

Standards & Measurement Criteria

Agricultural Business Management-Agriscience

Environmental Service Systems - Option G

SAE and FFA Integrated Skills (Options A-G)

CIP No. 01.0100

These standards are to be integrated into all courses within this program and not taught separately.

1.0 DEVELOP A PLAN FOR A CAREER IN AGRICULTURAL BUSINESS AND MANAGEMENT

- 1.1 Analyze the variety of career options in: agribusiness systems; animal systems; environmental service systems; food products & processing systems; natural resource systems; plant systems; and power, structural & technical systems
- 1.2 Develop career goals based on interests, attitudes and research, and record in the long-ranged annual Supervised Agricultural Experience (SAE) program plan
- 1.3 Write, review and revise plan/goals through an annual long ranged SAE program plan
- 1.4 Manage personal and career goals through an annual long ranged SAE program plan
- 1.5 Describe factors that contribute to job satisfaction & success

2.0 PREPARE FOR EMPLOYMENT IN AGRICULTURAL BUSINESS AND MANAGEMENT

- 2.1 Develop a resume and sample cover letter utilizing data from the SAE Record and Planning book and from the Job Interview CDE
- 2.2 Create a personal portfolio with industry-specific work samples
- 2.3 Complete a job application process, including electronic applications
- 2.4 Demonstrate customer service skills
- 2.5 Demonstrate interviewing skills utilized in any FFA Career Development Event (CDE)
- 2.6 Apply researched company/agency information for the purpose of preparing for the interview process

3.0 PARTICIPATE IN SUPERVISED AGRICULTURAL EXPERIENCES [SAE]

- 3.1 Demonstrate understanding and use of technology appropriate for the SAE or career goals
- 3.2 Demonstrate workplace leadership and teamwork skills and behaviors
- 3.3 Demonstrate positive attitudes in person and through communication technology
- 3.4 Demonstrate positive interpersonal behaviors
- 3.5 Demonstrate safe and healthy workplace behaviors
- 3.6 Recognize and adapt to changes in the workplace
- 3.7 Participate in a variety of SAE paid or non-paid work experiences
- 3.8 List skills and competencies for selected SAE or career
- 3.9 Complete Arizona SAE Record and Planning book

4.0 DEMONSTRATE ORAL COMMUNICATION SKILLS

- 4.1 Through research, collect appropriate topical information and data as would be utilized for any FFA CDE that would require oral communication skills
- 4.2 Use questioning techniques to obtain needed information from audience
- 4.3 Interpret verbal and nonverbal communications of audience
- 4.4 Demonstrate active listening skills
- 4.5 Demonstrate use of technologies for a formal presentation
- 4.6 Deliver presentation incorporating verbal and nonverbal communication techniques
- 4.7 Communicate using effective and suitable language for a diverse audience
- 4.8 Demonstrate effective telephone techniques
- 4.9 List appropriate skills for oral customer communication
- 4.10 Participate in any FFA CDE that requires oral communication

5.0 DEMONSTRATE WRITTEN COMMUNICATION SKILLS

- 5.1 Through research, collect appropriate topical information and data as would be utilized in any FFA CDE event that would require written communication skills
- 5.2 Organize information and develop an outline
- 5.3 Credit sources of information in appropriate written format
- 5.4 Prepare business communication using appropriate written format for the situation
- 5.5 Prepare draft document using established rules for grammar, spelling and sentence construction
- 5.6 List appropriate skills for written customer communication
- 5.7 Utilize electronic format for written and presentation communications
- 5.8 Participate in any FFA CDE that requires written communication

6.0 EVALUATE THE ROLE OF AGRICULTURAL BUSINESS AND MANAGEMENT INDUSTRIES IN THE ECONOMY

- 6.1 Evaluate the roles of agricultural business and management industries in local, state, national and international economies
- 6.2 Compare and contrast the advantages and disadvantages of sole proprietorships, partnerships and corporations
- 6.3 Develop a business plan
- 6.4 Conduct an employee needs analysis for the organization based upon a business plan
- 6.5 Research business locations, facilities and equipment needs for the organization based upon the business plan
- 6.6 Analyze the relationship of customer service and customer satisfaction on the success of a business
- 6.7 Participate in any FFA CDE that requires knowledge or use of business plans, customer service skills and/or customer satisfaction data

