

Animal Science Systems

ACADEMIC SKILLS

AA SPEAKING AND LISTENING

AA1 Utilize effective verbal and non-verbal communication skills

AA2 Participate in conversation, discussion and group presentations

AA3 Communicate and follow directions/procedures

AA4 Utilize speaking and listening skills to communicate effectively with customers and co-workers

AB READING AND WRITING

AB1 Locate and interpret written information

AB2 Read and interpret workplace documents, e.g., reports, manuals, schematics, flowcharts, tables, graphs

AB3 Identify relevant details, facts and specifications

AB4 Record information accurately and completely

AB5 Demonstrate competence in organizing, writing and editing using correct vocabulary, spelling, grammar and punctuation

AB6 Demonstrate the ability to write clearly and concisely using industry-specific terminology

AC CRITICAL THINKING AND PROBLEM SOLVING

AC1 Utilize critical-thinking skills to determine best options/outcomes, e.g., analyze reliable/unreliable sources of information, use previous experiences, implement crisis management, develop contingency planning

AC2 Utilize innovation and problem-solving skills to arrive at the best solution for the current situation

AC3 Implement effective decision-making skills

AD MATHEMATICS

AD1 Perform basic and higher-level math operations, e.g., addition, subtraction, multiplication, division, decimals, fractions, units of conversion, averaging, percentage, proportion, ratios, numbering systems

AD2 Solve problems using measurement skills, e.g., distance, weight, area, volume

AD3 Make reasonable estimates

AD4 Use tables, graphs, diagrams and charts to obtain or convey information

AD5 Use reasoning and problem-solving skills in mathematics

AE FINANCIAL LITERACY

AE1 Locate, evaluate and apply personal financial information

AE2 Identify the components of a budget and how one is created

AE3 Set personal financial goals and develop a plan for achieving them

AE4 Describe types of financial service providers and considerations in selecting a provider

AE5 Demonstrate ability to meet financial obligations

AF INTERNET USE AND SECURITY

AF1 Recognize the potential risks associated with internet and social media use

AF2 Identify and apply internet security practices, e.g., password security, login, logout, log off, lock computer

AF3 Practice safe, legal and responsible use of technology in the workplace

AG INFORMATION TECHNOLOGY

AG1 Use technology appropriately to enhance professional presentations

AG2 Demonstrate effective, appropriate and ethical use of social media

AG3 Identify ways social media can be used as marketing, advertising and data gathering tools

AH TELECOMMUNICATIONS

AH1 Select and utilize the appropriate environment, devices, services and applications to complete workplace tasks

AH2 Demonstrate appropriate etiquette when using telecommunications, e.g., cell phone, e-mail, messaging services, online meetings, conference calls

EMPLOYABILITY SKILLS

EA POSITIVE WORK ETHIC

EA1 Explain the importance of pride and confidence about work and learning new tasks

EA2 Demonstrate consistent and punctual attendance

EA3 Demonstrate initiative in assuming tasks

EA4 Exhibit dependability in the workplace

EA5 Take and provide direction in the workplace

EA6 Accept responsibility for personal decisions and actions

EB INTEGRITY

EB1 Abide by workplace policies and procedures, e.g., safety, internet and cell phone use, code of conduct

EB2 Demonstrate honesty and reliability

EB3 Demonstrate ethical characteristics and behaviors

EB4 Maintain confidentiality and integrity of company information

EB5 Support the mission and vision of the company

EC SELF-REPRESENTATION

EC1 Demonstrate appropriate dress and hygiene in the workplace

EC2 Use language and manners suitable for the workplace

EC3 Demonstrate polite and respectful behavior toward others

ED TIME, TASK AND RESOURCE MANAGEMENT

ED1 Plan and follow a work schedule

ED2 Complete work tasks successfully with minimal supervision

ED3 Work successfully within budgetary constraints

ED4 Demonstrate ability to stay on task to produce high-quality deliverables on time

EE DIVERSITY AWARENESS

EE1 Define and differentiate diversity, equity, inclusion, discrimination and harassment

EE2 Work effectively with all customers and co-workers

EE3 Explain the benefits of diversity within the workplace

EE4 Explain the importance of respect for the feelings, values and beliefs of others

EE5 Identify strategies to bridge cultural/generational differences and use differing perspectives to increase the overall quality of work

EE6 Illustrate techniques for eliminating bias and stereotyping in the workplace

EE7 Identify ways tasks can be structured to accommodate the diverse needs of workers

EE8 Recognize the challenges and advantages of a global workforce

EF TEAMWORK

EF1 Recognize the characteristics of a team environment and conventional workplace

EF2 Demonstrate effective team skills, e.g., setting goals, listening, following directions, questioning, dividing work, conflict resolution, meeting facilitation, and evaluate their importance in the workplace

EG CREATIVITY AND RESOURCEFULNESS

EG1 Explain the importance of contributing and conveying new ideas in the workplace

