# Scope & Sequence

|  |  |  |
| --- | --- | --- |
| **Course Name:** Practicum in Masonry Technology/Extended Practicum in Masonry Technology  **TSDS PEIMS Code:** 13006455 (First Time Taken)  13006465 (Second Time Taken) | | **Course Credit:** 3.0  **Course Requirements:** Grade Placement 12.  **Prerequisites:** Masonry Technology II.  **Corequisites:** Practicum in Masonry Technology. |
| **Course Description:** Extended Practicum in Masonry Technology is an occupationally specific course designed to provide classroom technical instruction or work-based learning experiences. Instruction may be delivered through laboratory training or through career preparation delivery arrangements. Safety and career opportunities are included, in addition to work ethics and job-related study in the classroom. Trade and industrial education provides the knowledge, skills, and technologies required for employment in masonry construction. Students will develop knowledge of the concepts and skills related to this trade in order to apply them to personal/career development. Trade and industrial education depends on and supports integration of academic, career, and technical knowledge and skills. To prepare for success, students must have opportunities to reinforce, apply, and transfer their knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for success. For safety and liability considerations, including power tools usage during training, limiting course enrollment to 15 students is recommended. | | |
| **NOTE 1:** The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Architecture & Construction Career Cluster. This is a suggested scope and sequence for the course content. This content will work with any textbook, instructional materials or practicum experience. If locally adapted, make sure all TEKS are covered.  **NOTE 2:** Completion of skill sets may be demonstrated throughout the practicum. Therefore, content based on the TEKS does not have to be delivered sequentially. The major reason students take a practicum is to provide additional time on task for learning specialized skills. In most cases where the Extended Practicum is added to the Practicum, it is because the student is spending more than 15 hours per week at his/her training station (place of employment or internship).  **NOTE 3:** The information in this scope and sequence document does not describe detailed activities, because the activities will vary from student to student and training station to training station. The intent is that students incorporate and use previously learned knowledge and skills related to the career cluster. | | |
| **Practicum Plan** | **TEKS Covered**  **130.65. (c) Knowledge and skills.** | |
| **Section 1: Pre-Practicum**  Prior to beginning practicums, students will review and discuss professional standards and employers’ expectations, personal and workplace safety, effective problem-solving strategies, positive interpersonal skills, the principles of group participation and teamwork, appropriate work habits, ethical conduct, and conflict-management skills. Students will also discuss the technical and academic skills required for the practicum, and put into place strategies for mastering any/all skills necessary to manage and perform work/practicum responsibilities.  Also prior to beginning their practicum experiences, students will agree to adhere to policies and procedures, demonstrate positive work attitudes and behaviors, including punctuality and effective time management, to accept constructive criticism, and to comply with all applicable rules, laws, and regulations in a consistent manner.  Students, supervising instructors, and practicum experience supervisors will read and review locally created practicum checklist(s). Parents/guardians will also be provided with a copy. Checklist(s) will include all relevant TEKS along with rubrics for supervisor evaluations and student self-evaluations. Students will read, discuss, and demonstrate an understanding of the provided checklist and rubric criteria before beginning their practicum experiences. | (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) demonstrate effective relationship skills; and  (G) recognize workplace issues such as sexual harassment, stress, and substance abuse. | |
| **Section 2: TEKS Checklist Components for Practicum in Masonry Technology**  Students, parents/guardians, and instructional/workplace supervisors will review, understand, and agree to a checklist of practicum objectives. Checklists may be locally adapted/modified, but all corresponding TEKS Checklist Components must be addressed. | (1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:  (B) demonstrate critical-thinking skills;  (C) demonstrate the ability to solve problems using critical-thinking skills;  (D) demonstrate knowledge of basic computer systems;  (F) demonstrate effective relationship skills.  (2) The student demonstrates trowel proficiency. The student is expected to:  (A) demonstrate proficiency spreading mortar;  (B) demonstrate proficiency spreading mortar at various heights;  (C) demonstrate proficiency spreading mortar on different types and sizes of brick;  (D) demonstrate proficiency spreading mortar on different types and sizes of concrete masonry units (CMU); and  (E) demonstrate proficiency buttering masonry units laid in different positions in a masonry wall.  (3) The student constructs single wythe brick walls with level. The student is expected to:  (A) build a brick lead with a level;  (B) build a brick wall with a level;  (C) build an outside corner with a level;  (D) build an inside corner with a level; and  (E) build a double wythe brick wall with a level.  (4) The student constructs a brick wall demonstrating different brick positions in a wall. The student is expected to:  (A) lay a stretcher in a masonry wall;  (B) lay a header in a masonry wall;  (C) lay a rowlock in a masonry wall;  (D) lay a sailor in a masonry wall;  (E) lay a soldier in a masonry wall; and  (F) lay a shiner (rowlock stretcher) in a masonry wall.  (5) The student builds a brick column. The student is expected to:  (A) construct a four-brick column with a level;  (B) construct a six-brick column with a level;  (C) construct an eight-brick column with a level; and  (D) construct a ten-brick column with a level.  (6) The student lays CMU. The student is expected to:  (A) build a block CMU lead with a level;  (B) build a block CMU wall with a level; and  (C) build a block CMU corner with a level.  (7) The student builds a block CMU column. The student is expected to:  (A) build a four-block column of 8-inch block CMU;  (B) build a six-block column of 8-inch block CMU;  (C) build a ten-block column of 8-inch block CMU;  (D) build a four-block column of 4-inch CMU; and  (E) build a four-block column of 6-inch CMU.  (8) The student constructs a composite masonry wall of brick and block. The student is expected to:  (A) build a composite wall of brick and 8-inch block CMU; and  (B) build a composite wall of brick and 4-inch block CMU.  (9) The student installs coping on a masonry wall. The student is expected to:  (A) lay single brick rowlock coping on a masonry wall;  (B) lay double brick rowlock coping on a masonry wall;  (C) lay 12-inch bonded brick rowlock coping on a masonry wall;  (D) lay 16-inch bonded brick rowlock coping on a masonry wall;  (E) install limestone coping on a masonry wall;  (F) install cast stone coping on a masonry wall; and  (G) install prefab concrete coping on a masonry wall.  (10) The student constructs a natural stone wall. The student is expected to:  (A) set natural stone in a random pattern in a masonry wall;  (B) set natural stone in an ashlar pattern in a masonry wall; and  (C) install flat work of natural stone in a random pattern.  (11) The student installs manufactured stone. The student is expected to:  (A) install manufactured stone on a wall in a random pattern; and  (B) install manufactured stone on a wall in an ashlar pattern.  (12) The student lays brick to a line. The student is expected to:  (A) lay modular brick to a line;  (B) lay king-size brick to a line;  (C) lay queen-size brick to a line; and  (D) lay utility brick to a line.  (13) The student lays CMU to a line. The student is expected to:  (A) lay 8-inch block CMU to a line;  (B) lay 4-inch block CMU to a line;  (C) lay 6-inch block CMU to a line; and  (D) lay 12-inch block CMU to a line. | |
| **Section 3: Critical-Thinking and Problem-Solving: Practicum Check-Ins**  During practicum check-ins, students will discuss and self-evaluate their practicum check list progress as well as any questions or problems they may have encountered. Students and supervising instructors will discuss course timelines and requirements as well as effective time management strategies for task completion.  Students will also discuss and demonstrate critical-thinking and problem-solving skills as they participate in check-in(s) with supervisors throughout their practicum experiences. Students will describe how they have applied critical-thinking and problem-solving skills, and alternative solutions to possible problems they have encountered thus far or may still encounter. | (1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:  (B) demonstrate critical-thinking skills; and  (C) demonstrate the ability to solve problems using critical-thinking skills. | |
| **Section 4: Extended Practicum Culminating Activities**  As part of their practicum experience, students will demonstrate knowledge of basic computer systems and explain common uses for computers in the construction industry. Students will also research how to recognize workplace issues such as sexual harassment, stress, and substance abuse, and discuss their findings with their supervising instructor. As a practicum culminating activity, students will reflect upon their practicum experiences and explain the role of an employee in the construction industry. | (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; and  (E) explain common uses for computers in the construction industry;  (G) recognize workplace issues such as sexual harassment, stress, and substance abuse. | |
| **Extended Practicum Plan** | **TEKS Covered**  **130.70. (c) Knowledge and skills.** | |
| **Section 1: Pre-Practicum**  Prior to beginning practicums, students will review and discuss professional standards and employers’ expectations, personal and workplace safety, effective problem-solving strategies, positive interpersonal skills, the principles of group participation and teamwork, appropriate work habits, ethical conduct, and conflict-management skills. Students will also discuss the technical and academic skills required for the practicum, and put into place strategies for mastering any/all skills necessary to manage and perform work/practicum responsibilities.  Also prior to beginning their practicum experiences, students will agree to adhere to policies and procedures, to demonstrate positive work attitudes and behaviors, including punctuality and effective time management, to accept constructive criticism, and to comply with all applicable rules, laws, and regulations in a consistent manner. Students will also review and discuss professional communications strategies, including how to observe and interpret verbal and nonverbal cues and behaviors to enhance communication and how to apply active listening skills to obtain and clarify information.  Students, supervising instructors, and practicum experience supervisors will read and review locally created practicum checklist(s). Parents/guardians will also be provided with a copy. Checklist(s) will include all relevant TEKS along with rubrics for supervisor evaluations and student self-evaluations. Students will read, discuss, and demonstrate an understanding of the provided checklist and rubric criteria before beginning their practicum experiences. | (1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:  (A) participate in a paid or unpaid, laboratory- or work-based application of previously studied knowledge and skills related to masonry technology;  (B) participate in training, education, or preparation for licensure, certification, or other relevant credentials to prepare for employment;  (C) demonstrate professional standards and personal qualities needed to be employable such as punctuality, time management, initiative, and cooperation with increased fluency;  (D) employ teamwork and conflict-management skills with increased fluency to achieve collective goals; and  (E) employ planning and time-management skills and tools with increased fluency to enhance results and complete work tasks.  (2) The student implements advanced professional communications strategies. The student is expected to:  (A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;  (B) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and  (C) apply active listening skills to obtain and clarify information.  (3) The student applies concepts of critical thinking and problem solving. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.  (4) The student understands and applies proper safety techniques in the workplace. The student is expected to:  (A) demonstrate understanding of and consistently follow workplace safety rules and regulations; and  (B) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents.  (5) The student understands the professional, ethical, and legal responsibilities in masonry technology. The student is expected to:  (A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;  (B) apply ethical reasoning to a variety of situations in order to make ethical decisions; and  (C) comply with all applicable rules, laws, and regulations in a consistent manner.  (6) The student participates in a masonry technology experience. The student is expected to:  (A) conduct, document, and evaluate learning activities in a supervised masonry technology experience; and  (B) develop advanced technical knowledge and skills related to the student's occupational objective. | |