7.0 DEMONSTRATE BUSINESS AND FINANCIAL MANAGEMENT PRACTICES NEEDED IN AGRICULTURAL BUSINESS AND MANAGEMENT INDUSTRIES

- 7.1 Research and identify costs associated with supplying services in the Agricultural Business and Management field
- 7.2 Interpret financial information for decision making and planning
- 7.3 Monitor and adjust business operation based on financial performance
- 7.4 Demonstrate knowledge of checking and savings accounts and the ability to balance a checkbook
- 7.5 Develop a Risk Management plan for SAE or business
- 7.6 Utilize the SAE record and planning book to record the business and financial management practices for all SAEs

8.0 EVALUATE LEADERSHIP STYLES APPROPRIATE FOR THE WORKPLACE

- 8.1 Describe how personal characteristics affect leadership ability
- 8.2 Investigate and evaluate leadership and management styles
- 8.3 Describe how cultural and ethnic differences affect leadership styles within a group
- 8.4 Describe how cultural and ethnic differences affect interpersonal interactions, teamwork and communications within a group
- 8.5 Describe different business etiquette practices

9.0 PARTICIPATE IN LEADERSHIP ACTIVITIES AS PROVIDED BY THE FFA ORGANIZATION

- 9.1 Describe roles and responsibilities that FFA leaders and members bring to an organization
- 9.2 Evaluate characteristics and importance of an effective team player
- 9.3 Evaluate characteristics of effective teams
- 9.4 Demonstrate teamwork through participation in CDE teams
- 9.5 Practice techniques to involve each member of the team
- 9.6 Practice effective meeting management through participation at FFA meetings
- 9.7 Develop and implement a personal and professional improvement plan as shown in the SAE Record and Planning book
- 9.8 Participate in FFA Career Development Events
- 9.9 Practice decision-making process
- 9.10 Participate in leadership activities through FFA offices and committees

Standards & Measurement Criteria

Agricultural Business Management-Agriscience

Applied Biological Systems (ABS) Agriculture

CIP No. 01.0100.10 (Introduction to Applied Biological Systems)

CIP No. 01.0100.12 (Applied Biological Systems)

These standards are to be taught over a two year period during grades 9 and 10.

10.0 DEMONSTRATE LABORATORY PROCEDURES AND SAFETY PRACTICES

- 10.1 Demonstrate safe practices in a home, classroom, laboratory and work situation
- 10.2 Identify careers that involve working with hazardous biological materials
- 10.3 Know the value of safety to employees
- 10.4 Discuss the impact of safety compliance on business
- 10.5 Identify safety precautions associated with biotechnology
- 10.6 Safely operate and maintain equipment

11.0 DESCRIBE ANIMAL HEALTH NEEDS

- 11.1 Explore the cells, tissues and organs in animals
- 11.2 Describe the epidermis system
- 11.3 Describe the musculoskeletal system
- 11.4 Describe the nervous system
- 11.5 Describe the circulatory system
- 11.6 Describe the respiratory system
- 11.7 Describe the digestive system
- 11.8 Describe the urinary system
- 11.9 Describe the reproductive system
- 11.10 Describe the endocrine system
- 11.11 Discuss how biotechnology has influenced animal health
- 11.12 Explain how biotechnology has influenced animal medicines
- 11.13 Compare the impact of biotechnology on the length and quality of animal life
- 11.14 Explore careers in the health care field and/or veterinary care field
- 11.15 Explore benefits to health care that have resulted from advances in technology