EG2 Describe the importance of posing questions when developing ideas

EG3 Explain the value of varying ideas and opinions

EG4 Locate and verify information during the creative process

EH CONFLICT RESOLUTION

EH1 Identify conflict resolution skills to enhance productivity and improve workplace relationships

EH2 Implement conflict resolution strategies and problem-solving skills

EH3 Explain the use of documentation and its role as a component of conflict resolution

EI CUSTOMER/CLIENT SERVICE

EI1 Recognize the importance of and demonstrate how to properly greet/approach customers and clients

EI2 Identify and address needs of customers/clients

EI3 Provide helpful, courteous and knowledgeable service

EI4 Identify appropriate channels of communication with customers/clients, e.g., online, phone call, face-to-face

EI5 Identify techniques to seek and use customer/client feedback to improve company services

EI6 Explain the relationship between customer/client satisfaction and company success

EJ ORGANIZATIONS, SYSTEMS AND CLIMATES

EJ1 Define profit and identify factors affecting the profitability of a business

EJ2 Identify "big picture" issues in conducting business, e.g., forecasting, global market, risk management

EJ3 Identify roles in fulfilling the mission of the workplace

EJ4 Identify the rights of workers, e.g., adult and child labor laws, and other equal employment opportunity laws

EJ5 Recognize the chain of command, organizational flow chart system and hierarchy of management within an organization

EK JOB ACQUISITION AND ADVANCEMENT

EK1 Recognize the importance of maintaining a job and pursuing a career

EK2 Define jobs associated with a specific career path or profession

EK3 Identify and seek various work experience opportunities, e.g., volunteerism, internships, co-op, part-time/full-time employment

EK4 Prepare a resume, cover letter and job application

EK5 Prepare for and participate in a job interview, e.g., research company, highlight personal strengths, prepare questions, conduct a mock interview, dress appropriately

EK6 Explain the components of a successful job interview

EK7 Identify key factors to evaluate employment offers, e.g., salary, benefits packages

EK8 Explain the proper procedure for leaving a job

EL LIFELONG LEARNING

EL1 Acquire current and emerging industry-related information

EL2 Demonstrate commitment to learning as a life-long process and recognize learning opportunities

EL3 Identify various self-improvement opportunities

EL4 Explain the importance of adaptability in career planning and self-management, e.g., diverse portfolio, credentials, professional development

EL5 Employ leadership skills to achieve workplace objectives, e.g., personal vision, adaptability, change, shared vision

EL6 Recognize the importance of job performance evaluation and coaching as it relates to career advancement

EL7 Accept and provide constructive criticism

EL8 Describe the impact of the global economy on jobs and careers

EM JOB SPECIFIC TECHNOLOGIES

EM1 Identify the value of new technologies and their impact on driving continuous change and the need for lifelong learning

EM2 Research and identify emerging technologies for specific careers

EM3 Select appropriate technological resources to accomplish work

EN HEALTH AND SAFETY

EN1 Identify and assume responsibility for the safety of self and others

EN2 Follow safety guidelines in the workplace, e.g., OSHA, CDC

EN3 Explain the impact of personal health and wellness on job performance

OCCUPATIONAL SKILLS

OA ANALYZE HISTORIC AND CURRENT TRENDS IMPACTING THE ANIMAL SYSTEMS INDUSTRY

OA1 - Discuss the interrelationships between agriculture commodities based on economic, geographic and production factors

OA2 - Analyze changes in food consumption throughout history

OA3 - Describe the relationship between consumer demands and animal production

OA4 - Evaluate current trends in animal science through industry associations, trade journals, government publications and other reliable resources

OA5 - Describe agricultural practices that ensure a safe food supply e.g., biosecurity, withdrawals, Beef Quality Assurance, Pork Quality Assurance, controlling pathogens

OA6 - Discuss the relationship between the utilization of best practice production systems and product quality/product attributes, e.g., animal handling practices, proper injection techniques, castration, tail docking, administering iron to baby pigs, clipping needle teeth, feed additives for poultry

OA7 - Summarize the benefits of technology in animal science, e.g., artificial intelligence, electronic identification, record keeping, data analysis

OA8 - Evaluate the impact of world trade issues, e.g., diseases, imports/exports, drought, trade agreements, on animal science

OA9 - Summarize agricultural laws impacting animal science, e.g., property, incorporation, liability issues, animal husbandry, labor, farming in populated areas, environmental

OA10 - Identify related government agencies, their functions and programs, as they relate to animal science e.g., USDA, FDA, EPA, Extension service, Kentucky Department of Agriculture

OA11 - Describe the current implications of state and federal agricultural legislation, e.g., farm bill

OA12 - Compare and contrast marketing opportunities for animal commodities, e.g., terminal, direct, niche, local

OA13 - Describe the benefits of common risk management practices, e.g., futures, forward contracts, diversification, insurance

