

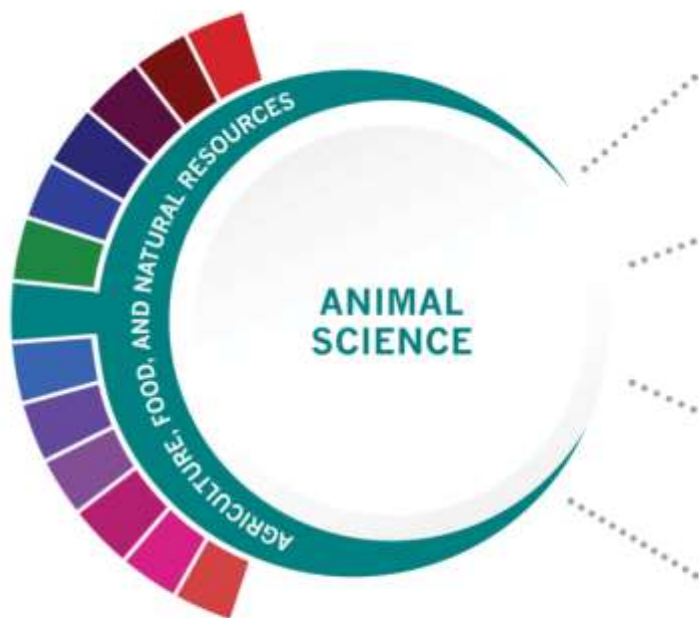
Business & Industry

ENDORSEMENT

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. The career cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist. It also includes non-traditional agricultural occupation like wind energy, solar energy, and oil and gas production. **JISD offers the following programs of study: Animal Science, Food Science and Technology and Science, Plant Science, Applied Agriculture and Engineering.**



Level 1	T101 Principles of Agriculture, Food, and Natural Resources (1/SEM)
Level 2	T110 Small Animal Management (.5/SEM)
Level 3	T112 Livestock Production (1/SEM)
Level 4	T111 Veterinary Medical Applications/Lab (2/YL) <i>or</i> T109 Advanced Animal Science (1/SEM) <i>or</i> T137 Practicum in Agriculture, Food, and Resources (2/YL)
Certifications: Licensed Veterinary Technician	

Animal Science Program of Study (JHS)

T101 PRINCIPLES OF AGRICULTURE, FOOD, AND NATURAL RESOURCES 13000200	Semester (18 Weeks) Grade 9 Credit 1 Weight 1.0	Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations.
T110 SMALL ANIMAL MANAGEMENT 13000400	Semester (18 Weeks) Grade 10-12 Credit .5 Weight 1.0	Small Animal Management, students will acquire knowledge and skills related to small animals and the small animal management industry. Small Animal Management may address topics related to small mammals such as dogs and cats, amphibians, reptiles, and birds. <i>Prerequisite: Principles of Agriculture, Food, and Natural Resources</i>

T112 LIVESTOCK PRODUCTION 13000300	Semester (18 Weeks) Grade 10-12 Credit 1 Weight 1.0	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. Prerequisite: Principles of Agriculture, Food, and Natural Resources
T111 VETERINARY MEDICAL APPLICATIONS/LAB 13000610	Yearlong (36 Weeks) Grade 10-12 Credit 2 Weight 1.0	Veterinary Medical Applications covers topics relating to veterinary practices, including practices for large and small animal species. Prerequisite: Small Animal Management, or Livestock Production.
T109 ADVANCED ANIMAL SCIENCE 13000700	Semester (18 Weeks) Grade 11-12 Credit 2 Weight 1.0	Advanced Animal Science examines the interrelatedness of human, scientific, and technological dimensions livestock production. Instruction is designed to allow for the application of scientific and technological aspects of animal science through field and laboratory experiences. <i>Note: This course satisfies a fourth science credit requirement for students on the Foundation High School Program.</i> Prerequisite: Biology and Chemistry or Integrated Physics and Chemistry (IPC); Algebra I and Geometry; and either, Small Animal Management, or Livestock Production. Recommended Prerequisite: Veterinary Medical Applications.
T137 PRACTICUM AFNR -ANIMAL SYSTEMS EXTENDED 13002505	Yearlong (36 Weeks) Grade 11-12 Credit 3 Weight 1.0	Practicum in Agriculture, Food, and Natural Resources is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. 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 Career Cluster. Recommended Prerequisite: A minimum of two credits from the courses in the Agriculture, Food, and Natural Resources Career Cluster.

