Cluster Knowledge and Skill Statement

Academic Foundations

Statement: Achieve specific academic knowledge and skills required to pursue the full range of career and post-secondary education opportunities within AFNR.

Performance Element: Pass certification tests to meet state academic standards and qualify for selected fields of study.

- Measurement Criteria: Achieve an acceptable score on the State tests.
- Measurement Criteria: Explain what types of skills or knowledge are necessary to work in a specific field of study.
- Measurement Criteria: Know what type of degree or certification is required to enter a desired job/career.

Performance Element: Be proficient in using a variety of resources for both research and development.

- Measurement Criteria: Conduct informational searches.
- Measurement Criteria: Define what types of resources are appropriate for locating scholarly and academic information.
- Measurement Criteria: Analyze materials to determine their value for research and development areas.
Agriculture, Food and Natural Resources

Cluster Knowledge and Skill Statement

Communications

Statement: Use oral and written communication skills in creating, expressing and interpreting information and ideas including technical terminology and information within AFNR.

Performance Element: Develop good reading skills to enable reading of technical materials with understanding and fluency.

Measurement Criteria: Comprehend a broad range of reading materials containing technical concepts, knowledge and vocabulary to better handle written and electronic information.

Measurement Criteria: Use reading strategies (e.g., word analysis) to expand understanding and fluency.

Measurement Criteria: Locate, organize and reference written information from various sources (books, journals, magazines, Internet) to answer questions, solve problems, and develop written and oral communication.

Performance Element: Compose written material to present technical information.

Measurement Criteria: Compose multi-paragraph writing containing technical concepts, knowledge and vocabulary to complete an effective document.

Measurement Criteria: Develop and incorporate tables, charts, graphs and figures to support written and oral communications.

Measurement Criteria: Use information technology to design, produce and present written and multimedia materials.

Performance Element: Listen effectively to learn in both formal and informal situations.

Measurement Criteria: Appreciate personality preferences to achieve full meaning in processing and sharing information.

Measurement Criteria: Recognize the meanings of posturing to interpret nonverbal communications and messages.

Measurement Criteria: Apply active listening skills to obtain information and clarify oral communications.

Performance Element: Develop speaking skills to present information orally in formal and informal situations.

Measurement Criteria: Access a broad range of technical concepts, knowledge and vocabulary to develop and deliver formal presentations and to use in informal discussions.

Measurement Criteria: Apply human relations skills to contribute effectively to group discussions and meetings.

Performance Element: Write clearly to communicate written ideas, results and questions to all types of people.

Measurement Criteria: Write with effective language to produce written communications for journals, newsletters, or other informative articles.

Measurement Criteria: Explain aspects of the industry to people not involved in it, and discuss its components.
Cluster Knowledge and Skill Statement

Performance Element: Know how to orally communicate clearly and effectively to have dialogue with members of an example career field.

  Measurement Criteria: Monitor different kinds of behavior in order to improve communication.

  Measurement Criteria: Prepare presentations to explain to both large groups and individuals issues of concern to the industry.

  Measurement Criteria: Discuss aspects of the industry competently to an audience of both professionals and people not involved in the industry.

Statement: Employ technical communications effectively to maintain good records and reporting procedures.

Performance Element: Use technical communications to document work and processes.

  Measurement Criteria: Record technical information.

  Measurement Criteria: Compose technical reports.

  Measurement Criteria: Communicate documentation to others.
Cluster Knowledge and Skill Statement

Problem Solving and Critical Thinking

Statement: Solve problems using critical thinking skills (e.g., analyze, synthesize and evaluate) independently and in teams.

Performance Element: Formulate and evaluate ideas, proposals and solutions to handle problems.

Measurement Criteria: Formulate ideas and proposals to solve problems.

Measurement Criteria: Analyze and evaluate ideas, proposals and solutions to manage a variety of problems.

Performance Element: Use structured problem-solving methods to improve the performance of organizational and technological systems.

Measurement Criteria: Use a structured problem-solving process to develop solutions to performance problems.

Performance Element: Analyze information critically and judiciously to ascertain its value to whatever discipline it is applied.

Measurement Criteria: Explain how to analyze, synthesize and evaluate information and apply its implications to a variety of avenues.

Measurement Criteria: Assess problem solutions to determine their appropriateness and efficiency.

