# Scope & Sequence

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| Course Name: Masonry Technology l **PEIMS Code:** 13006300 | **Course Credit:** 2.0**Course Requirements:** Grade 10-12.**Prerequisites:** None.**Recommended Prerequisites:** Principles of Construction. |
| **Course Description:** Provide information and techniques related to basic masonry and safety precautions. 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****130.51 (c) Knowledge and skills** |
| **Unit 1: Leadership Skills**Students will explore leadership, citizenship, workplace issues, communication skills, and teamwork skills required for success in the community and workplace. The students will have an opportunity throughout the course to solve problems and demonstrate critical-thinking skills. | 25 periods1,125 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; (F) define effective relationship skills; and(G) recognize workplace issues such as sexual harassment, stress, and substance abuse. |
| **Unit 2: Employability Skills**Students will become familiar with career ladders and advancements as well as certification opportunities. They will have an opportunity to apply computers skills to masonry tasks. Students will discuss workplace ethics, appropriate work habits, and importance of attitudes and relationships in the work setting.  | 25 periods1,125 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 3: Safety and Accident Prevention**Students will become familiar and apply good safety habits throughout the training program. The students will develop an understanding of the costs and causes of accidents, the importance of safety with hand tools and scaffolds, and the need for protective equipment.  | 60 periods2,790 minutes | (3) The student identifies safe practices and expectations for the masonry industry. The student is expected to:(A) identify the costs of job accidents;(B) identify the causes of job accidents;(C) recognize the hazards;(D) demonstrate proper housekeeping techniques;(E) observe mortar and concrete safety; and(F) observe flammable liquid safety.(4) The student demonstrates awareness of safe practices and expectations for the masonry industry and recognizes proper personal protective equipment. The student is expected to:(A) explain protective lenses and face shields;(B) describe hearing protection;(C) identify gloves used in the masonry trade; and(D) use respirators.(5) The student understands the importance of being trained in and aware of safe practices and expectations for the masonry industry, including working safely from elevated surfaces. The student is expected to:(A) explain fall protection procedures;(B) describe personal fall arrest systems;(C) list basic scaffold safety guidelines; and(D) explain how to protect against falling objects. |
| **Unit 4: Proper Use and Care of Tools and Equipment**Students will be able to identify and explain the safe use of tools and equipment used on masonry projects. Students will be expected to properly care of the tools and equipment in all masonry tasks.  | 35 periods1,575 minutes | (6) The student explains safe practices and expectations for the masonry industry. The student is expected to:(A) explain the safe use of hand tools;(B) demonstrate the safe use of saws;(C) explain the safe use of mixers;(D) explain the safe use of grinders;(E) describe the safe use of powder-actuated tools;(F) explain how to work safely around a fork lift;(G) list basic electrical safety guidelines;(7) The student identifies masonry hand tools. The student is expected to:(A) demonstrate how to use trowels;(B) demonstrate how to use hammers and chisels;(C) demonstrate how to use jointers and brushes; and(D) identify other hand tools used in masonry. |
| **Unit 5: Measurement, Drawing and Specifications**Students will apply math concepts such as working with dominate numbers, converting from English system to Metric equivalents, and calculating area, circumference, and volume of basic geometric shapes. Students will be able to read and use a mason’s rule and other rules, levels plum-bobs to perform basic masonry tasks.  | 45 periods2,025 minutes | (8) The student understands the importance of measurements and measuring tools used in masonry. The student is expected to:(A) demonstrate how to use the modular spacing rule, brick spacing rule, oversized brick spacing rule, and steel tape measure;(B) demonstrate how to use levels;(C) demonstrate how to use chalk boxes, squares, plumb-bobs, and laser levels; and(D) demonstrate how to use corner poles, lines, and fasteners. |
| **Unit 6: Basic Masonry Materials and Techniques**Students will explain how various masonry units (concrete blocks, bricks, stone, mortar, grout) are used in construction. Students will be given multiple opportunities to learn, practice, and demonstrate their technical knowledge, skills, and understanding of basic masonry methods and procedures in “hands-on” activities, presentations, discussions, and inspections in masonry projects. Students will develop skills in mixing mortar grout, stone, concrete and other masonry materials.  | 70 periods3,150 minutes | (2) The student describes materials and techniques used in basic masonry. The student is expected to:(A) explain how concrete masonry units (CMUs), or blocks, are used in construction;(B) explain how clay masonry units (bricks) are used in construction;(C) explain how stone is used in construction;(D) describe how mortar and grout are used in masonry construction; and(E) describe how wall structures are created using masonry units. |
| **Unit 7: Masonry Units and Installation Techniques**Students will explore the most common types of masonry units; develop skills in setting up a masonry unit; identify types of masonry bonds; and cutting and laying bricks and blocks. Students will apply safe practices in storing and stacking bricks. Students will practice these tasks through various projects. | 90 periods4,050 minutes | (2) The student describes materials and techniques used in basic masonry. The student is expected to:(A) explain how concrete masonry units (CMUs), or blocks, are used in construction;(B) explain how clay masonry units (bricks) are used in construction;(C) explain how stone is used in construction;(D) describe how mortar and grout are used in masonry construction; and(E) describe how wall structures are created using masonry units.(6) The student explains safe practices and expectations for the masonry industry. The student is expected to: (H) explain how to store and stockpile masonry materials safely; and(I) demonstrate how to stack brick safely. |