

# Agriculture, Food, and Natural Resources Career Cluster

The Agriculture, Food, and Natural Resources (AFNR) career cluster focuses on the essential elements of life, food, water, land, and air. This career cluster includes occupations ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist.



## Statewide Program of Study: Animal Science

The Animal Science program of study focuses on occupational and educational opportunities associated with the science, research, and business of animals and other living organisms. This program of study includes applying biology and life science to real-world life processes of animals and wildlife, either in laboratories or in the field, which could include a veterinary office, a farm or ranch, or any outdoor area harboring animal life. Students will research and analyze the growth and destruction of species and research or diagnose diseases and injuries of animals.



### Secondary Courses for High School Credit

- Level 1**
  - Principles of Agriculture, Food, and Natural Resources
- Level 2**
  - Small Animal Management
  - Equine Science
  - Entrepreneurship I
- Level 3**
  - Livestock and Poultry Production
  - Livestock and Poultry Production + Agricultural Laboratory and Field Experience
- Level 4**
  - Advanced Animal Science
  - Veterinary Science
  - Veterinary Science + Agricultural Laboratory and Field Experience
  - Career and Technical Education Project-Based Capstone
  - Practicum in Agriculture, Food, and Natural Resources
  - Practicum in Agriculture, Food, and Natural Resources + Extended Practicum in Agriculture, Food, and Natural Resources
  - Practicum in Entrepreneurship
  - Practicum in Entrepreneurship + Extended Practicum in Entrepreneurship
  - Career Preparation for Programs of Study
  - Career Preparation for Programs of Study + Extended Career Preparation
  - Scientific Research and Design

### Work-Based Learning and Expanded Learning Opportunities

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|---|--|
| <p><b>Work-Based Learning Activities</b></p>  | <ul style="list-style-type: none"> <li>• Shadow an animal scientist in a biology lab to learn about applying science to understand animals and wildlife</li> <li>• Intern in a veterinary clinic, caring for animals and wildlife being treated in the clinic</li> </ul> |
| <p><b>Expanded Learning Opportunities</b></p> | <ul style="list-style-type: none"> <li>• Participate in an FFA career, leadership, and speaking contest like an agriscience fair</li> <li>• Attend an agricultural industry seminar</li> </ul>   |

### Aligned Industry-Based Certifications

- AgriLife Veterinary Assistant Certificate
- Certified Veterinary Assistant, Level 1
- Elanco Fundamentals of Animal Science Certification
- Elanco Veterinary Medical Applications Certification
- Equine Management & Evaluation Certification
- Licensed Veterinary Technician
- Production Agriculture - Job Ready
- Small Animal Science and Technology Certification



### Example Postsecondary Opportunities

- Apprenticeships**
  - Reproduction Technician
- Associate Degrees**
  - Biological and Physical Sciences
  - Entomology
- Bachelor's Degrees**
  - Animal Science
  - Zoology/Animal Biology
- Master's, Doctoral, and Professional Degrees**
  - Marine Sciences
  - Biotechnology
- Additional Stackable IBCs/License**
  - Veterinarian
  - Certified Veterinary Technician



### Example Aligned Occupations

#### Veterinary Assistants and Laboratory Animal Caretakers

Median Wage: \$33,581  
Annual Openings: 1,953  
10-Year Growth: 24%

#### Veterinary Technologists and Technicians

Median Wage: \$35,698  
Annual Openings: 1,820  
10-Year Growth: 24%

#### Veterinarians

Median Wage: \$125,030  
Annual Openings: 435  
10-Year Growth: 26%

Animal Science

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024

For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/afnr-animal-science-extended.pdf>



Successful completion of the Animal Science program of study will fulfill requirements of a Business and Industry endorsement.



