Revised–May 2024

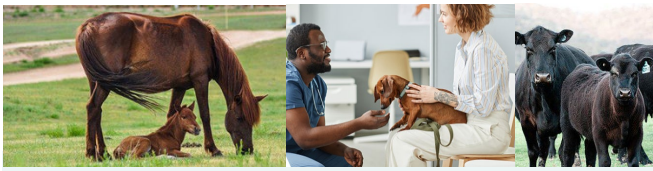
Agriculture, Food, and Natural Resources Career Cluster

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.

Offered to: LMHS



Secondary Courses for High School Credit

Level 1	• Principles of Agriculture, Food, and Natural Resources
Level 2	• Small Animal Management • Equine Science
Level 3	• Advanced Animal Science
Level 4	• Practicum in Agriculture, Food, and Natural Resources

Aligned Advanced Academic Courses

Dual Credit	Dual credit offerings will vary by local education agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards concentrator/completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	• Shadow an animal scientist in a biology lab to learn about applying science to understand animals and wildlife • Intern in a veterinary clinic, caring for animals and wildlife being treated in the clinic
Expanded Learning Opportunities	• Participate in an FFA career, leadership, and speaking contest like an agriscience fair • Attend an agricultural industry seminar

Aligned Industry-Based Certifications

- Elanco Fundamentals of Animal Science

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: $29,906
Annual Openings: 1,348
10-Year Growth: 24%

Veterinary Technologists and Technicians
Median Wage: $33,679
Annual Openings: 1,217
10-Year Growth: 24%

Veterinarian
Median Wage: $103,160
Annual Openings: 347
10-Year Growth: 26%

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/programs-of-study-additional-resources

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

Texas Education Agency

Agriculture, Food, and Natural Resources Career Cluster

Statewide Program of Study: Animal Science

Course Information

Level 1

Course	Prerequisites | Corequisites	Local Course #
Principles of Agriculture, Food, and Natural Resources 13000200 (1 credit)	**Prerequisites:** None **Corequisites:** None	7710

This course will prepare students for careers in agriculture, food, and natural resources, students must attain academic skills and knowledge in agriculture. This course allows students to develop knowledge and skills regarding career opportunities, personal development, globalization, industry standards, details, practices, and expectations. To prepare for success, students need to have opportunities to learn, reinforce, experience, apply, and transfer their knowledge and skills in a variety of settings.

Level 2

Course	Prerequisites | Corequisites	Local Course #
Equine Science 13000500 (0.5 credit)	**Prerequisites:** Principles of AFNR **Corequisites:** Small Animal Management ***Fall Semester**	7832

In Equine Science, students will acquire knowledge and skills related to equine animal systems and the equine industry. Equine Science may address topics related to horses, donkeys, and mules. To prepare for careers in the field of animal science, students must enhance academic knowledge and skills, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

Small Animal Management 13000400 (0.5 credit)	**Prerequisites:** Principles of AFNR **Corequisites:** Equine Science ***Spring Semester**	7722

This course will prepare students for careers in the field of animal science, students need to enhance academic knowledge and skills, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills in a variety of settings. Suggested small

Level 3

Course	Prerequisites | Corequisites	Local Course #
Advanced Animal Science 13000700 (1 credit)	**Prerequisites:** Small Animal Management, Equine Science	7734

To be prepared for careers in the field of animal science, students need to attain academic skills and knowledge, acquire technical knowledge and skills related to animal systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills and technologies in a variety of settings. Topics covered in this course include, but are not limited to, veterinary practices as they relate to both large and small animal species.

Level 4

Course	Prerequisites | Corequisites	Local Course #
Practicum in Agriculture, Food, and Natural Resources 13002500 (2 credits)	**Prerequisites:** Advanced Animal Science ***New for LMHS 2026-2027**	7754

The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources cluster. The practicum is designed to give students supervised practical application of knowledge and skills.

Animal Science

For additional information on the **Agriculture, Food, and Natural Resources** career cluster, contact cte@tea.texas.gov or visit https://tea.texas.gov/cte

Revised–May 2024

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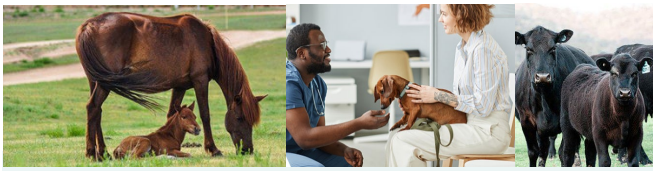
Offered to: TCHS



Secondary Courses for High School Credit

Level 1	• Principles of Agriculture, Food, and Natural Resources
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Level 4	• Practicum in Agriculture, Food, and Natural Resources

Aligned Advanced Academic Courses

Dual Credit	Dual credit offerings will vary by local education agency.

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Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	• Shadow an animal scientist in a biology lab to learn about applying science to understand animals and wildlife • Intern in a veterinary clinic, caring for animals and wildlife being treated in the clinic
Expanded Learning Opportunities	• Participate in an FFA career, leadership, and speaking contest like an agriscience fair • Attend an agricultural industry seminar

Aligned Industry-Based Certifications

- Certified Veterinary Assistant Level I
- Elanco Veterinary Medical Applications

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
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Additional Stackable IBCs/License
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Texas Education Agency

Agriculture, Food, and Natural Resources Career Cluster

Statewide Program of Study: Animal Science

Course Information

Level 1

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Principles of Agriculture, Food, and Natural Resources 13000200 (1 credit)	**Prerequisites:** None **Corequisites:** None	7710

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Level 2

Course	Prerequisites | Corequisites	Local Course #
Equine Science 13000500 (0.5 credit)	**Prerequisites:** Principles of AFNR **Corequisites:** Small Animal Management ***Fall Semester**	7832

In Equine Science, students will acquire knowledge and skills related to equine animal systems and the equine industry. Equine Science may address topics related to horses, donkeys, and mules. To prepare for careers in the field of animal science, students must enhance academic knowledge and skills, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

Small Animal Management 13000400 (0.5 credit)	**Prerequisites:** Principles of AFNR **Corequisites:** Equine Science ***Spring Semester**	7722

This course will prepare students for careers in the field of animal science, students need to enhance academic knowledge and skills, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills in a variety of settings. Suggested small

Level 3

Course	Prerequisites | Corequisites	Local Course #
Advanced Animal Science (Vet Med I) 13000700 (1 credit)	**Prerequisites:** Small Animal Management, Equine Science	7734

To be prepared for careers in the field of animal science, students need to attain academic skills and knowledge, acquire technical knowledge and skills related to animal systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills and technologies in a variety of settings. Topics covered in this course include, but are not limited to, veterinary practices as they relate to both large and small animal species.

Level 4

Course	Prerequisites | Corequisites	Local Course #
Practicum in Agriculture, Food, and Natural Resources (Vet Med II) 13002500 (2 credits)	**Prerequisites:** Advanced Animal Science (Vet Med I)	7754

The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources cluster. The practicum is designed to give students supervised practical application of knowledge and skills. TCHS students must obtain an internship at an approved Veterinary Clinic for 300 hours.

For additional information on the **Agriculture, Food, and Natural Resources** career cluster, contact cte@tea.texas.gov or visit https://tea.texas.gov/cte