Performance Element: Synthesize elements in a problem to come up with a creative solution.

Measurement Criteria: Break large problems down into smaller ones to solve them individually.

Measurement Criteria: Recognize problems to control or solve them as efficiently as possible.

Statement: Access suitable resources to identify public policies, issues and regulations impacting AFNR management.

Performance Element: Review regulations and major laws to evaluate their impact on AFNR management.

Measurement Criteria: Describe the major impacts of the AFNR acts.

Measurement Criteria: Describe the major regulations impacting the management of an individual resource.

Measurement Criteria: Identify situations that violate regulations.

Performance Element: Read appropriate written material to stay abreast of current issues impacting AFNR management.

Measurement Criteria: Identify significant issues that impact work assignment.

Performance Element: Gather public input for AFNR management decision-making.

Measurement Criteria: Conduct a local survey of public perceptions and desires concerning AFNR issues.

Performance Element: Use critical thinking skills to identify, organize alternatives, and evaluate public policy issues related to AFNR.

Measurement Criteria: Identify alternatives to an issue’s potential solution.

Measurement Criteria: Evaluate alternatives for strengths and weaknesses.

Measurement Criteria: Recommend a solution based on research and analysis.
Cluster Knowledge and Skill Statement

Information Technology Applications

Statement: Use information technology tools specific to AFNR to access, manage, integrate and create information.

Performance Element: Use Personal Information Management (PIM)/productivity applications.
  Measurement Criteria: Manage personal schedule and contact information.
  Measurement Criteria: Create memos and notes.

Performance Element: Use electronic mail applications.
  Measurement Criteria: Understand and identify the functions and purpose of e-mail systems.
  Measurement Criteria: Use e-mail to communicate within and across organizations.

Performance Element: Use Internet applications.
  Measurement Criteria: Search for and access information.

Performance Element: Use writing/publishing applications.
  Measurement Criteria: Prepare simple reports and other business communications.
  Measurement Criteria: Prepare complex reports and other business communications, integrating graphics and other non-text elements.

Performance Element: Use presentation applications.
  Measurement Criteria: Prepare and deliver presentations for training, sales and information sharing.

Performance Element: Use spreadsheet applications.
  Measurement Criteria: Perform calculations and analysis on data.

Performance Element: Use database applications.
  Measurement Criteria: Manage, analyze and report on interrelated data elements.

Performance Element: Use collaborative/groupware applications.
  Measurement Criteria: Facilitate group work through management of shared schedule and contact information.
  Measurement Criteria: Facilitate group work through management of shared files and online information.

  Measurement Criteria: Create maps.
  Measurement Criteria: Locate people or things.
  Measurement Criteria: Identify best route for travel.

Performance Element: Use computer operations applications.
  Measurement Criteria: Manage computer operations.
  Measurement Criteria: Manage file storage.
  Measurement Criteria: Compress or alter files.

Performance Element: Use computer-based equipment (containing embedded computers [or processors] used to control electromechanical devices).
  Measurement Criteria: Operate computer-driven equipment and machines.
  Measurement Criteria: Use installation and operation manuals.
  Measurement Criteria: Troubleshoot computer-driven equipment and machines and access support as needed.
Cluster Knowledge and Skill Statement

**Systems**

Statement: Understand roles within teams, work units, departments, organizations, interorganizational systems, and the larger environment.

Performance Element: Examine company performance and goals to appreciate AFNR organizations and the AFNR industry.

**Measurement Criteria:** Examine the role and major functions of AFNR organizations to better utilize AFNR guidelines.

**Measurement Criteria:** Explain the major guidelines used by AFNR organizations to manage and improve performance.

**Measurement Criteria:** Examine economic, social and technological changes to spotlight their impact on AFNR organizations and the industry.

**Measurement Criteria:** Explain technological changes to reveal their impact on information technology and transportation.

Statement: Identify how key organizational systems affect organizational performance and the quality of products and services.

Performance Element: Manage and improve organizational systems to better serve customers.

**Measurement Criteria:** Evaluate customer needs to manage relationships with both internal and external customers.

**Measurement Criteria:** Develop and manage plans and budgets to accomplish organizational goals and objectives.

**Measurement Criteria:** Develop plans to improve organizational performance including customer satisfaction and service/operations performance.