12.0 DESCRIBE BASIC PRINCIPLES OF NUTRITION

- 12.1 Define the essential nutrients
- 12.2 Explore the nutritional needs of humans
- 12.3 Explore the nutritional needs of animals
- 12.4 Explore the nutritional needs of plants
- 12.5 Explain the process of food digestion
- 12.6 Describe nutrient absorption
- 12.7 Identify common nutrient problems
- 12.8 Compare the impact of biotechnology on the production, processing, storage and preparation of food
- 12.9 Discuss how biotechnology has improved nutrition
- 12.10 Explore careers in the field of nutrition

13.0 EXAMINE THE INTERACTION OF BIOLOGICAL SYSTEMS WITHIN THE ENVIRONMENT

- 13.1 Discuss the different classifications of natural resources in the environment
- 13.2 Identify fossil fuels found in the environment
- 13.3 Describe soil resources found in the environment
- 13.4 Identify the effects of pest control methods on the environment
- 13.5 Discuss environmental issues related to water resources
- 13.6 Identify air and atmospheric resources
- 13.7 Describe the effects of technology and biotechnology on the environment
- 13.8 Explore careers related to natural resources and the environment
- 13.9 Describe benefits to the environment as a result of advances in technology

14.0 DESCRIBE PRINCIPLES OF PLANT GROWTH PRODUCTION

- 14.1 Identify parts of plants and their functions
- 14.2 Explore methods of classifying plants
- 14.3 Recognize the physiological needs of plants
- 14.4 Explain plant reproduction
- 14.5 Investigate plant tissue culture techniques
- 14.6 Explore careers that utilize biotechnology skills in the growth and production of plants
- 14.7 Discuss the effects of plant biotechnology in sustainable agriculture systems

15.0 DESCRIBE PRINCIPLES OF ANIMAL GROWTH AND PRODUCTION

- 15.1 Recognize the physiological needs of living animals
- 15.2 Explore animal health control practices
- 15.3 Explain animal reproduction practices
- 15.4 Describe the use of biotechnology in animal growth and reproduction
- 15.5 Explore careers in animal growth and production

16.0 USE SCIENTIFIC PROCESSES TO ANALYZE DATA

- 16.1 Formulate predictions, questions, or hypotheses based on observations.
- 16.2 Evaluate appropriate resources
- 16.3 Illustrate the scientific method
- 16.4 Design and conduct controlled investigations
- 16.5 Identify new and innovative food products developed as a result of advances in technology
- 16.6 Analyze data to explain results and propose further investigations.
- 16.7 Design models
- 16.8 Communicate results of investigations

17.0 ANALYZE THE RELATIONSHIPS WITHIN LIVING SYSTEMS

- 17.1 Explain the role of the cell and cellular processes
- 17.2 Examine the molecular basis of heredity and resulting genetic diversity
- 17.3 Analyze the relationships among various organisms and their environment
- 17.4 Portray the scientific principles and processes involved in biological evolution
- 17.5 Analyze the organization of living systems
- 17.6 Recognize the role of energy within living systems

18.0 DISCUSS BIOETHICAL ISSUES

- 18.1 Explore the ethical considerations related to using biotechnology to improve human health
- 18.2 Discuss ethical considerations related to using biotechnology to produce and process human food
- 18.3 Identify ethical considerations related to using biotechnology to improve the production of animals
- 18.4 Describe the ethical considerations businesses face when deciding to sell food produced using biotechnology techniques

Standards & Measurement Criteria

Agricultural Business Management-Agriscience

Laboratory-Based Integrated Science I

CIP No. 01.0100.14

These standards are to be taught during grades 11 and 12. Whichever option is chosen, will affect how these standards are taught.

