

# Business and Industry



Program of Study Course Sequence	9th Grade	10th Grade	11th Grade	12th Grade	Optional Electives
<b>Veterinary Studies</b>	<b>Principles of Agriculture, Food and Natural Resources</b> (1 credit)	<b>Veterinary Medical Applications</b> (1 credit) <i>Prerequisite: Principles of Agriculture, Food and Natural Resources</i>	<b>Advanced Animal Science</b> (1 credit) <b>AND</b> <b>Scientific Research &amp; Design: Veterinary Clinical Skills</b> (1 credit) <i>Prerequisite: Veterinary Medical Applications</i>	<b>Practicum in Agriculture, Food and Natural Resources</b> (2 credits) <i>Prerequisites: Scientific Research &amp; Design: Veterinary Clinical Skills</i>	<b>Wildlife, Fisheries, and Ecology Management</b> (1 credit), <b>Small Animal Management</b> (.5 credit) and <b>Equine Science</b> (.5 credit), <b>Agribusiness Management and Marketing</b> (1 credit), <b>Livestock Production</b> (1 credit), <b>Introduction to Welding</b> (1 credit)
<b>Plant Science</b>	<b>Principles of Agriculture, Food and Natural Resources</b> (1 credit)	<b>Horticultural Science</b> (1 credit) <b>AND</b> <b>1 or more credits from the following 3 courses:</b>  <b>Turf Grass Management</b> (.5 credit), <b>Landscape Design</b> (.5 credit), <b>Floral Design</b> (1 credit) <i>Prerequisite: Principles of Agriculture, Food and Natural Resources</i>	<b>Choose 1 or more credits from the following 3 courses:</b>  <b>Greenhouse Operation &amp; Production</b> (1 credit), <b>Advanced Floral Design</b> (1 credit), <i>Prerequisite: Floral Design,</i> <b>Advanced Plant and Soil Science</b> (1 credit) <i>Prerequisite: Horticultural Science</i>	<b>Practicum in Agriculture, Food and Natural Resources</b> (2 credits) <i>Prerequisites: 3 credits in the Plant Science Program</i>	<b>Agribusiness Management and Marketing</b> (1 credit)

**\*\*Optional electives do not replace required pathway courses\*\***

Certifications / Certificate Opportunities Based on Program of Study
OSHA General Certification Certified Veterinary Assistant (CVA) Animal Health Care Attendant (ACT) Equine Specialist (iCEV) Beef Cattle Specialist (iCEV) Avimark Software Certification
Career and Technical Student Organization (CTSO)
National FFA Organization

Additional Course Information
<b>Credits:</b> Advanced Animal Science, Scientific Research & Design: Veterinary Clinical Skills, and Advanced Plant and Soil Science can be used for science credit. Floral Design can be used for fine arts credit.
<b>Fees:</b> Career and Technical Student Organizations are co-curricular to the curriculum. Although membership is not required, it is highly encouraged for student to join their local CTSO chapter. Fees may apply.
<b>Location:</b> Courses shaded in gray will be taught at the <b>Keller Center for Advanced Learning.</b>

### Principles of Agriculture, Food, and Natural Resources

**TEDS:** 13000200                                      **KISD:** 81100  
**Credit:** 1  
**Grade:** 9-11  
**Recommended prerequisite:** None

To be prepared 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.

### Veterinary Medical Applications

**TEDS:** 13000600                                      **KISD:** 81105  
**Credit:** 1  
**Grade:** 11-12  
**Recommended prerequisites:** Principles of Agriculture, Food, and Natural Resources; Biology, Chemistry, or IPC; Algebra I; and Geometry

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.

### Advanced Animal Science

**TEDS:** 13000700                                      **KISD:** 81106  
**Credit:** 1    **Dual Credit:** 81107  
**Grade:** 11-12    **Honors:** 82206  
**Prerequisite:** Veterinary Medical Applications; Biology; Chemistry or IPC; Algebra I; and Geometry



To be prepared for careers in the field of animal science, students need to attain academic skills and knowledge, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry standards. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings. This course examines the interrelatedness of human, scientific, and technological dimensions of livestock production. Instruction is designed to allow for the application of scientific and technological aspects of animal science through field and laboratory experiences. This course is also offered as a dual credit course through Weatherford College: AGRI 1419 Animal Science. If enrolled in dual credit, students will receive both high school and college credit upon successful completion of the class. This is a college level class, which is designed for highly motivated students who are prepared to take a college course in high school. Students must register and pay for the course through Weatherford College. This course counts as a science credit.

