

Georgia Department of Education

Agriculture, Food & Natural Resources Career Cluster
Poultry Science
Course Number 02.46200

Course Description:

This course is designed as part of the Georgia Agriculture, Food & Natural Resources Pathways as an introductory course into Poultry Science and Avian Biology. The course introduces students to the terminology and knowledge of modern poultry science and the commercial poultry industry, including anatomy and physiology, reproduction, genetics, nutrition, conventional and alternative housing/production methods, broiler-breeders, broilers, and commercial egg layers, health, processing, marketing, and more. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership programs and activities. The purpose of this course is to establish an in-depth understanding and appreciation of Georgia's #1 industry and economic driver among its students.

Course Standard 1

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

Standard: Demonstrate employability skills required by business and industry.

The following elements should be integrated throughout the content of this course.

1.1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.

Person-to-Person Etiquette	Telephone and Email Etiquette	Cell Phone and Internet Etiquette	Communicating At Work	Listening
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude

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	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé
Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé
Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths
Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings

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Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

1.3 Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads
	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

1.4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good	Demonstrating a Good	Behaviors Employers	Language and	Handling Anger

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Work Ethic	Attitude	Expect	Behavior	
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

1.5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply teamwork skills.

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive	Finding More Time

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	Criticism	
		Managing Projects
		Prioritizing Personal and Work Life

1.6 Present a professional image through appearance, behavior and language.

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism
International Etiquette			Demonstrating Leadership
Cross-Cultural Etiquette			
Working in a Cubicle			

Course Standard 2

AFNR-PS-2

Orient and apply the comprehensive program of agricultural education, learn to work safely in the agriculture lab and work sites, demonstrate selected competencies in leadership through the FFA and agricultural industry organizations, and develop plans for a Supervised Agricultural Experience Program (SAEP).

- 2.1 Explain the role of the Agricultural Education program and the FFA in personal development.
- 2.2 Demonstrate knowledge learned through a SAEP.
- 2.3 Develop leadership and personal development skills through participation in the FFA.
- 2.4 Explore career opportunities with meat & dairy products through the FFA and Agricultural Education Program.
- 2.5 Explore the professional agricultural organizations associated with the course content.

Course Standard 3

AFNR-PS-3

Define and explore the poultry science industry and how it relates to student's lives.

- 3.1 Summarize the poultry production history including a basic timeline of events, key people, and major historical occurrences of the industry including the importance of vertical integration of the poultry industry.
- 3.2 Illustrate the relationship of modern poultry production to food and misconceptions for the general consumer.
- 3.3 Design an economic impact plan that includes the poultry industry relationship to state economic impact.
- 3.4 Analyze skills, education requirements, income, and advantages and disadvantages of careers in the poultry industry.
- 3.5 Explore Supervised Agricultural Experience (SAE) options by researching careers in the poultry industry.

Course Standard 4

AFNR-PS-4

Explore, develop, and implement a basic knowledge of the impact of genetics in the poultry industry, from breed characteristics to commercial poultry production.

- 4.1 Explain the role of poultry genetics in relation to genotype and phenotype.
- 4.2 Classify, compare and contrast poultry breeds.
- 4.3 Design, implement, and document examples of poultry genetics using the Punnett Square.
- 4.4 Distinguish poultry sex characteristics and methods of sexing chicks in the poultry industry.
- 4.5 Analyze and compare artificial & natural genetic selection processes in the poultry industry.
- 4.6 Describe genetic selection criteria for commercial poultry.

Course Standard 5

AFNR-PS-5

Identify internal and external anatomy of the chicken, including important aspects of the gastrointestinal, respiratory, renal and reproductive anatomy.

- 5.1 Identify external poultry anatomy and compare variations among species and breeds.
- 5.2 Name and define important biological systems and describe the principal functions associated with major organs and tissues in each system.
- 5.3 Differentiate poultry anatomy from other livestock.
- 5.4 Define and analyze the reproductive system including organs and their functions.
- 5.5 Define and understand the skeletal system.
- 5.6 Identify different types of feathers and their characteristics.

Course Standard 6

AFNR-PS-6

Investigate good production practices for poultry health & wellness, and identify common poultry health issues and examine their impact on poultry production.