19.0 DESCRIBE FOOD SAFETY AND PROCESSING PRACTICES

- 19.1 Identify food safety practices
- 19.2 Describe food-processing practices
- 19.3 Examine the effects of biotechnology on food safety and processing techniques
- 19.4 Explore careers in the food industry

20.0 INVESTIGATE ETHICS IN THE AGRICULTURE INDUSTRY

- 20.1 Assess ethics
- 20.2 Evaluate business dealings with friends, family, or competitors
- 20.3 Evaluate pricing and sales incentives
- 20.4 Evaluate potential environmental damage of agriculture practices
- 20.5 Evaluate sustainable agriculture

21.0 INVESTIGATE APPROVED BIOTECHNOLOGY TECHNIQUES

- 21.1 Specify methods and requirements by which an organism's genetic code can be altered using biotechnology techniques.
- 21.2 Explain the process of embryo transfer techniques.
- 21.3 Demonstrate propagation techniques using tissue culture.
- 21.4 Detect biotechnology techniques that have contributed to improved health.
- 21.5 Explore methods of using biotechnology to improve production.
- 21.6 Justify the purposes and processes of growth regulators.
- 21.7 Describe how scientists continue to investigate and critically analyze DNA cloning.
- 21.8 Express the use of jumping genes.
- 21.9 Examine careers in the biotechnology industry.
- 21.10 Analyze how specific cultural and/or social issues promote or hinder scientific advancements.
- 21.11 Report new agricultural products developed as a result of advances in technology

22.0 INVESTIGATE APPROVED PRACTICES OF DISEASE CONTROL

- 22.1 Differentiate between common diseases
- 22.2 Assess symptoms of common diseases and parasites
- 22.3 Evaluate economic impact of diseases on production
- 22.4 Compare methods by which diseases are spread
- 22.5 Evaluate the most economical and environmentally safe disease control and prevention methods
- 22.6 Conduct an investigation on an infected field/organism
- 22.7 Record observations, notes, sketches, questions, and ideas during the investigation
- 22.8 Propose corrective actions needed to treat an infected field/organism

23.0 INVESTIGATE APPROVED NUTRITIONAL PRACTICES

- 23.1 Determine the essential nutrients for organisms and describe their importance
- 23.2 Research common nutrient deficiency symptoms and treatment options
- 23.3 Recommend nutrient and quantity requirements
- 23.4 Evaluate diagnosis, treatment, and prevention of nutrient deficiency
- 23.5 Inspect supplemental and additive ration/fertilizer composition
- 23.6 Prepare tissue samples for testing and diagnosis
- 23.7 Test methods of fertilizer/nutrient application
- 23.8 Compare the relationship between nutrient practices and yield amounts

24.0 ANALYZE THE INTERACTION AMONG ENVIRONMENTAL AND NATURAL RESOURCES SCIENCES

- 24.1 Evaluate environmental and natural resource sciences
- 24.2 Demonstrate how dynamic processes such as weathering, erosion, and sedimentation relate to redistribution of materials in the earth system
- 24.3 Investigate soil morphology
- 24.4 Illustrate land-use and water-use planning
- 24.5 Explain factors that impact current and future water quantity and quality including surface, ground, and local water issues
- 24.6 Define bio-fuels and how they are affecting the environment.
- 24.7 Describe how human activities and natural causes can lead to pollution
- 24.8 Evaluate the effectiveness of conservation practices on environmental quality and biodiversity
- 24.9 Research careers in environmental sciences

25.0 INVESTIGATE ENVIRONMENTAL AND ECONOMICAL IMPACTS OF INTEGRATED PEST MANAGEMENT OPTIONS

- 25.1 Classify common pests, including insects and noxious weeds
- 25.2 Evaluate economic impact of pests on plant production
- 25.3 Predict methods by which pests spread
- 25.4 Recognize signs of pest damage
- 25.5 Identify thresholds created for specific pests
- 25.6 Select and propose the most economical and environmentally safe pest control method
- 25.7 Identify GMO crops and their role in the agriculture industry
- 25.8 Read and interpret pesticide labels
- 25.9 Select and wear protective clothing for applying pesticides
- 25.10 Apply pesticide effectively