## **Scientific Research and Design: Veterinary Clinical Skills**

**TEDS:** 13037200

**KISD:** 81151

**Credit:** 1

**Honors:** 82251

**Grade:** 11-12

**Recommended prerequisites:** Principles of Agriculture, Food, and Natural Resources; Biology, Chemistry, IPC, or Physics

Scientific Research and Design is a broad-based course designed to allow districts and schools considerable flexibility to develop local curriculum to supplement any program of study or coherent sequence. For Keller ISD, this course has been created to give students a time to focus completely on veterinary clinical skills. Students will spend their time predominantly in a lab setting learning skills such as blood work, diagnostics, sterilization of equipment, bandaging and so on. Students should ideally take this course their junior year of high school as they prepare to do an internship through their senior practicum course. This course counts as a science credit.

## **Practicum in Agriculture, Food, and Natural Resources**

**TEDS:** 13002500

**KISD:** 81161

**Credit:** 2

**Grade:** 11-12

**Recommended prerequisites:** 3 credits of agriculture courses

This course is recommended for students in Grades 11-12. 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. Students can pursue externships at a variety of animal science related businesses in the Keller and Fort Worth area including, but not limited to, veterinary clinics, farms and ranches, equine facilities, dog grooming, and boarding facilities. Students may also choose to pursue an in-house internship housed at the Keller Center for Advanced Learning where they will work in the KCAL veterinary science lab with pets from the Keller community. Recommended Prerequisite: a minimum of three credits from the courses in the Agriculture, Food, and Natural Resources cluster.

## **Wildlife, Fisheries, and Ecology Management**

**TEDS:** 13001500

**KISD:** 81040

**Credit:** 1

**Grade:** 10-12

**Recommended prerequisites:** Principles of Agriculture, Food, and Natural Resources

Wildlife, Fisheries, and Ecology Management examines the management of game and non-game wildlife species, fish, and aqua crops and their ecological needs as related to current agricultural practices. To prepare for careers in natural resource systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to natural resources, 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**

**TEDS:** 13000400

**KISD:** 81103

**Credit:** .5

**Grade:** 10-12

**Recommended prerequisites:** Principles of Agriculture, Food, and Natural Resources

To be prepared 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 animals which may be included in the course of study include, but are not limited to, small mammals, amphibians, reptiles, avian, dogs, and cats. Small Animal Management is taken concurrently with Equine Science.



## Equine Science

**TEDS:** 13000500

**KISD:** 81104

**Credit:** .5

**Grade:** 10-12

**Recommended prerequisites:** Principles of Agriculture, Food, and Natural Resources

To be prepared 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 their knowledge and skills in a variety of settings. Suggested animals which may be included in the course of study include, but are not limited to, horses, donkeys, and mules. Equine Science is taken concurrently with Small Animal Management.

## Agribusiness Management and Marketing

**TEDS:** 13000900

**KISD:** 81060

**Credit:** 1

**Grade:** 11-12

**Recommended prerequisites:** Principles of Agriculture, Food, and Natural Resources; Veterinary Medical Applications, teacher approval

This course will be taught as a junior and senior level FFA leadership class. The course is designed for those that are FFA officers or active in FFA to help develop their leadership and speaking potential. Students in this class will be expected to assist with the development, promotion, and everyday functioning of the KCAL FFA chapter.



## Livestock Production

**TEDS:** 13000300

**KISD:** 81108

**Credit:** 1

**Grade:** 10-12

**Recommended prerequisites:** Principles of Agriculture, Food, and Natural Resources

In Livestock Production, students will acquire knowledge and skills related to livestock and the livestock production industry. Livestock Production may address topics related to beef cattle, dairy cattle, swine, sheep, goats, and poultry. To prepare for careers in the field of animal science, students must attain academic skills and knowledge, acquire 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 their knowledge and skills in a variety of settings.