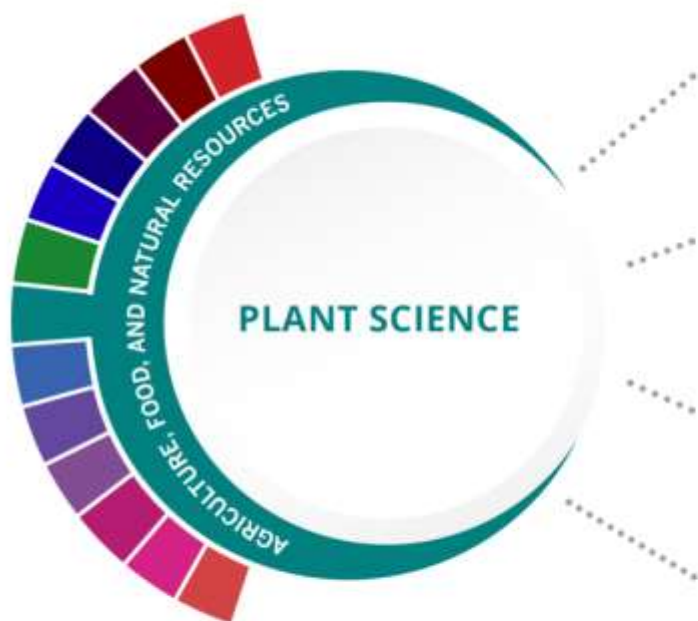




Level 1	T101 Principles of Agriculture, Food, and Natural Resources (1/SEM)
Level 2	T107 Food Technology and Safety (1/SEM)
Level 3	T108 Food Processing (1/SEM)
Level 4	T139 Practicum in Agriculture, Food, and Natural Resources (2/YL)
Certifications: ServSafe Manager, Texas Food Handlers	

Food Science Program of Study (JHS)

T101 PRINCIPLES OF AGRICULTURE, FOOD, AND NATURAL RESOURCES 13000200	Semester (18 Weeks) Grade 9 Credit 1 Weight 1.0	Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations.
T107 FOOD TECHNOLOGY AND FOOD SAFETY 13001300	Semester (18 Weeks) Grade 9-10 Credit 1.0 Weight 1.0	Food Technology and Safety examines the food technology industry as it relates to food production, handling, and safety. To prepare for careers in value-added and food processing systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to value-added and food processing and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations.
T108 FOOD PROCESSING 13001400	Semester (18 Weeks) Grade 10-12 Credit 1 Weight 1.0	Food Processing focuses on the food processing industry with special emphasis on the handling, processing, and marketing of food products. To prepare for careers in food products and processing systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to natural resources and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to, reinforce, apply, and transfer their knowledge and skills in a variety of settings.
T139 PRACTICUM AFNR – Food Technology 13002500	Yearlong (36 Weeks) Grade 11-12 Credit 2 Weight 1.0	Practicum in Agriculture, Food, and Natural Resources is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. 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 Career Cluster. Recommended Prerequisite: A minimum of two credits from the courses in the Agriculture, Food, and Natural Resources Career Cluster. (available 2022-2023)