OB UTILIZE BEST-PRACTICE PROTOCOLS BASED ON ANIMAL BEHAVIORS FOR ANIMAL HUSBANDRY AND WELFARE

OB1 - Describe behavior concepts that should be considered when working with animals, e.g., flight zones, blind spots, instinct vs trained behavior, neutral vs aggressive, point of balance

OB2 - Describe characteristics of effective animal care facilities

OB3 - Recommend safe handling techniques and equipment when working with animals, e.g., physical restraints, control poles, head chutes

OB4 - Differentiate between animal welfare and animal rights

OC DESIGN AND PROVIDE PROPER ANIMAL NUTRITION TO ACHIEVE DESIRED OUTCOMES FOR PERFORMANCE DEVELOPMENT, REPRODUCTION AND/OR ECONOMIC PRODUCTION

OC1 - Describe the anatomy and physiology of digestive systems, e.g., monogastric, ruminant, hind gut fermenters, avian

OC2 - Discuss the function of the six classes of nutrients in regards to animal nutrition

OC3 - Describe the impact of water quality on animal health

OC4 - Identify common types of feedstuffs and the role they play in the diets of animals, e.g., roughages, concentrates, mixed feeds

OC5 - Explain the purpose of feed additives and growth promotants in animal production, e.g., probiotics, hormonal supplements, implants

OC6 - Describe how stages and level of production impact nutritional requirements, e.g., rapid growth, finishing, gestation, lactation, maintenance

OC7 - Formulate animal rations optimized for nutritional requirements and cost

OD APPLY PRINCIPLES OF ANIMAL REPRODUCTION TO ACHIEVE DESIRED OUTCOMES FOR PERFORMANCE, DEVELOPMENT AND ECONOMIC PRODUCTION

OD1 - Describe the functions of major reproductive organs and hormones in the male and female reproductive systems of mammals

OD2 - Describe the functions of major reproductive organs and hormones in the male and female reproductive systems of avians

OD3 - Contrast the processes of natural and artificial breeding methods

OD4 - Describe factors that impact the reproductive efficiency of animals, e.g., age, health, nutrition, body condition

OD5 - Evaluate the use of quantitative breeding values in the selection of genetically superior breeding stock, e.g., EPD, pedigree, genomic testing

OD6 - Discuss the importance of efficient and economic reproduction in animals

OD7 - Differentiate principles of animal genetics and heredity, e.g., homozygous, heterozygous, phenotype, genotype, dominance, recessive, heterosis

OD8 - Appraise the advantages of reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer

OE EVALUATE ENVIRONMENTAL FACTORS AFFECTING ANIMAL PERFORMANCE AND IMPLEMENT PROCEDURES FOR ENHANCING PERFORMANCE AND ANIMAL HEALTH

OE1 - Select best practices to sustain soil and water quality, e.g., soil testing, waste management, run off prevention, pasture rotation

OE2 - Describe strategies to mitigate the impact of environmental changes on animal health, e.g., fans, shade, sprinklers

OE3 - Evaluate measures to maintain the quality of the environment in facilities used to raise and house animals, e.g., temperature control, air movement, light

OF CLASSIFY, EVALUATE AND SELECT ANIMALS BASED ON ANATOMICAL AND PHYSIOLOGICAL CHARACTERISTICS

OF1 - Classify animals according to the taxonomical classification system and species-specific terminology related to age and gender

OF2 - Differentiate major animal breeds within the industry and their production strengths

OF3 - Identify the major skeletal and external anatomy of production and companion species

OF4 - Evaluate desirable anatomical and physiological characteristics of animals within a species

OF5 - Identify wholesale and retail meat cuts of production species

OF6 - Describe systems used to evaluate animal product and yield, e.g., quality grade, yield grade, frame size

OG APPLY PRINCIPLES OF EFFECTIVE ANIMAL HEALTH CARE

OG1 - Characterize common disorders and diseases of both production and companion animal species

OG2 - Characterize common internal and external parasites of both production and companion animal species

OG3 - Discuss the health risks of zoonotic diseases to humans and their historical significance

OG4 - Select proper medical dosages and delivery methods, e.g., topical, subcutaneous, intravenous, intramuscular

OG5 - Evaluate preventative measures for controlling and limiting the spread of diseases, parasites and disorders among animals, e.g., vaccination protocols, quarantine, deworming, vector population control

OG6 - Explain common surgical and nonsurgical procedures in animal healthcare, e.g., castration, docking, dental, dehorning, hoof/foot care

OG7 - Define Veterinary Feed Directive and Veterinary Client-Patient Relationship

OH PRACTICE SOUND AGRICULTURAL FINANCE IN ANIMAL SCIENCE

OH1 - Create a budget for an animal-based operation

OH2 - Identify funding sources for animal-based operations, e.g., credit, grants, County Agriculture Investment Program

OH3 - Compare the benefits related to buying, leasing, renting land and/or equipment

OH4 - Describe how various forms of taxes impact the animal science industry, e.g., income, sales, property

OH5 - Calculate break-even prices in an animal science business to maximize profit