## Introduction to Welding

**TEDS:** 13032250

**KISD:** 8884

**Credit:** 1

**Grade:** 9-12

Introduction to Welding will provide an introduction to welding technology with an emphasis on basic welding laboratory principles and operating procedures. Students will be introduced to the three basic welding processes. Topics include: industrial safety and health practices, hand tool and power machine use, measurement, laboratory operating procedures, welding power sources, welding career potentials, and introduction to welding codes and standards. Introduction to Welding will provide students with the knowledge, skills, and technologies required for employment in welding industries. Students will develop knowledge and skills related to welding and apply them to personal career development. This course supports integration of academic and technical knowledge and skills. Students will reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills will prepare students for future success.

## Horticulture Science

**TEDS:** 13002000

**KISD:** 82801

**Credit:** 1

**Grade:** 10-12

Structure, growth, and development of horticultural plants from a practical and scientific approach; environmental effects, basic principles of propagation, greenhouse and outdoor production, nutrition, pruning and chemical control of growth, pest control and branches of horticulture.

## Turf Grass Management

**TEDS:** 13001950

**KISD:** 82803

**Credit:** .5

**Grade:** 10-12

Turf Grass Management is designed to develop an understanding of turf grass management techniques and practices.

## Landscape Design and Management

**TEDS:** 13001900

**KISD:** 82804

**Credit:** .5

**Grade:** 10-12

Landscape design and management includes standards to prepare students for creating beautiful environments for homes and businesses. This course includes site analysis and preparation, landscape drawing, plant selection, and installation. Maintenance of healthy attractive landscapes and turf areas will be emphasized. With the increase of urban sprawl these career opportunities are increasing daily. Plant science and leadership skills taught in this class will prepare students to meet the demands of this exciting industry.



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## Floral Design

**TEDS:** 13001800

**KISD:** 81800

**Credit:** 1

**Grade:** 9-12

Floral Design is designed to develop students' ability to identify and demonstrate the principles and techniques related to floral design as well as develop an understanding of the management of floral enterprises. Through the analysis of artistic floral styles and historical periods, students will develop respect for the traditions and contributions of diverse cultures. Students will respond to and analyze floral designs, thus contributing to the development of lifelong skills of making informed judgments and evaluations.



## Greenhouse Operation and Production

**TEDS:** 13002050

**KISD:** 82800

**Credit:** 1

**Grade:** 10-12

Greenhouse Operation and Production is designed to develop an understanding of greenhouse production techniques and practices. To prepare for careers in horticultural systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to horticultural systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations.



## **Advanced Floral Design**

**TEDS:** N1300270

**KISD:** 81810

**Credit:** 1

**Grade:** 11-12

**Required prerequisites:** Floral Design

In this course, students build on the knowledge from the Floral Design course and are introduced to more advanced floral design concepts, with an emphasis on specialty designs and specific occasion planning. This course focuses on building skills in advanced floral design and providing students with a thorough understanding of the design elements and planning techniques used to produce unique specialty floral designs that support the goals and objectives of a specific occasion or event. Through the analysis and evaluation of various occasion and event types, students explore the design needs and expectations of clients and propose and evaluate appropriate creations. From conception to evaluation, students are challenged to create and design appropriate specialty floral designs that meet the needs of the client. Furthermore, an emphasis on budgetary adherence and entrepreneurship equips students with many of the necessary skills needed for success in floral enterprises.

## **Advanced Plant and Soil Science**

**TEDS:** 13002100

**KISD:** 82802

**Credit:** 1

**Grade:** 11-12

Advanced Plant and Soil Science provides a way of learning about the natural world. Students should know how plant and soil science has influenced a vast body of knowledge, that there are still applications to be discovered, and that plant and soil science is the basis for many other fields of science. To prepare for careers in plant and soil science, students must attain academic skills and knowledge, acquire technical knowledge and skills related to plant and soil science and the workplace. This course counts for a fine art credit. This course counts for a science credit.