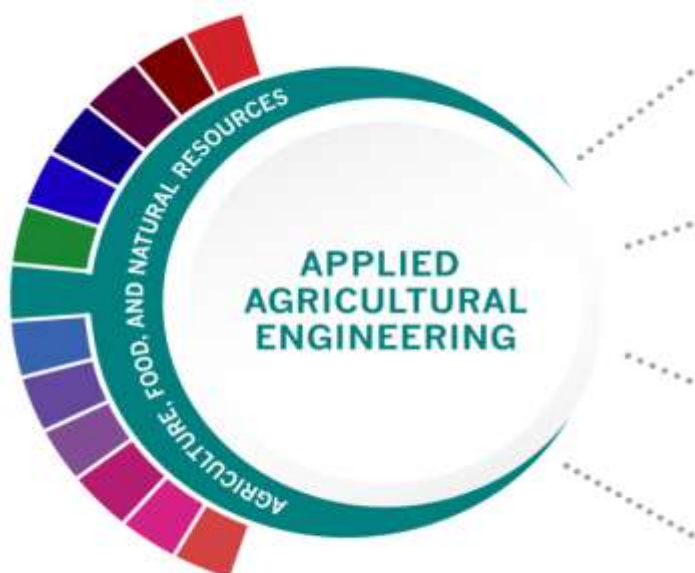
Level 1	T101 Principles of Agriculture, Food, and Natural Resources (1/SEM)
Level 2	T123 Landscape Design and Management (.5/SEM) <i>and</i> T121 Greenhouse Operation and Production (1/SEM)
Level 3	T124 Horticultural Science (1/SEM) <i>and/or</i> T119 Floral Design (1/SEM) <i>or</i> T119DC2 Floral Design Dual Credit (1/YL)
Level 4	T134 Practicum in Agriculture, Food, and Natural Resources (2/YL) <i>or</i> T125 Advanced Plant and Soil Science (1/SEM)
Certification: Texas Sate Floral Association Level One Floral Certification	

Plant Science Program of Study (JHS)

T101 PRINCIPLES OF AGRICULTURE, FOOD, AND NATURAL RESOURCES 13000200	Semester (18 Weeks) Grade 9 Credit 1 Weight 1.0	Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations.
T124 HORTICULTURE SCIENCE 13002000	Semester (18 Weeks) Grade 9-12 Credit 1.0 Weight 1.0	Horticultural Science is designed to develop an understanding of common horticultural management practices as they relate to food and ornamental plant production.
T124D HORTICULTURE SCIENCE DUAL CREDIT HALT 1301 13002000	Yearlong (36 Weeks) Grade 10-12 Credit 1 Weight 1.1 3 Hours	HALT 1301 Principles of Horticulture An overview of the horticulture industry, plant science, terminology, classification, propagation, environmental responses, and careers and opportunities in the field of horticulture. <i>TSI College Readiness Score in Reading and Writing.</i>
T119 FLORAL DESIGN 13001800	Semester (18 Weeks) Grade 10-12 Credit 1 Weight 1.0	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. <i>Note: This course satisfies a fine arts credit requirement for students on the Foundation High School Program.</i>

T119D2 FLORAL DESIGN Dual Credit KMKT 1301 13001800	Yearlong (36 Weeks) Grade 11-12 Credit 1 Weight 1.1 3 Hours	Floral Design FMKT 1301 Principles of floral art with an emphasis in commercial design. Topics include basic design styles and color harmonies; identification, use and care of processing of cut flowers and foliage; mechanical aids and containers; personal flowers; holiday designs; and plant identification and care <i>Prerequisite: TSI College Readiness Score in Reading and Writing.</i>
T121 GREENHOUSE OPERATIONS 13002050	Semester (18 Weeks) Grade 10-12 Credit 1 Weight 1.0	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.
T123 LANDSCAPE DESIGN &MANAGEMENT 13001900	Semester (18 Weeks) Grade 10-12 Credit .5 Weight 1.0	This course is designed to develop an understanding of landscape design and management 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.
T125 ADVANCED PLANT AND SOIL SCIENCE 13002100	Semester (18 Weeks) Grade 11-12 Credit 1 Weight 1.0	Advanced Animal Science 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. 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 develop knowledge and skills regarding career opportunities, entry requirements, and industry standards. <i>Note: This course satisfies a science credit requirement for students on the Foundation High School Program.</i> <i>Prerequisite: Recommended Prerequisites: Biology, Integrated Physics and Chemistry, Chemistry, or Physics and a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster</i>
134 PRACTICUM AFNR – PLANT SCIENCE 13002500	Yearlong (36 Weeks) Grade 11-12 Credit 2 Weight 1.0	Practicum in Agriculture, Food, and Natural Resources is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. 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 Career Cluster. <i>Recommended Prerequisite: A minimum of two credits from the courses in the Agriculture, Food, and Natural Resources Career Cluster.</i>





