

Ag Mechanics and Power Systems Program Standards Criticality Survey 2018

1. Personal Qualities and People Skills				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
Demonstrate a positive work ethic by coming to work every day on time, a willingness to take direction, and motivation to accomplish the task at hand.	0	3	26	2.90
Demonstrate integrity by abiding by workplace policies and laws and demonstrating honesty and reliability.	0	3	26	2.90
Demonstrate teamwork skills by contributing to the success of the team, assisting others, and requesting help when needed.	0	13	16	2.55
Demonstrate positive self-representation skills by dressing appropriately and using language and manners suitable for the workplace.	0	14	15	2.52
Demonstrate diversity awareness by working well with all customers and co-workers.	3	7	19	2.55
Demonstrate conflict-resolution skills by negotiating diplomatic solutions to interpersonal and workplace issues.	3	15	11	2.28
Demonstrate creativity and resourcefulness by contributing new ideas and working with initiative.	3	20	6	2.10
Answered				29
Skipped				0

2. Professional Knowledge and Skills				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
Demonstrate effective speaking and listening skills by communicating effectively with customers and employees and following directions.	0	18	11	2.38
Demonstrate effective reading and writing skills by reading and interpreting workplace documents and writing clearly.	1	20	8	2.24
Demonstrate critical-thinking and problem-solving skills by analyzing and resolving problems that arise in completing assigned tasks.	1	10	17	2.57
Demonstrate healthy behaviors and safety skills by following safety guidelines and managing personal health.	4	14	11	2.24
Demonstrate understanding of workplace organizations, systems, and climates by identifying "big picture" issues and fulfilling the mission of the workplace.	0	19	10	2.34
Demonstrate lifelong-learning skills by continually acquiring new industry-related information and improving professional skills.	1	17	11	2.34
Demonstrate job acquisition and advancement skills by preparing to apply for a job and seeking promotion.	11	14	4	1.76
Demonstrate time, task, and resource management skills by organizing and implementing a productive plan of work.	1	19	9	2.28
Demonstrate mathematical skills by using mathematical reasoning to accomplish tasks.	9	16	4	1.83
Demonstrate customer service skills by identifying and addressing the needs of all customers and providing helpful, courteous, and knowledgeable service.	1	10	18	2.59
Answered				29
Skipped				0

3. Technology Knowledge and Skills				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
Demonstrate proficiency with job-specific technologies by selecting and safely using technological resources to accomplish work responsibilities in a productive manner.	3	10	16	2.45
Demonstrate proficiency with information technology by using computers, file management techniques, and software/programs effectively.	1	10	18	2.59
Demonstrate proper Internet use and security by using the Internet appropriately for work.	2	16	11	2.31
Demonstrate proficiency with telecommunications by selecting and using appropriate devices, services, and applications.	2	15	12	2.34
Answered				29
Skipped				0

CONTENT STANDARD 1.0: Occupational Safety and Health in Ag Mechanics				
Performance Standard 1.1: Safety Practices				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
1.1.1 Explain the importance of safety in agricultural mechanics.	0	12	14	2.54
1.1.2 Identify and differentiate between safe and unsafe work practices.	0	6	20	2.77
1.1.3 Describe the methods utilized to implement safe work practices.	1	11	14	2.50
1.1.4 Identify and explain the purpose of signals and symbols in agricultural safety.	4	12	10	2.23
1.1.5 Explain the importance and function of safety training.	2	14	10	2.31
1.1.6 Evaluate the importance of occupational safety and health in agriculture mechanics.	3	10	13	2.38
1.1.7 Identify and explain the role that various agencies play in regulating safety.	11	12	3	1.69
1.1.8 Identify and demonstrate the proper use of personal protection equipment (PPE).	1	7	18	2.65
1.1.9 Locate and demonstrate the proper uses of the first aid and emergency equipment.	1	14	11	2.38
1.1.10 Maintain a general safe working environment.	0	9	17	2.65
1.1.11 Demonstrate the proper disposal of hazardous waste.	2	12	12	2.38
1.1.12 Read and understand safety data sheets (SDS).	6	13	7	2.04
Answered				26
Skipped				3

