|  |
| --- |
| **COURSE INTRODUCTION:**This course includes electrical wiring, electrical motors, concrete masonry, plumbing and sewage disposal, farm fences, product handling and processing equipment, and farm buildings. (CD 016720, CIP 01.0201) Course Rationale – Agriculture encompasses the food, fiber, conservation and natural resource systems, employing over 20% of the nation’s workforce. Basic construction skills and knowledge in electricity, plumbing, concrete, and masonry are necessary for the building of agricultural structures. |

|  |  |
| --- | --- |
| **UNIT DESCRIPTION:** Students will learn to determine safe, proper, concrete installation practices based upon agriculture applications. | **SUGGESTED UNIT TIMELINE: 4 WEEKS** **CLASS PERIOD (min.): 50 MINUTES** |
| **ESSENTIAL QUESTIONS:****1. Based on agricultural applications, what are proper concrete installation practices?** |
|  |
| **ESSENTIAL MEASURABLE LEARNING OBJECTIVES**  | **CCSS LEARNING GOALS (Anchor Standards/Clusters)** | **CROSSWALK TO STANDARDS** |
| **GLEs/CLEs** | **PS** | **CCSS** | **ANFR Standards** | **DOK** |
| 1. Investigate safety in working with concrete.
 |  |  |  | RST11-12.7SL11-12.1.aSL11-12.1.c | PST 01.01PST 01.02PST 01.03PST 02.01PST 02.02PST 03.01PST 03.02PST 03.03PST 04.01PST 04.02PST 04.03PST 04.04 | **2** |
| 1. Identify factors that affect the quality of fresh concrete.
 |  |  |  | 8-G-9 N-Q-1N-Q-3G-MGD-3RST11-12.9SL11-12.1.aSL11-12.1.c | PST 01.01PST 01.02PST 01.03PST 02.01PST 02.02PST 03.01PST 03.02PST 03.03PST 04.01PST 04.02PST 04.03PST 04.04 | **3** |
| 1. Identify site preparation requirements.
 |  |  |  | 8-G-9 N-Q-1N-Q-3G-MGD-3RST11-12.7RST11-12.9SL11-12.1.aSL11-12.1.c | PST 01.01PST 01.02PST 01.03PST 02.01PST 02.02PST 03.01PST 03.02PST 03.03PST 04.01PST 04.02PST 04.03PST 04.04 | **3** |
| 1. Describe the procedure for preparing to pour a concrete slab.
 |  |  |  | 8-G-9 N-Q-1N-Q-3G-MGD-3SL11-12.1.aSL11-12.1.c SL11-12.4 | PST 01.01PST 01.02PST 01.03PST 02.01PST 02.02PST 03.01PST 03.02PST 03.03PST 04.01PST 04.02PST 04.03PST 04.04 | **3** |
| 1. Explain the procedure for ordering, pouring, and finishing concrete.
 |  |  |  | 8-G-9 N-Q-1N-Q-3G-MGD-3SL11-12.1.aSL11-12.1.c SL11-12.4 | PST 01.01PST 01.02PST 01.03PST 02.01PST 02.02PST 03.01PST 03.02PST 03.03PST 04.01PST 04.02PST 04.03PST 04.04 | **3** |
| 1. Identify factors affecting the quality of cured concrete.
 |  |  |  | 8-G-9 N-Q-1N-Q-3G-MGD-3RST11-12.9SL11-12.1.aSL11-12.1.c  | PST 01.01PST 01.02PST 01.03PST 02.01PST 02.02PST 03.01PST 03.02PST 03.03PST 04.01PST 04.02PST 04.03PST 04.04 | **3** |
| 1. Describe the procedure for pouring a concrete wall.
 |  |  |  | 8-G-9 N-Q-1N-Q-3G-MGD-3RST11-12.9SL11-12.1.aSL11-12.1.c SL11-12.4 | PST 01.01PST 01.02PST 01.03PST 02.01PST 02.02PST 03.01PST 03.02PST 03.03PST 04.01PST 04.02PST 04.03PST 04.04 | **3** |
| 1. Apply principles of correct concrete construction procedures by making a concrete patio block.
 |  |  |  | 8-G-9 N-Q-1N-Q-3G-MGD-3RST11-12.9SL11-12.1.aSL11-12.1.c | PST 01.01PST 01.02PST 01.03PST 02.01PST 02.02PST 03.01PST 03.02PST 03.03PST 04.01PST 04.02PST 04.03PST 04.04 | **4** |
| **ASSESSMENT DESCRIPTIONS\*: (Write a brief overview here. Identify Formative/Summative. Actual assessments will be accessed by a link to PDF file or Word doc. )** Students will use common equipment, materials, and procedures to make a concrete patio block. To complete the project, students must make a form for the patio block; determine the volume of the form; calculate and mix the correct amount of Portland cement, sand, gravel, and water to fill the form; and cure the project.Assessment will be based on the overall quality of the work and the ability to safely and correctly complete the project within the available time.**\*Attach Unit Summative Assessment, including Scoring Guides/Scoring Keys/Alignment Codes and DOK Levels for all items. Label each assessment according to the unit descriptions above ( i.e., Grade Level/Course Title/Course Code, Unit #.)** |
| **Obj. #** | **INSTRUCTIONAL STRATEGIES (research-based): (Teacher Methods)**  |
| 1-7 | 1. Lecture, guest speaker, and demonstrations.
 |
| 1-8 | 1. Student application using various concrete techniques, materials and on sight characteristics.
 |
| **Obj. #** | **INSTRUCTIONAL ACTIVITIES: (What Students Do)** |
| 1-7 | 1. Students will engage in study questions in lessons 1 through 7.
 |
| 1-8 | 1. Students will complete “AS 1.1, Concrete Safety”; “AS 2.1, Mixing Concrete”; “AS 3.1, Subgrade Preparation”; “AS 3.2, Laying Out a Building”; “AS 3.1, Reinforcing Concrete”; “JS 5.1, Pouring a Concrete Curb”; “AS 6.1, Curing Concrete”; and “JS 7.1, Preparing Forms for a Concrete Wall.”
 |
|  | 1. Additional activities that relate to the unit objective can be found under the heading “Other Activities” in the following locations: p. IV-14 (1), p. IV-28 (1, 2), p. IV-46, and p. IV-68.
 |
| **UNIT RESOURCES: (include internet addresses for linking)*** *Agricultural Structures*. University of Missouri-Columbia, Instructional Materials Laboratory, 1999.
* Agriculture Publications. MU Extension. University of Missouri-Columbia. Accessed January 17, 2012, from <http://muextension.missouri.edu/explore/agguides/>.
* Cook, J. B., & Nickolaus, G. F. *Basic Procedures in Administration of Zoning Regulations: Appeals*. MU Extension. University of Missouri-Columbia. Accessed January 17, 2012, from <http://muextension.missouri.edu/explore/commdm/dm7613.htm>.
* Cook, J. B., & Nickolaus, G. F. *Basic Procedures in Administration of Zoning Regulations: Making Applications*. MU Extension. University of Missouri-Columbia. Accessed January 17, 2012, from <http://muextension.missouri.edu/explore/commdm/dm7612.htm>.
* Local regulatory agencies, such as the planning and development department, public works department, and county board of commissioners
 |