- 6.1 Explore the importance of housing and management conditions.
- 6.2 Summarize good sanitation and biosecurity practices for both alternative and conventional poultry production.
- 6.3 Describe healthy behavior of poultry.
- 6.4 Understand and recognize basic disease lesions commonly found during necropsy such as Coccidiosis, airsacculitis, rickets, tibial dyschondroplasia, dermatitis (skin/footpad), inclusion body hepatitis, infectious bronchitis, avian influenza.
- 6.5 Understand poultry prevention methods including the use of antibiotic and antibiotic alternatives.

Course Standard 7

AFNR-PS-7

Describe the role of energy and nutrients in the body and how different feedstuffs contribute to key nutrient classes. Know the general makeup of a commercial poultry diet and how it is manufactured and delivered to the bird.

- 7.1 Identify key nutrient classes needed by the bird.
- 7.2 Explain the prevention and treatment of nutritional disorders in poultry.
- 7.3 Identification of feedstuffs by their primary nutritional contribution (e.g., energy, protein, macro/micro-minerals).
- 7.4 Describe the feeding practices and nutritional needs for poultry and how they differ by bird type, age and production phase.
- 7.5 Analyze feed formulations using Pearson's Square.
- 7.6 Calculate feed intake needs of the bird.
- 7.7 Briefly explain the process of ingredient delivery and feed manufacturing at the feed mill.

Course Standard 8

AFNR-PS-8

Analyze and describe the basic processes of incubation for avian species.

- 8.1 Differentiate incubation practices for commercial and small-scale poultry operations.
- 8.2 Investigate common issues with incubators and the incubation process.
- 8.3 Implement the chicken egg incubation process.
- 8.4 Distinguish growth stages of egg development using candling procedures.
- 8.5 Analyze advantages and disadvantages of incubating chicken eggs in the poultry industry.
- 8.6 Compare and contrast the differences in the Broiler Breeder Layers and Commercial Table Egg Layers.

Course Standard 9

AFNR-PS-9

Demonstrate knowledge of required steps to convert a whole poultry carcass into safe and wholesome poultry meat products suitable for human consumption.

- 9.1 Distinguish the importance of uniformity and yield in processing including mathematical concepts.
- 9.2 Outline steps in processing poultry products.
- 9.3 Discuss the consumer-driven market in marketing poultry products.
- 9.4 Summarize additional poultry enterprises and products.
- 9.5 Investigate value-added poultry meat products.
- 9.6 Analyze the relationship between poultry processing and consumer food products that maximizes yields and business profit while meeting consumer demands.
- 9.7 Trace key concepts of uniformity, yield and continuous development of modern further processing convenience products to meet changing consumer demands.
- 9.8 Critique how and why scientific evaluation of foods is conducted in the field of food science.
- 9.9 Name and label poultry parts and further processed poultry meat products.
- 9.10 Identify defects in further processed bone-in and boneless poultry products.

Course Standard 10

AFNR-PS-10

Assess the importance of informed consumers in terms of food safety issues, and name food safety hazards important to the poultry industry.

- 10.1 Cite evidence of USDA Inspection Criteria in the poultry industry as it relates to food safety.
- 10.2 Define and explain Hazard Analysis Critical Control Point techniques that are used to ensure food safety in the poultry industry.
- 10.3 Investigate the role of Occupational Safety and Health Administration in the poultry industry.
- 10.4 Make observations about the importance of public perception and education in relation to consumer concerns for food safety and producer awareness.
- 10.5 Analyze skills, education requirements, income, and advantages and disadvantages of careers with food safety/science fields in the poultry industry.

Course Standard 11

AFNR-PS-11

Categorize the various methods in which poultry is produced and explore the advantages and disadvantages to those methods.

- 11.1 Compare and contrast the principles of alternative (e.g., antibiotic-free, cage-free, free-range, organic, pasture raised, etc.) poultry production compared to conventional poultry production.
- 11.2 Investigate poultry product labels based on the different production practices.
- 11.3 Analyze product costs of eggs and meat versus in relation to their labels.
- 11.4 Describe an ideal housing environment (e.g., ventilation, wind speed, relative humidity, etc.) based on stage of growth and type of production (broiler, layer, broiler breeder, etc.).
- 11.5 Distinguish between animal welfare and animal rights and how they correlate with normal poultry behaviors.
- 11.6 Identify and describe vertical integration as a production strategy.
- 11.7 Examine the relationship of poultry production to the environment and describe common methods of handling poultry waste which reduce environmental pollution within the guidelines of current laws and regulations.