CONTENT STANDARD 2.0: TOOLS AND HARDWARE				
Performance Standard 2.1: Safe and Proper Use of Tools				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
2.1.1 Determine which hand tool, power tool and measuring and marking devices are most appropriate for a job.	1	11	14	2.50
2.1.2 Identify and safely use of hand and power tools utilized in agricultural mechanics.	1	10	15	2.54
2.1.3 Identify and properly use measuring and marking tools.	2	16	7	2.20
2.1.4 Measure and apply metric to standard measurement conversions.	8	14	4	1.85
2.1.5 Inspect and maintain tools.	3	12	11	2.31
Answered				26
Skipped				3

Performance Standard 2.2: Hardware and Fasteners				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
2.2.1 Identify and select proper common hardware and fasteners.	4	18	4	2.00
Answered				26
Skipped				3

CONTENT STANDARD 3.0: METAL TECHNOLOGY				
Performance Standard 3.1: Welding				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
3.1.1 Demonstrate proper safety practices working with metal technology.	6	12	8	2.08
3.1.2 Determine uses of metal.	9	15	2	1.73
3.1.3 Identify types of metal and the proper welding technique.	12	13	1	1.58
3.1.4 Recognize properties of metal.	15	10	1	1.46
3.1.5 Properly select and use oxy-fuel equipment.	5	16	5	2.00
3.1.6 Properly select and use shielded metal arc welding equipment.	8	16	2	1.77
3.1.7 Properly select and use gas metal arc welding equipment.	8	15	3	1.81
3.1.8 Properly select and use gas tungsten arc welding equipment.	15	9	2	1.50
3.1.9 Properly select and use plasma cutting equipment.	13	11	2	1.58
3.1.10 Properly select welding consumables (i.e. wire, electrode, gas and filler rod).	10	14	2	1.69
Answered				26
Skipped				3

Performance Standard 3.2: Cold Metal Work				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
3.2.1 Read metal working plans.	17	8	1	1.38
3.2.2 Properly cut threads with tap and die.	7	18	1	1.77
3.2.3 Join metal by riveting.	15	10	0	1.40
3.2.4 Properly thread steel pipe.	14	11	1	1.50
3.2.5 Layout holes and drill holes using a twist drill.	10	16	0	1.62
3.2.6 Bend sheet and strap metal to angles and/or shapes.	18	8	0	1.31
Answered				26
Skipped				3

CONTENT STANDARD 4.0: POWER SYSTEMS				
Performance Standard 4.1: Engines Technology				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
4.1.1 Identify the operating principles of internal combustion engines.	0	9	17	2.65
4.1.2 Explain the function and operating principles of the fuel, lubrication, governor, and ignition systems.	0	12	14	2.54
4.1.3 Locate technical information in electronic and print form.	1	5	20	2.73
4.1.4 Troubleshoot and maintain engines.	0	8	18	2.69
Answered				26
Skipped				3

Performance Standard 4.2: Electric Motors				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
4.2.1 Select motors based on type of application.	10	12	4	1.77
Answered				26
Skipped				3

Performance Standard 4.3: Agricultural Machinery				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
4.3.1 Identify and perform basic equipment maintenance on agricultural machinery.	0	10	15	2.60
4.3.2 Use mathematics to solve equipment calibration problems.	5	10	11	2.23
4.3.3 Demonstrate converting common units of measure found in agriculture.	7	10	9	2.08
Answered				26
Skipped				3

Performance Standard 4.4: Hydraulics				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
4.4.1 Identify the parts and functions of the hydraulic systems.	0	8	18	2.69
4.4.2 Identify the applications of hydraulics in agriculture.	0	8	18	2.69
Answered				26
Skipped				3