Level 1	T101 Principles of Agriculture, Food, and Natural Resources (1/SEM)
Level 2	T133 Agricultural Mechanics and Metal Technologies (1/SEM)
Level 3	T132 Agricultural Structures Design and Fabrications (1/SEM)
Level 4	T129 Agricultural Equipment Design and Fabrication/Lab (2/YL) <i>or</i> T136 Practicum in Agriculture, Food, and Natural Resources (2/YL)
Certifications: AWS D1.1, AWS D9.1	

Applied Agricultural Engineering Program of Study (JHS)

T101 PRINCIPLES OF AGRICULTURE, FOOD AND NATURAL RESOURCES 13000200	Semester (18 Weeks) Grade 9 Credit 1 Weight 1.0	Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations.
T133 AGRICULTURAL MECHANICS AND METAL TECHNOLOGIES 13002200	Semester (18 Weeks) Grade 9-10 Credit 1 Weight 1.0	Agricultural Mechanics and Metal Technologies is designed to develop an understanding of agricultural mechanics as it relates to safety and skills in tool operation, electrical wiring, plumbing, carpentry, fencing, concrete, and metal working techniques.
T132 AGRICULTURAL STRUCTURES DESIGN AND FABRICATION 13002300	Semester (18 Weeks) Grade 10-12 Credit 1 Weight 1.0	In Agricultural Structures Design and Fabrication, students will explore career opportunities, entry requirements, and industry expectations. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural structures design and fabrication. Recommended Prerequisites: Agricultural Mechanics and Metal Technologies
T103 AGRICULTURAL EQUIPMENT DESIGN AND FABRICATION/LAB 13002360	Yearlong (36 Weeks) Grade 11-12 Credit 2 Weight 1.0	In Agricultural Equipment Design and Fabrication, students will acquire knowledge and skills related to the design and fabrication of agricultural equipment. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural equipment design and fabrication. Recommended Prerequisites: Agricultural Structures Design and Fabrication

T136 PRACTICUM AFNR – MECHANICAL SYSTEMS 13002500	Yearlong (36 Weeks) Grade 11-12 Credit 2 Weight 1.0	Practicum in Agriculture, Food, and Natural Resources is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. 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 Career Cluster. <i>Recommended Prerequisite: A minimum of two credits from the courses in the Agriculture, Food, and Natural Resources Career Cluster.</i>
--	--	--



Career and Technical Student Organizations

Career and Technical Student Organizations (CTSOs) play an integral part in a student's career and technical Education. CTSOs enrich student learning that starts in the classroom, build strong partnerships between industries and future employees, and provide future career experience that students carry into their careers and communities. <https://txcte.org/teachers>. **Student CTSO membership requires student enrollment in the respective pathway.**

