance abuse. | |
| **Unit 2: Math Concepts**  Students will apply math concepts in various tasks of masonry. Examples of applications are reading multiple measuring devices, interpreting dimensions and scales on drawings, estimating material quantities, and calculating square footage from a plan. Students will be given multiple opportunities to describe, demonstrate and apply relevant problem-solving and mathematical skills in-context as they read and interpret information, technical bulletins and specifications from a variety of sources. | 70 periods  3,150 minutes | (2) The student recognizes mathematical concepts used in masonry and is able to apply mathematical concepts used in masonry. The student is expected to:  (A) read a six-foot rule;  (B) read other measuring devices;  (C) read a mason's rule;  (D) apply the 3-4-5 formula to square a corner;  (E) recognize modular increments;  (F) describe how to determine areas and circumferences;  (G) explain the basic parts of a set of drawings;  (H) identify lines, symbols, and abbreviations used on drawings;  (I) explain scales and dimensions used on drawings;  (J) explain types of construction drawings;  (K) identify the purpose of specifications, standards, and codes used in the building industry and the sections that pertain to masonry;  (L) explain the purpose of specifications, standards, and codes; and  (M) describe the purpose of inspections and testing. | |
| **Unit 3: Types of Mortar**  Students will explore the properties, ingredients, and problems with multiple types of mortar such as cement and pre-blended mortars. Students may also become familiar with conditions for mixing, maintaining and disposing mortar.  Students will be given multiple opportunities to learn, practice, and demonstrate their technical knowledge, skills, and understanding of mortar in “hands-on” activities, presentations, discussions, and inspections in simulated work situations | 70 periods  3,150 minutes | (3) The student learns to describe the ingredients and types of mortar. The student is expected to:  (A) explain the use of Portland cement, hydrated lime, and sand;  (B) identify masonry cement;  (C) explain pre-blended mortars;  (D) explain the use of water and admixtures;  (E) list the types of masonry mortars;  (F) explain the properties of plastic mortar;  (G) identify the properties of hardened mortar;  (H) identify the common problems found in mortar application and their solutions;  (I) describe the effects of improper proportioning and poor-quality materials;  (J) explain the effects of severe weather and tempering;  (K) describe efflorescence;  (L) set up, maintain, and dispose of mortar;  (M) maintain the mortar mixing area;  (N) set up a mixing area; and  (O) mix mortar with a power mixer. | |
| **Unit 4: Installing Concrete Masonry Units**  Students will have opportunities to demonstrate skill in installing and laying techniques in various projects. Through these projects student will be involved in set up, layout, cleaning and cutting units with various tools. Students will be given multiple opportunities to learn, practice, and demonstrate their technical knowledge, skills, and understanding of installation methods and procedures in “hands-on” activities, presentations, discussions, and inspections in simulated or work situations | 140 periods  6,300 minutes | (4) The student describes how to install concrete masonry units. The student is expected to:  (A) identify the characteristics of concrete masonry units;  (B) explain how to set up, layout, and bond concrete masonry units;  (C) explain how to lay and tool concrete masonry units;  (D) explain how to clean concrete masonry units;  (E) identify the characteristics of brick;  (F) demonstrate how to set up, layout, and bond brick;  (G) demonstrate how to lay and tool brick;  (H) demonstrate how to clean brick;  (I) cut with chisels and hammers;  (J) cut with masonry hammers;  (K) cut with saws and splitters;  (L) check units and cuts;  (M) install masonry reinforcements; and  (N) install masonry accessories. | |
| **Unit 5: Inspection and Quality Control**  Students will discuss tests, field inspections, and industry standards for quality control. Students may also be exposed to concerns, problems and positive points that are required by employers, customers and regulatory officials. Student projects will be evaluated and feedback provided to reinforce quality control expectations. | 40 periods  1,800 minutes | (2) The student recognizes mathematical concepts used in masonry and is able to apply mathematical concepts used in masonry. The student is expected to:  (K) identify the purpose of specifications, standards, and codes used in the building industry and the sections that pertain to masonry;  (L) explain the purpose of specifications, standards, and codes; and  (M) describe the purpose of inspections and testing.  (3) The student learns to describe the ingredients and types of mortar. The student is expected to:  (H) identify the common problems found in mortar application and their solutions;  (I) describe the effects of improper proportioning and poor-quality materials;  (J) explain the effects of severe weather and tempering. | |