**Measurement Criteria:** Develop plans to maintain compliance with organizational policies and government laws and regulations.

Performance Element: Know the components of each agricultural, natural resource, and environmental system to address their maintenance requirements.

**Measurement Criteria:** Develop management plans to improve the agricultural and natural resource systems.

**Measurement Criteria:** Determine goals and objectives for each system to manage organizational activities more effectively.

**Measurement Criteria:** Prepare and operate systems and technical tools to access, manage, integrate, evaluate and create information.

Performance Element: Research geographical data to recognize the types of systems used in various geographical areas.

**Measurement Criteria:** Evaluate the effects of implementing practices to advance a system.

**Measurement Criteria:** Explore multi-area trends to explain how systems differ across geographical areas.
Cluster Knowledge and Skill Statement

Safety, Health, and Environmental

Statement: Understand the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance.

Performance Element: Examine required regulations to maintain/improve safety, health and environmental management systems.

Measurement Criteria: Study appropriate resources to identify the major regulatory areas (e.g., personal protective equipment) and government laws and regulations.

Measurement Criteria: Examine the major system components to realize benefits of health, safety and environmental management systems in AFNR organizations.

Measurement Criteria: Measure or estimate benefits to explain how government agencies promote compliance and improved health, safety and environmental performance to AFNR organizations.

Measurement Criteria: Examine logistics, distribution and transportation organizations to explain how AFNR organizations promote improved health, safety and environmental performance.

Performance Element: Develop a plan to maintain and improve health, safety and environmental compliance and performance.

Measurement Criteria: Make a personal commitment to safety, health and environmental policies and procedures.

Measurement Criteria: Develop plans to improve health, safety and environmental performance.

Measurement Criteria: Educate and orient other workers.

Performance Element: Stress the importance of safety, health and environmental responsibilities in the workplace to provide operating guidelines.

Measurement Criteria: Establish a set of safety, health and environmental principles to ensure a high level of performance.

Measurement Criteria: Develop a pollution/waste prevention plan to contribute to the total productivity improvement.

Performance Element: Examine health risks associated with a particular skill to better form personnel safety guidelines.

Measurement Criteria: Define what level of possible contamination or injury is considered a risk in order to set safety priorities.

Measurement Criteria: Assess mental and physical stresses to determine all aspects necessary to perform well and what health risks are associated with both the mental and physical aspects.

Statement: Identify health goals and safety procedures for AFNR occupations.

Performance Element: Apply safety/health precautions to participation in natural resource projects.

Measurement Criteria: Wear personal protective equipment.

Measurement Criteria: Demonstrate how to avoid placing oneself in hazardous work situations.
Performance Element: Demonstrate recognized first aid knowledge and procedures to show how they are used by natural resource industries.

Measurement Criteria: Complete recognized industry-level first aid training program.

Performance Element: Identify health/safety policies and procedures for natural resource occupations.

Measurement Criteria: Participate in safety meetings.
Measurement Criteria: Describe the health and safety policies and procedures relevant to the worksite and assignment.

Statement: Demonstrate appropriate health and safety procedures for AFNR occupations.

Performance Element: Develop response plans to handle emergencies.

Measurement Criteria: Identify various emergency response plan requirements for a facility.
Measurement Criteria: Develop an emergency response plan for natural disasters.

Performance Element: Identify hazards and acquire first aid skills to promote environmental safety.

Measurement Criteria: Identify general workplace safety hazards.
Measurement Criteria: Apply general workplace safety precautions/procedures.
Measurement Criteria: Acquire and maintain first aid certification.
Measurement Criteria: Acquire and maintain cardiopulmonary resuscitation (CPR) certification.
Measurement Criteria: Respond to medical emergencies.
Measurement Criteria: Explain purpose of pollution control systems.
Measurement Criteria: Describe procedures to comply with environmental regulations.
Measurement Criteria: Maintain environmental health and safety facilities.
Measurement Criteria: Handle chemicals and safety equipment appropriately.
Measurement Criteria: Explain ergonomic procedures.
Measurement Criteria: Assess workplace safety.
Measurement Criteria: Observe all regulatory and safety standards.
Cluster Knowledge and Skill Statement

Leadership and Teamwork

Statement: Use leadership skills in collaborating with others to accomplish organizational goals and objectives.