26.0 DEMONSTRATE AGRISCIENCE MECHANIC APPLICATIONS

- 26.1 Demonstrate personal and group safety
- 26.2 Develop a bill of materials for a specific task
- 26.3 Develop a structural plan for a specific task
- 26.4 Demonstrate appropriate wood fabrication techniques
- 26.5 Demonstrate appropriate metal fabrication techniques
- 26.6 Demonstrate appropriate oxy-fuel cutting techniques used in agriculture
- 26.7 Demonstrate appropriate plasma cutting techniques used in agriculture
- 26.8 Demonstrate appropriate plumbing fabrication techniques used in agriculture
- 26.9 Demonstrate appropriate safe connection of electrical components including motors, timers, and valves in both high and low voltage circuits used in agriculture
- 26.10 Demonstrate appropriate concrete and masonry practices commonly used in agriculture
- 26.11 Demonstrate operation and maintenance of appropriate mechanical systems used in agriculture
- 26.12 Demonstrate service and repair of appropriate mechanical systems
- 26.13 Demonstrate appropriate land measurement and construction techniques commonly used in agriculture which are to include optical, laser, and global positioning satellite systems
- 26.14 Demonstrate principles and applications of various engines and machinery used in agriculture

Standards & Measurement Criteria

Agricultural Business Management-Agriscience

Laboratory-Based Integrated Science II Environmental Service Systems - Option G

CIP NO. 01.0100.00

These standards should be taught throughout the Agriscience program and will affect how the other standards are taught.

27.G USE ANALYSIS PROCEDURES TO PLAN AND EVALUATE ENVIRONMENTAL SERVICE IMPACTS

27.1g Use instrumentation to monitor samples

- 27.1.1g Operate basic laboratory equipment and environment monitoring instruments (e.g., pH meter/ISE meter, compound microscope/dissecting microscope, sound level measuring devices, turbid meter, conductivity meter, chlorine meter OVA, HNMU)
- 27.1.2g Perform chemical laboratory sample preparation
- 27.1.3g Perform analytical separation techniques
- 27.1.4g Use computers to interface with chemical analytical instruments
- 27.1.5g Perform instrumental analysis (e.g., mass spectrometers, chromatographs, electron microscopes)

27.2g Calibrate and service instruments on a timely schedule to maintain environmental instrumentation

- 27.2.1g Maintain instruments using gas systems
- 27.2.2g Calibrate chemical analytical instruments
- 27.2.3g Operate and maintain flow instrument systems
- 27.2.4g Operate and maintain pressure test instruments (e.g., manometers, vacuum pumps, pressure and vacuum gages)
- 27.2.5g Service thermal measuring instruments
- 27.2.6g Service physical property (e.g., sample control) measuring instruments

27.3g Apply statistics, charts, and scatter grams to measure and monitor operations.

- 27.3.1g Apply basic statistics concepts
- 27.3.2g Interpret scatter grams
- 27.3.3g Analyze probability theories
- 27.3.4g Determine control limits
- 27.3.5g Determine process capability
- 27.3.6g Prepare and evaluate charts
- 27.3.7g Conduct process improvement studies
- 27.3.8g Interpret quantitative and graphic output from chemical analysis instruments

27.4g Utilize a Global Positioning System (GPS) unit

- 27.4.1g Identify the latitude and longitude of a given set of points
- 27.4.2g Detect boundaries of a given area
- 27.4.3g Calculate land area and linear feet of boundaries
- 27.4.4g Layout location of fence line, pond, drainage structure, or other related facility
- 27.4.5g Mark a location of a path or road through a given area
- 27.4.6g Determine slope of land area for installation of drainage, etc

28.G IDENTIFY PUBLIC POLICIES AND REGULATIONS IMPACTING ENVIRONMENTAL SERVICES TO DETERMINE THEIR EFFECT ON FACILITY OPERATION

28.1g Consult reliable resources or training to identify the major laws impacting environmental services