CONTENT STANDARD 5.0: ELECTRICITY				
Performance Standard 5.1: Basic Electrical Principles				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
5.1.1 Demonstrate proper safety practices when working with electricity. Define basic electrical terminology; identify and explain the basic principles of electricity.	0	9	16	2.64
5.1.2 Recognize electrical code requirements for wiring.	7	10	9	2.08
5.1.3 Plan and install an electrical circuit.	5	13	8	2.12
5.1.4 Measure electrical circuits for voltage, current flow, resistance, and wattage.	0	8	18	2.69
5.1.5 Trouble-shoot electrical circuits.	0	4	22	2.85
5.1.6 Describe the relationship of volts, amps, and ohms in terms of Ohm's Law.	2	12	12	2.38
Answered				26
Skipped				3

CONTENT STANDARD 6.0: MATHEMATICAL APPLICATIONS				
Performance Standard 6.1: Mathematical Applications in Agriculture Mechanics & Power Systems				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
6.1.1 Perform mathematical operations for whole numbers, fractions, decimals, ratios, percentages, and rounding (significant figures).	7	14	4	1.88
6.1.2 Demonstrate converting common units of measure found in agriculture.	8	14	4	1.85
6.1.3 Explain the meaning of accuracy verses precision.	12	11	3	1.65
6.1.4 Use mathematics to solve equipment calibration problems.	6	13	7	2.04
Answered				26
Skipped				3

CONTENT STANDARD 7.0: INSULATION				
Performance Standard 7.1: Insulation				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
7.1.1 Explain the importance of insulation.	17	9	0	1.35
7.1.2 Explain the theory behind insulation.	20	6	0	1.23
7.1.3 Identify and select insulation materials.	18	7	1	1.35
Answered				26
Skipped				3

CONTENT STANDARD 8.0: EMERGING TECHNOLOGIES				
Performance Standard 8.1: Emerging Technologies in Ag Systems				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
8.1.1 Identify uses of precision and emerging technology in agriculture.	3	8	14	2.44
8.1.2 Understand the potential applications of new technology in agriculture.	3	8	14	2.44
Answered				25
Skipped				4

CONTENT STANDARD 9.0: CAREERS				
Performance Standard 9.1: Careers in Ag Mechanics				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
9.1.1 Research potential careers in ag mechanics.	6	13	7	2.04
9.1.2 Demonstrate employability skills for a career in ag mechanics industry.	3	14	9	2.23
9.1.3 Research additional industry certifications available.	7	15	4	1.88
Answered				26
Skipped				3

CONTENT STANDARD 10.0: LEADERSHIP TRAINING THROUGH AGRICULTURAL EDUCATION				
Performance Standard 10.1: Effective Leadership and Leadership Training				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
10.1.1 Expand leadership experience by participating in a chapter activity.	16	9	1	1.42
10.1.2 Participate in a career development event at the local level or above.	15	10	1	1.46
10.1.3 Exhibit leadership skills by demonstrating proper parliamentary procedure.	21	4	1	1.23
10.1.4 Participate in a speech or presentation activity.	15	10	0	1.40
Answered				26
Skipped				3

Performance Standard 10.2: School and Community Awareness				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
10.2.1 Participate in a school improvement or community development project.	17	9	0	1.35
Answered				26
Skipped				3

CONTENT STANDARD 11.0: SUPERVISED AGRICULTURAL EXPERIENCE				
Performance Standard 11.1: Maintain a Supervised Agricultural Experience				
Answer Choices	Nice to Know	Need to Know	Critical to Know	Rating Average
11.1.1 Accurately maintain SAE record books.	18	8	0	1.31
11.1.2 Investigate the proficiency award areas related to SAE program area.	20	6	0	1.23
11.1.3 Actively pursue necessary steps to receive higher degrees in FFA.	18	8	0	1.31
Answered				26
Skipped				3