Performance Element: Embrace empowerment, risk, communication, focusing on results, decision-making, problem solution, investment in individuals, and resource use and access to develop premier leadership.

Measurement Criteria: Work independently and in group settings to get things done.
Measurement Criteria: Focus on results.
Measurement Criteria: Plan effectively.
Measurement Criteria: Identify and use resources.
Measurement Criteria: Communicate effectively with others.
Measurement Criteria: Take risks to get the job done.
Measurement Criteria: Invest in other by enabling and empowering them.
Measurement Criteria: Learn from mistakes and deal with setbacks.
Measurement Criteria: Evaluate and reflect on action taken (i.e., make appropriate improvements).

Performance Element: Embrace compassion, service, listening, coaching, developing others, team development, and understanding and appreciating others to develop premier leadership.

Measurement Criteria: Practice the human relations skills of compassion, empathy, unselfishness, trustworthiness, reliability and listening.
Measurement Criteria: Interact and work with others.
Measurement Criteria: Develop others.
Measurement Criteria: Eliminate barriers in building relationships.
Measurement Criteria: Participate effectively as a team member.
Measurement Criteria: Understand, accept, and appreciate others and their contributions.
Measurement Criteria: Practice servant leadership.

Performance Element: Embrace enthusiasm, creativity, the future, conviction, mission, courage, concept, focus, principles and change to develop premier leadership.

Measurement Criteria: Contemplate the future.
Measurement Criteria: Persuade others to commit.
Measurement Criteria: Demonstrate courage to take risks.
Measurement Criteria: Live by personal mission.
Measurement Criteria: Act as an agent of change.
Measurement Criteria: Adapt to opportunities and obstacles.
Measurement Criteria: Conceptualize ideas.
Cluster Knowledge and Skill Statement

Performance Element: Embrace integrity, courage, values, ethics, humility, perseverance, self-discipline, and responsibility to develop premier leadership.

- **Measurement Criteria:** Demonstrate virtuous behavior.
- **Measurement Criteria:** Assess own values accurately.
- **Measurement Criteria:** Live with integrity.
- **Measurement Criteria:** Practice self-discipline.
- **Measurement Criteria:** Respect others.
- **Measurement Criteria:** Accept diversity of ideas and opinions.
- **Measurement Criteria:** Accept responsibility for personal actions.
- **Measurement Criteria:** Value service to others.

Performance Element: Include self, community, diversity, environment, global awareness and knowledge to develop premier leadership.

- **Measurement Criteria:** Participate in issues important to the community.
- **Measurement Criteria:** Perform leadership tasks associated with citizenship.
- **Measurement Criteria:** Apply knowledge gained from a study of trends and issues.
- **Measurement Criteria:** Study local, state, national and global issues.
- **Measurement Criteria:** Participate in activities that promote acceptance of diversity.
- **Measurement Criteria:** Use assessment tools to gain knowledge of oneself.

Performance Element: Embrace innovation, intuition, adaptation, life-long learning and coachability to develop premier leadership.

- **Measurement Criteria:** Implement a leadership and personal growth plan.
- **Measurement Criteria:** Seek counsel from others.
- **Measurement Criteria:** Use innovative problem-solving strategies.
- **Measurement Criteria:** Adapt to emerging technologies.
- **Measurement Criteria:** Evaluate personal growth plans on a continual basis.
- **Measurement Criteria:** Implement a plan for acquiring new knowledge.

Statement: Use personal growth skills in collaborating with others to accomplish organizational goals and objectives.

Performance Element: Embrace attitude, exercise, goal-setting, planning, self-discipline, sense of balance, persistence and respect to develop personal growth.

- **Measurement Criteria:** Practice healthy eating habits.
- **Measurement Criteria:** Respect one’s own body.
- **Measurement Criteria:** Participate in a fitness program.
- **Measurement Criteria:** Set goals for long-term health.
- **Measurement Criteria:** Discipline self to lead an active, healthy life.
Cluster Knowledge and Skill Statement

Performance Element: Embrace friendship, integrity, morals, values, etiquette, citizenship, cross-cultural awareness, acceptance/change, and respect for differences to develop personal growth.