- 28.1.1g Identify key components of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- 28.1.2g Identify requirements of Superfund Amendment Reauthorization Act (SARA)
- 28.1.3g Identify requirements of waste and material transportation
- 28.1.4g Describe job-related activities subject to the Occupational Safety and Health Administration (OSHA)
- 28.1.5g Describe requirements of Resource Conservation and Recovery Act (RCRA)
- 28.1.6g Explain requirements of Clean Water Act
- 28.1.7g Explain requirements of Safe Drinking Water Act (SDWA)
- 28.1.8g Explain requirements of Clean Air Act
- 28.1.9g Identify requirements of the Nuclear Waste Policy Act
- 28.1.10g Identify key components of ISO 14000

29.G APPLY SCIENTIFIC PRINCIPLES TO ENVIRONMENTAL SERVICES

29.1g Apply meteorological knowledge to recognize weather systems and weather patterns

- 29.1.1g Identify the components of the earth's atmosphere
- 29.1.2g Explain basic meteorology principles

29.2g Describe soil compositions and properties to demonstrate knowledge of soil science

- 29.2.1g Describe soil geology
- 29.2.2g Describe composition of soil
- 29.2.3g Describe the biological properties of soil
- 29.2.4g Identify the physical properties of soil
- 29.2.5g Describe the chemical properties of soil.

- 29.2.6g Test soil samples to determine characteristics.
- 29.2.7g Explain classification of soil water.
- 29.2.8g Explain the relationship between soil classifications and land use.

29.3g Explain well design and groundwater supplies to demonstrate knowledge of hydrology

- 29.3.1g Explain hydrology
- 29.3.2g Explain geological and meteorological principles affecting groundwater supply
- 29.3.3g Identify basic criteria for water well design
- 29.3.4g Identify environmental hazards associated with groundwater supplies

29.4g Discuss properties, classifications and functions in order to understand wetland principles

- 29.4.1g Explain wetlands classification
- 29.4.2g Explain the function of wetlands
- 29.4.3g Describe the living components of wetland habitats
- 29.4.4g Delineate wetlands
- 29.4.5g Identify techniques used in wetland management, enhancement and restoration programs
- 29.4.6g Identify principles used in wetland mitigation and restoration

29.5g Discuss properties, classifications and functions in order to understand watershed principles

- 29.5.1g Identify properties of watersheds
- 29.5.2g Explain watershed management
- 29.5.3g Delineate watersheds
- 29.5.4g Assess source water

29.6g Use chemical analysis to conduct tests

- 29.6.1g Explain basic chemistry principles (e.g., elements, compounds)
- 29.6.2g Apply chemical laboratory skills

29.7g Investigate living organisms and their interactions with the environment

- 29.7.1g Identify native and invasive organisms within a given area
- 29.7.2g Inventory resources which resident species depend on for survival
- 29.7.3g Define relationships among plants and animal species
- 29.7.4g Recognize causes of changes in ecological succession patterns
- 29.7.5g Determine if a healthy balance exists between the environment and the native species
- 29.7.6g Suggest remediation practices
- 29.7.7g Perform common microbiology procedures to examine cell types and conduct tests
- 29.7.8g Identify groups of microorganisms
- 29.7.9g Analyze factors affecting microbial growth

29.8g Apply sampling techniques and other assessments to demonstrate background knowledge of microbiology

- 29.8.1g Apply microbiological principles and procedures.
- 29.8.2g Explain immunological procedures
- 29.8.3g Describe roles of microorganisms in the environment
- 29.8.4g Explain microbial growth
- 29.8.5g Describe influence of environmental factors on microbes

30.G OPERATE ENVIRONMENTAL SERVICE SYSTEMS (E.G., POLLUTION CONTROL, WATER TREATMENT, WASTEWATER TREATMENT, SOLID WASTE MANAGEMENT, AND ENERGY) TO MANAGE A FACILITY ENVIRONMENT

30.1g Use pollution control measures to maintain a safe facility environment

- 30.1.1g Identify types of pollution (e.g., ground, surface water, air, noise, radioactive contamination)
- 30.1.2g Identify presence of pollution
- 30.1.3g Describe environmental impact from industrial and non-industrial processes
- 30.1.4g Quantify extent of pollution
- 30.1.5g Locate sources of pollution
- 30.1.6g Establish pollution management and prevention program