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## Statewide Program of Study: Animal Science

### Course Information

Level	Course	Prerequisites   Corequisites	Career Clusters
Level 1	<b>Principles of Agriculture, Food, and Natural Resources*</b> 13000200 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
Level 2	<b>Small Animal Management</b> 13000400 (0.5 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Principles of Agriculture, Food, and Natural Resources <b>Recommended Corequisites:</b> None	
	<b>Equine Science</b> 13000500 (0.5 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Principles of Agriculture, Food, and Natural Resources <b>Recommended Corequisites:</b> None	
	<b>Entrepreneurship I*</b> 13011101 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Principles of Business, Marketing, and Finance <b>Recommended Corequisites:</b> None	
Level 3	<b>Livestock and Poultry Production</b> 13000300 (1 credit)	<b>Prerequisites:</b> At least one course from the Agriculture, Food, and Natural Resources career cluster <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Principles of Agriculture, Food, and Natural Resources <b>Recommended Corequisites:</b> None	
	<b>Livestock and Poultry Production + Agricultural Laboratory and Field Experience</b> 13000310 (2 credits)	<b>Prerequisites:</b> At least one course from the Agriculture, Food, and Natural Resources career cluster <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Principles of Agriculture, Food, and Natural Resources <b>Recommended Corequisites:</b> None	

\* Indicates course is included in more than one program of study in this career cluster.

For additional information on the Agriculture, Food, and Natural Resources career cluster, contact [cte@tea.texas.gov](mailto:cte@tea.texas.gov) or visit <https://tea.texas.gov/cte>



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# Agriculture, Food, and Natural Resources Career Cluster

## Statewide Program of Study: Animal Science

### Course Information

Level 4

Course	Prerequisites   Corequisites	Career Clusters
<b>Advanced Animal Science</b> 13000700 (1 credit)	<b>Prerequisites:</b> Biology and chemistry or Integrated Physics and Chemistry (IPC); Algebra I and Geometry; and either Small Animal Management, Equine Science, or Livestock and Poultry Production <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Veterinary Science <b>Recommended Corequisites:</b> None	
<b>Veterinary Science</b> 13000600 (1 credit)	<b>Prerequisites:</b> Equine Science, Small Animal Management, or Livestock and Poultry Production <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
<b>Veterinary Science + Agricultural Laboratory and Field Experience</b> 13000610 (2 credits)	<b>Prerequisites:</b> Equine Science, Small Animal Management, or Livestock and Poultry Production <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
<b>Career and Technical Education Project-Based Capstone*</b> First Time Taken: 12701101 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
<b>Practicum in Agriculture, Food, and Natural Resources*</b> First Time Taken: 13002500 (2 credits) Second Time Taken: 13002510 (2 credits)	<b>Prerequisites:</b> A minimum of two credits with at least one course in a Level 2 or higher course from the Agriculture, Food, and Natural Resources career cluster <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
<b>Practicum in Agriculture, Food, and Natural Resources + Extended Practicum in Agriculture, Food, and Natural Resources*</b> First Time Taken: 13002505 (3 credits) Second Time Taken: 13002515 (3 credits)	<b>Prerequisites:</b> A minimum of two credits with at least one course in a Level 2 or higher course from the Agriculture, Food, and Natural Resources career cluster <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	

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Animal Science

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## Statewide Program of Study: Animal Science

### Course Information

Level 4

Course	Prerequisites   Corequisites	Career Clusters
<b>Practicum in Entrepreneurship*</b> First Time Taken: 13011111 (2 credits)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Entrepreneurship I and Entrepreneurship II, or successful completion of at least two courses in a CTE program of study <b>Recommended Corequisites:</b> None	
<b>Practicum in Entrepreneurship + Extended Practicum in Entrepreneurship*</b> First Time Taken: 13011121 (3 credits)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Entrepreneurship I and Entrepreneurship II, or successful completion of at least two courses in a CTE program of study <b>Recommended Corequisites:</b> None	
<b>Career Preparation for Programs of Study*</b> First Time Taken: 12701121 (2 credits)	<b>Prerequisites:</b> At least one Level 2 or higher CTE course <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
<b>Career Preparation for Programs of Study + Extended Career Preparation*</b> First Time Taken: 12701141 (3 credits)	<b>Prerequisites:</b> At least one Level 2 or higher CTE course <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
<b>Scientific Research and Design*</b> 13037200 (1 credit)	<b>Prerequisites:</b> Biology, and one credit of the following: Physics for Engineering, chemistry, Integrated Physics and Chemistry (IPC), or physics <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	

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