- **Measurement Criteria:** Accept those different from self.
- **Measurement Criteria:** Use proper social graces.
- **Measurement Criteria:** Communicate effectively in groups.
- **Measurement Criteria:** Relate to people across generations.
- **Measurement Criteria:** Develop friendships.
- **Measurement Criteria:** Maintain long-term relationships.
- **Measurement Criteria:** See self in a positive way.
- **Measurement Criteria:** Cope with life’s trials.

Performance Element: Embrace goal-setting, planning, decision-making, principles, respect, attitude, dependability, loyalty, trustworthiness and communication to develop personal growth.

- **Measurement Criteria:** Plan and implement professional goals and set priorities.
- **Measurement Criteria:** Make clear decisions in one’s professional life.
- **Measurement Criteria:** Demonstrate professional ethics.
- **Measurement Criteria:** Communicate clearly.
- **Measurement Criteria:** Balance professional and personal responsibilities.
- **Measurement Criteria:** Demonstrate exemplary employability skills.

Performance Element: Embrace learning, critical thinking, reasoning, creative thinking, attitude, dependability, decision-making and problem-solving to develop personal growth.

- **Measurement Criteria:** Think critically.
- **Measurement Criteria:** Think creatively.
- **Measurement Criteria:** Practice sound decision-making.
- **Measurement Criteria:** Solve problems.
- **Measurement Criteria:** Commit to life-long learning.
- **Measurement Criteria:** Articulate opinions to persuade others.
- **Measurement Criteria:** Practice sound study skills.
- **Measurement Criteria:** Maximize mental assets and compensate for mental limitations.

Performance Element: Embrace attitude, self-discovery, coping, friendship, self-reliance, sense of balance, empathy, compassion, and integrity to develop personal growth.

- **Measurement Criteria:** Demonstrate coping skills.
- **Measurement Criteria:** Live a compassionate and selfless life.
- **Measurement Criteria:** Develop self-assurance and confidence.
- **Measurement Criteria:** Embrace the maturation process.
- **Measurement Criteria:** Establish emotional integrity.
- **Measurement Criteria:** Seek appropriate counsel.
- **Measurement Criteria:** Know emotional self.
Cluster Knowledge and Skill Statement

Performance Element: Embrace ethics, coping, courage, attitude, self-image/worth, values, principles and sense of balance to develop personal growth.

**Measurement Criteria:** Be respectful and sensitive of others’ beliefs.

**Measurement Criteria:** Lead a principle-centered life based on values.

**Measurement Criteria:** Value yourself and others.

**Measurement Criteria:** Practice self-reflection.

**Measurement Criteria:** Discover and nurture a belief system.
Cluster Knowledge and Skill Statement

Ethics and Legal Responsibilities

**Statement:** Know and understand the importance of professional ethics and legal responsibilities.

Performance Element: Apply knowledge of professional and workplace ethics and legal responsibilities to organize guidelines for workplace conduct.

**Measurement Criteria:**
- Demonstrate awareness of legal responsibilities for different roles and functions within organizations.
- Access appropriate references to recognize differences in ethical and legal responsibilities.

Performance Element: Apply ethical and legal reasoning to workplace situations.

**Measurement Criteria:**
- Apply ethical reasoning to different workplace situations.
- Identify strategies for responding to unethical or illegal actions of individuals and organizations.

Performance Element: Review appropriate resources to identify national and international rules associated with a desired career.

**Measurement Criteria:**
- Research local, state, and national sources to identify the legal bodies that regulate the desired career.
- Research library and Internet sources to find national and international regulations that affect day-to-day operations in a desired career area.

Performance Element: Identify what ethical issues and concerns affect a desired career field to assist in making career decisions.

**Measurement Criteria:**
- Observe ethical behavior in the workplace to appreciate the integral role it plays in all business.
- Discuss ethical responsibilities in the workplace to establish guidelines for personnel/client relationships.

**Statement:** Demonstrate workplace ethics specific to AFNR occupations.

Performance Element: Evidence interest and concern to demonstrate natural resource stewardship and ethics.

**Measurement Criteria:** Explain how personal choices are related to natural resource sustainability.

Performance Element: Exercise personal habits and actions to demonstrate workplace ethics.

**Measurement Criteria:** Explain how personal workplace actions can affect the resource.
Cluster Knowledge and Skill Statement

Employability and Career Development

**Statement:** Know and understand the importance of employability skills.

**Performance Element:** Apply critical thinking skills and decision-making to exhibit qualifications for entering a career.

