



WRITTEN EXAM

2024 GUIDANCE

Revised: 31 July 2025

ASSOCIATE SUPERINTENDENT CONTACT INFORMATION

Dr. Michael Pate
Utah State University, Logan, Utah
Telephone (435) 797-0989
Email: michael.pate@usu.edu

WRITTEN EXAM FORMAT

PLEASE READ THE FOLLOWING INSTRUCTIONS:

Mark all answers on the scan sheet using a pencil.

- The exam will consist of 25 questions - five for each skill area of the event. Each question is worth two points.
- The questions will be a mix of 3 math and 2 systems-based questions.
- You will have 60 minutes to complete this exam.
- You may write on the exam, but information on the exam will not be graded. Blank sheets of paper will be provided if additional calculation space or scratch paper is needed.
- If a diagram, picture, or table is needed to answer a question on another page, the question will refer to the appropriate figure/page.
- Read each question carefully and determine the single correct answer.
- If a mark on the scan sheet needs to be changed, completely erase the incorrect answer and clearly mark the appropriate answer on the answer sheet.
- Each student needs a calculator to complete this examination, but calculators may not be shared between students. And cell phone calculator apps cannot be used. Bring a calculator.
- Formulas and conversion values are provided. Do not round off intermediate answers when using the calculator to solve these problems.

COMPETENCIES

Agriculture, Food and Natural Resources Content Standards

- CS.03.03. Performance Indicator: Apply health and safety practices to AFNR worksites.
- PST.02.02. Operate machinery and equipment while observing all safety precautions in AFNR settings.

RESOURCES

Reference sheets

- Reference sheets specific to problems will be included with the exam.
- These may include tables, diagrams, pictures, formulas, and additional information.
- A reference sheet will be indicated within the specific question when a table, etc. is needed.

Reference Books

- Agricultural Technical Systems and Mechanics by Koel, Maur, Moniz & Radcliff, American Technical Publishers (ATP). (2nd Edition)
 - Chapter 2 Safety and health
 - Chapter 3 Hand tools
 - Chapter 7 fasteners
 - Chapter 10 concrete principles
 - Chapter 17 Plumbing

- Chapter 21 Electrical distribution systems
- Chapter 22 sustainable energy systems
- Agricultural Mechanics and Technology Systems, 2nd Edition, <https://www.g-w.com/agricultural-mechanics-technology-systems-2024>
 - Chapter 5 Safety
 - Chapter 8 power tools
 - Chapter 10 project planning and design
 - Chapter 19 fencing
 - Chapter 23 Electric motors and controls
 - Chapter 25 farm and landscape irrigation
 - Chapter 31 Gas tungsten arc welding
 - Chapter 37 hydraulic and pneumatic power

Students should be familiar with the rules in the current Agricultural Technology & Mechanical Systems CDE Handbook, which can be found in the [2024 Agricultural Technology and Mechanical Systems Handbook](#).