30.2g Apply principles of solid waste management (landfill) to manage safe disposal of all categories of waste

- 30.2.1g Identify characteristics of solid waste treatment
- 30.2.2g Identify the risks associated with solid waste accumulation and disposal
- 30.2.3g Describe methods of site identification and acceptance
- 30.2.4g Explain sanitary landfill operating procedures
- 30.2.5g Describe methods to operate a composting facility
- 30.2.6g Describe methods to incinerate solid waste
- 30.2.7g Describe recycling methods

30.3g Apply drinking water treatment operations principles to assure safe water at a facility.

- 30.3.1g Identify characteristics of drinking water treatment
- 30.3.2g Explain the aeration process in water treatment
- 30.3.3g Describe taste and odor control in water treatment
- 30.3.4g Identify facility operational problems in water treatment
- 30.3.5g Identify methods for backflow prevention

30.4g Apply wastewater treatment operations principles to manage wastewater disposal in keeping with rules and regulations

- 30.4.1g Identify characteristics of wastewater treatment
- 30.4.2g Sample wastewater
- 30.4.3g Describe wastewater collection systems.
- 30.4.4g Analyze the constituents of wastewater entering wastewater treatment facility
- 30.4.5g Describe the mixing, coagulation and flocculation processes in wastewater treatment
- 30.4.6g Describe the disinfection process in wastewater treatment
- 30.4.7g Describe the treatment train, effluent disposal, and biosolids management in wastewater
- 30.4.8g Analyze process optimization for the treatment train, effluent disposal, and biosolids management in wastewater treatment
- 30.4.9g Analyze treatment process control for the treatment train, effluent disposal and biosolids management in wastewater
- 30.4.10g Describe common facility operational problems
- 30.4.11g Identify methods for cross-connection and backflow prevention

30.5g Apply hazardous materials management principles to assure a safe facility and to comply with applicable regulations

- 30.5.1g Describe risks related to hazardous materials
- 30.5.2g Describe health and safety practices to reduce risks from hazardous materials
- 30.5.3g Demonstrate appropriate responses for major types of hazardous materials disasters (e.g., chemical, fire and explosion, general safety hazards) (FRA, FRO, HMT, HMS)
- 30.5.4g Describe appropriate use of Personal Protective Equipment (PPE)
- 30.5.5g Explain hazardous substance regulations
- 30.5.6g Demonstrate ability to obtain and use information addressing hazardous substance release
- 30.5.7g Demonstrate safe handling procedures for hazardous materials and hazardous waste.
- 30.5.8g Evaluate laboratory results
- 30.5.9g Demonstrate methods for identifying hazardous material
- 30.5.10g Retrieve and evaluate hazardous materials and hazardous waste sample data
- 30.5.11g Respond to mock hazardous materials emergency situations
- 30.5.12g Describe use of equipment related to hazardous materials and hazardous-waste operations
- 30.5.13g Prepare hazardous materials for transportation and storage in accordance with regulations

- 30.5.14g Demonstrate ability to operate treatment and disposal systems for hazardous materials and hazardous waste
- 30.6g Explore conventional and alternative supplies to define energy sources**
- 30.6.1g Identify conventional energy sources and their environmental impact
- 30.6.2g Identify alternate energy sources and their environmental impact

31.G USE TOOLS, EQUIPMENT, MACHINERY AND TECHNOLOGY TO ACCOMPLISH TASKS IN ENVIRONMENTAL SERVICES

- 31.1g Use technological tools to map land, facilities, and infrastructure**
- 31.1.1g Apply surveying and mapping principles to make site measurements and map facility accesses and infrastructure
- 31.1.2g Apply basic drafting skills to create working drawings
- 31.1.3g Use CADD fundamentals to create specialized documents
- 31.1.4g Apply cartographic skills
- 31.1.5g Apply surveying skills
- 31.1.6g Use geo-spatial analysis processes for an environmental services application