**Measurement Criteria:** Explain written organizational policies, rules and procedures to guide employees in workplace behavior.

**Measurement Criteria:** Identify and demonstrate positive work behaviors and personal qualities required to uphold quality standards.

**Measurement Criteria:** Relate critical thinking skills in workplace situations to decision-making, creativity and quality performance.

**Performance Element:** Identify career opportunities to help develop career plans.

**Measurement Criteria:** Identify and explore career opportunities in one or more career pathways to discover personal preferences.

**Measurement Criteria:** Develop career plans for career opportunities.

**Statement:** Explore, plan and effectively manage personal career options.

**Performance Element:** Manage employment relations to hunt for and land a job.

**Measurement Criteria:** Seek, apply for, and accept employment to begin career objectives.

**Measurement Criteria:** Evaluate and compare employment opportunities to find the best job available based on sensible expectations.

**Performance Element:** Know the standards and qualifications that must be met in order to enter a given industry.

**Measurement Criteria:** Discuss employability in a given industry and factors that affect it in order to evaluate salaries and opportunities.

**Measurement Criteria:** Organize an educational plan to acquire the skills needed in order to join an industry of choice.

**Performance Element:** Understand how advancement and the promotional ladder work within an industry to plan career objectives.

**Measurement Criteria:** Determine the chain of command for a particular industry to evaluate your personal skills and potential.

**Measurement Criteria:** Explain what projects need to be accomplished or what skills need to be acquired to gain a promotion.
Cluster Knowledge and Skill Statement

Technical Skills

Statement: Use the technical knowledge and skills required to pursue the full range of careers for all AFNR pathways, including knowledge of design, operation, and maintenance of technological systems critical to AFNR careers.

Performance Element: Use technological systems to accomplish objectives in transportation.
   Measurement Criteria: Evaluate transportation needs to explain the role and function of critical transportation-related technological systems.
   Measurement Criteria: Measure and manage the reliability and performance of technological systems to establish use and maintenance guidelines.
   Measurement Criteria: Manage major health, safety and environmental risks to minimize their potential impact on technological systems.

Performance Element: Select and improve utilization of technological systems to improve production and products.
   Measurement Criteria: Develop acceptable criteria to evaluate and select technological systems.
   Measurement Criteria: Participate in efforts to improve the utilization and performance of technological systems.

Performance Element: Identify technical skills needed to run an industry efficiently.
   Measurement Criteria: Identify types of skills needed to succeed in a desired industry.
   Measurement Criteria: Explore methods available to develop technical skills.
   Measurement Criteria: Correctly operate the tools associated with a specific skill.

Performance Element: Establish criteria to identify areas that have special needs for technical skills.
   Measurement Criteria: Classify workplace occupations to determine what types of skills are considered technical skills.
   Measurement Criteria: Evaluate processes and products to determine what areas most often use technical skills.

Statement: Use tools, equipment, machinery and technology to work in areas related to AFNR.

Performance Element: Select the appropriate tool to perform a given task.
   Measurement Criteria: Select tools and equipment.
   Measurement Criteria: Identify standard tools, equipment, and safety procedures.
   Measurement Criteria: Follow operating instructions.
   Measurement Criteria: Set up/Adjust tools and equipment.
   Measurement Criteria: Maintain tools.
   Measurement Criteria: Store tools.

Performance Element: Keep natural resource tools in good working order for efficient work use.
   Measurement Criteria: Demonstrate how to check tool condition before use.
   Measurement Criteria: Describe the characteristics of a tool in need of maintenance.
   Measurement Criteria: Demonstrate how to replace tool parts and components as needed.
Performance Element: Wear protective equipment and handle natural resource tools and equipment with skill to demonstrate safe use of tools and equipment.

   Measurement Criteria: Wear appropriate personal protective equipment (PPE).
   Measurement Criteria: Demonstrate proper spacing distance from others when using tools.
   Measurement Criteria: Check tools for safety before using.
   Measurement Criteria: Store tools with appropriate safety precautions.
   Measurement Criteria: Demonstrate the proper usage of a tool or piece of equipment.
   Measurement Criteria: Describe regulations for the use of tools and equipment.