	<p><u>Business Professionals of America (BPA)</u></p> <p>Members compete in demonstrations of their business technology skills, develop their professional and leadership skills, network with one another and professionals across the nation, and get involved in the betterment of their community through good works projects.</p>
	<p><u>DECA</u></p> <p>A national association of marketing education students, provides teachers and members with educational and leadership development activities to merge with the education classroom instructional program. DECA prepares emerging leaders and entrepreneurs in marketing, finance, hospitality and management in high schools and colleges around the globe.</p>
	<p><u>Family Career and Community Leaders of America (FCCLA)</u></p> <p>Involvement in FCCLA offers members the opportunity to expand their leadership potential and develop skills for life — planning, goal setting, problem solving, decision-making and interpersonal communication — necessary in the home and workplace</p>
	<p><u>Health Occupations Students of America (HOSA)</u></p> <p>HOSA is a national vocational student organization endorsed by the U.S. Department of Education and the Health Occupations Education Division of the American Vocational Association. HOSA's two-fold mission is to promote career opportunities in the health care industry and to enhance the delivery of quality health care to all people. HOSA's goal is to encourage all health occupations instructors and students to join and be actively involved in the HOE-HOSA Partnership</p>
	<p><u>National Future Farmers of America (FFA)</u></p> <p>The National Future Farmer of American organization is not just for students who want to be production farmers, FFA also welcomes members who aspire to careers in other fields. The National FFA organization remains committed to the individual student, providing a path to achievement in premier leadership, personal growth and career success through agricultural education.</p>
	<p><u>SkillsUSA</u></p> <p>SkillsUSA is a national organization serving high school and college students and professional members who are enrolled in technical, skilled and service occupations, including health occupations.</p>
	<p><u>TAFE</u></p> <p>The Texas Association of Future Educators is a statewide student organization created to allow young men and women an opportunity to explore the teaching profession. The organization provides students the necessary knowledge to make informed decisions about pursuing careers in education.</p>
	<p><u>Texas Public Service Association (TPSA)</u></p> <p>Texas Public Service Association was developed to help high school Law Public Safety, Corrections, Security students experience interaction with other students and working professionals in an effort to pinpoint their future career expectations through competition and education.</p>

Glossary

**Career Clusters**

This is a grouping of course sequences (programs of study) that prepare students for careers in the same field of study or that require similar skills.

Course Credit

A unit of measure awarded for Successful completion of a course. Completion of a one semester course typically earns one-half credit for a student.

Coherent Sequence

A series of courses in which vocational and academic education are integrated, and which directly relates to, and leads to, both academic and occupational competencies.

CTE Courses

These courses prepare students for careers. These were once called vocational courses. The CTE stands for Career and Technical Education.

Distinguished Level of Achievement

A high level of academic achievement earned by going above and beyond the Foundation + Endorsement high school program. A student must earn this designation to be eligible for the top 10 percent automatic admission to a Texas public university.

Endorsements

The areas of specialized study that are required to earn high school diplomas with endorsements. They are: STEM (Science, Technology, Engineering, & Math), Business & Industry, Arts & Humanities, Public Service, and Multidisciplinary Studies.

EOC

STAAR end-of-course (EOC) exams are state mandated tests given during the final weeks of a course. In addition to meeting graduation course requirements, students are required to pass five end-of-course exams to earn a diploma from a Texas public high school. Those five exams are given when a student takes English I and II, Biology, Algebra I, and U.S. History courses.

Foundation High School Program

The basic 22-credits (not counting additional electives or endorsement courses) needed to graduate from the Texas public school system.

FAFSA

This is the federal student financial aid application. It stands for Free Application for Federal Student Aid.

Industry Workforce Credential

A state, nationally, or internationally-recognized credential that aligns with the knowledge and skills standards identified by an association or government entity representing a particular profession or occupation and valued by business or industry.

Programs of Study

Programs of Study provides students with course sequences that prepare them for success in in-demand, high wage, high skill careers.

Performance Acknowledgements

Students may earn an additional acknowledgement on their diploma because of outstanding performance in areas such as dual credit courses and bilingualism and bi-literacy; on Advanced Placement (AP) exams, International Baccalaureate, PSAT, ACT's Plan, the SAT or ACT exams, or by earning a nationally or internationally-recognized business or industry certification.

STAAR

State of Texas Assessments of Academic Readiness (STAAR) is the state-mandated test given annually to students in grades 3 – 8 and in five high school courses.