| **Section 2: TEKS Checklist Components for Extended Practicum in Masonry Technology**  Students, parents/guardians, and instructional/workplace supervisors will review, understand, and agree to a checklist of practicum objectives. Checklists may be locally adapted/modified, but all corresponding TEKS Checklist Components must be addressed. | (1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:  (A) participate in a paid or unpaid, laboratory- or work-based application of previously studied knowledge and skills related to masonry technology;  (B) participate in training, education, or preparation for licensure, certification, or other relevant credentials to prepare for employment;  (C) demonstrate professional standards and personal qualities needed to be employable such as punctuality, time management, initiative, and cooperation with increased fluency;  (D) employ teamwork and conflict-management skills with increased fluency to achieve collective goals; and  (E) employ planning and time-management skills and tools with increased fluency to enhance results and complete work tasks.  (2) The student implements advanced professional communications strategies. The student is expected to:  (A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;  (B) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and  (C) apply active listening skills to obtain and clarify information.  (3) The student applies concepts of critical thinking and problem solving. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.  (4) The student understands and applies proper safety techniques in the workplace. The student is expected to:  (A) demonstrate understanding of and consistently follow workplace safety rules and regulations; and  (B) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents.  (5) The student understands the professional, ethical, and legal responsibilities in masonry technology. The student is expected to:  (A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;  (B) apply ethical reasoning to a variety of situations in order to make ethical decisions; and  (C) comply with all applicable rules, laws, and regulations in a consistent manner.  (6) The student participates in a masonry technology experience. The student is expected to:  (C) demonstrate proficiency spreading mortar;  (D) construct single wythe brick walls with level;  (E) construct a brick wall demonstrating different brick positions in a wall;  (F) build a brick column with advanced proficiency;  (G) lay concrete masonry unit (CMU) with advanced proficiency;  (H) build a block CMU column with advanced proficiency;  (I) construct a composite masonry wall of brick and block;  (J) install coping on a masonry wall with advanced proficiency;  (K) construct a natural stone wall with advanced proficiency;  (L) install manufactured stone with advanced proficiency;  (M) lay brick and CMU to a line with advanced proficiency; and  (P) collect representative work samples. | |
| **Section 3: Critical-Thinking and Problem-Solving: Practicum Check-Ins**  Students will also discuss and demonstrate critical-thinking and problem-solving skills as they participate in check-in(s) with supervisors throughout their practicum experiences. Students will describe how they have applied critical-thinking and problem-solving skills, and alternative solutions to possible problems they have encountered thus far or may still encounter.  During practicum check-ins, students will also discuss and self-evaluate their practicum check list progress as well as any questions or problems they may have encountered. Students and supervising instructors will discuss course timelines and requirements as well as effective time management strategies for task completion. | (2) The student implements advanced professional communications strategies. The student is expected to:  (A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner.  (3) The student applies concepts of critical thinking and problem solving. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.  (6) The student participates in a masonry technology experience. The student is expected to:  (A) conduct, document, and evaluate learning activities in a supervised masonry technology experience; and  (B) develop advanced technical knowledge and skills related to the student's occupational objective. | |
| **Section 4: Extended Practicum Culminating Activities**  During their practicum experience, students will use appropriate technology and/or assigned materials to evaluate and discuss their strengths and weaknesses in technical skill proficiency as well as document and evaluate their practicum learning activities.  In a practicum culminating activity, students will demonstrate effective communications skills as they demonstrate and discuss advanced technical knowledge and skills, and present their evaluations and representative work samples to their supervising instructor. | (2) The student implements advanced professional communications strategies. The student is expected to:  (A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner.  (6) The student participates in a masonry technology experience. The student is expected to:  (A) conduct, document, and evaluate learning activities in a supervised masonry technology experience;  (B) develop advanced technical knowledge and skills related to the student's occupational objective;  (N) demonstrate growth of technical skill competencies;  (O) evaluate strengths and weaknesses in technical skill proficiency; and  (P) collect representative work samples. | |