Performance Element: Use tools and assisting devices to demonstrate the use of technology to expand human capacity for natural resource tasks.

   Measurement Criteria: Use appropriate tools to assist in lifting and moving.
   Measurement Criteria: Demonstrate use of knots, ropes, lines and attachments.
   Measurement Criteria: Use geo-spatial and mapping techniques (GIS/GPS).

Performance Element: Select the appropriate tool to accomplish a given task.

   Measurement Criteria: Demonstrate the ability to select the appropriate tool to complete the work assignment.

Performance Element: Maintain tools for efficient work use.

   Measurement Criteria: Demonstrate how to check tool condition before use.
   Measurement Criteria: Describe the characteristics of a tool in need of maintenance.
   Measurement Criteria: Demonstrate how to replace tool parts and components as needed.
   Measurement Criteria: Maintain a preventive maintenance schedule.
   Measurement Criteria: Maintain equipment according to owner’s manual specifications.
   Measurement Criteria: Maintain and repair pump.

Performance Element: Wear protective equipment and observe safety and operational guidelines to use tools and equipment effectively.

   Measurement Criteria: Wear appropriate personal protective equipment (PPE).
   Measurement Criteria: Check tools for safety before using.
   Measurement Criteria: Store tools with appropriate safety precautions.
   Measurement Criteria: Describe regulations for the use of tools and equipment.
   Measurement Criteria: Operate vehicles (pickup trucks, four-wheel-drive vehicles, tractors, vehicles with attachments, rig-up trucks, graders, backhoe tractors, front-end loaders, excavators, scrappers, cranes, watercraft).
   Measurement Criteria: Operate applicable pumps (diesel and gas engines, centrifugal pumps, positive displacement pumps, air and gas compressors).
   Measurement Criteria: Operate applicable miscellaneous equipment (hoists, winches, pulleys, boilers and associated equipment, drilling equipment).

Statement: Compare and contrast issues affecting the AFNR industry, biotechnology, employment, safety, environmental, animal welfare.

Performance Element: Determine, analyze and present solutions for different environmental issues.

   Measurement Criteria:
Cluster Knowledge and Skill Statement

Measurement Criteria: Identify issues affecting the industry.
Measurement Criteria: Research history and policies related to the issue.
Measurement Criteria: Identify conflicting points of view.
Measurement Criteria: Determine effects of the issue on the industry.
Measurement Criteria: Determine potential resolutions to the issue.

Performance Element: Learn economic principles in order to apply them to natural resource systems (i.e., supply, demand and profit).

Measurement Criteria: Describe the effect of compound interest on natural resource investments.
Measurement Criteria: Describe the economic impacts of natural resource preservation vs. use of the resource.
Measurement Criteria: Describe the potential for entrepreneurial opportunities in natural resources.
Measurement Criteria: Describe the impacts of natural resource decisions on global markets and environmental health.

Performance Element: Apply skills with computer software to accomplish a variety of business activities.

Measurement Criteria: Demonstrate understanding of operating and design software systems; e.g., CAD, Windows.
Measurement Criteria: Discuss and use basic software such as spreadsheet, word processing.
Measurement Criteria: Show ability to perform software installation.
Measurement Criteria: Show ability to use diagnostic program.

Performance Element: Access the Internet and use e-mail to demonstrate the ability to network and interface with technology.

Measurement Criteria: Demonstrate general understanding of local area network.
Measurement Criteria: Navigate global Internet sites as a resource.
Measurement Criteria: Demonstrate skills in linking information from various sources.
Measurement Criteria: Show competency with e-mail and wireless communications.

Statement: Envision emerging technology and globalization to project its influence on widespread markets.

Performance Element: Examine new technologies to project their impact in the global market of technology.

Measurement Criteria: Convert drawings from US Standard to metric.
Measurement Criteria: Identify ways that global regulations impact system designs.
Measurement Criteria: Identify and discuss use of new technologies (such as lasers and robotics) and their impact on agricultural systems.
Measurement Criteria: Discuss the importance of new communication systems and how they impact ag systems.

Performance Element: Relate the advance of technology to the need for Continuing Education/Career Development.

Measurement Criteria: Research and discuss emerging technologies and the skills they require.
Measurement Criteria: Discuss history of systems over the last century and discuss how emerging technology and career training will be essential to meet market demands.