Statewide CTE Programs of Study

Programs of Study Overview

- Highlights, Benefits, and Implementation Considerations
  - Program of Study Definition
- Programs of Study Development Process
  - Labor Market Analysis and Methodology
  - Additional Topics for Stakeholder Feedback
- Career Cluster Groupings
- Public Comment Resources and Feedback
- Proposed Statewide Programs of Study

TEA Strategic Priorities

Every child, prepared for success in college, a career or the military.

Strategic priorities

RECRUIT → SUPPORT → RETAIN

Recruit, support and retain teachers and principals

Build a foundation of reading and math

Connect high school to career and college

Improve low-performing schools

Enablers

Increase transparency, fairness and rigor in district and campus academic and financial performance
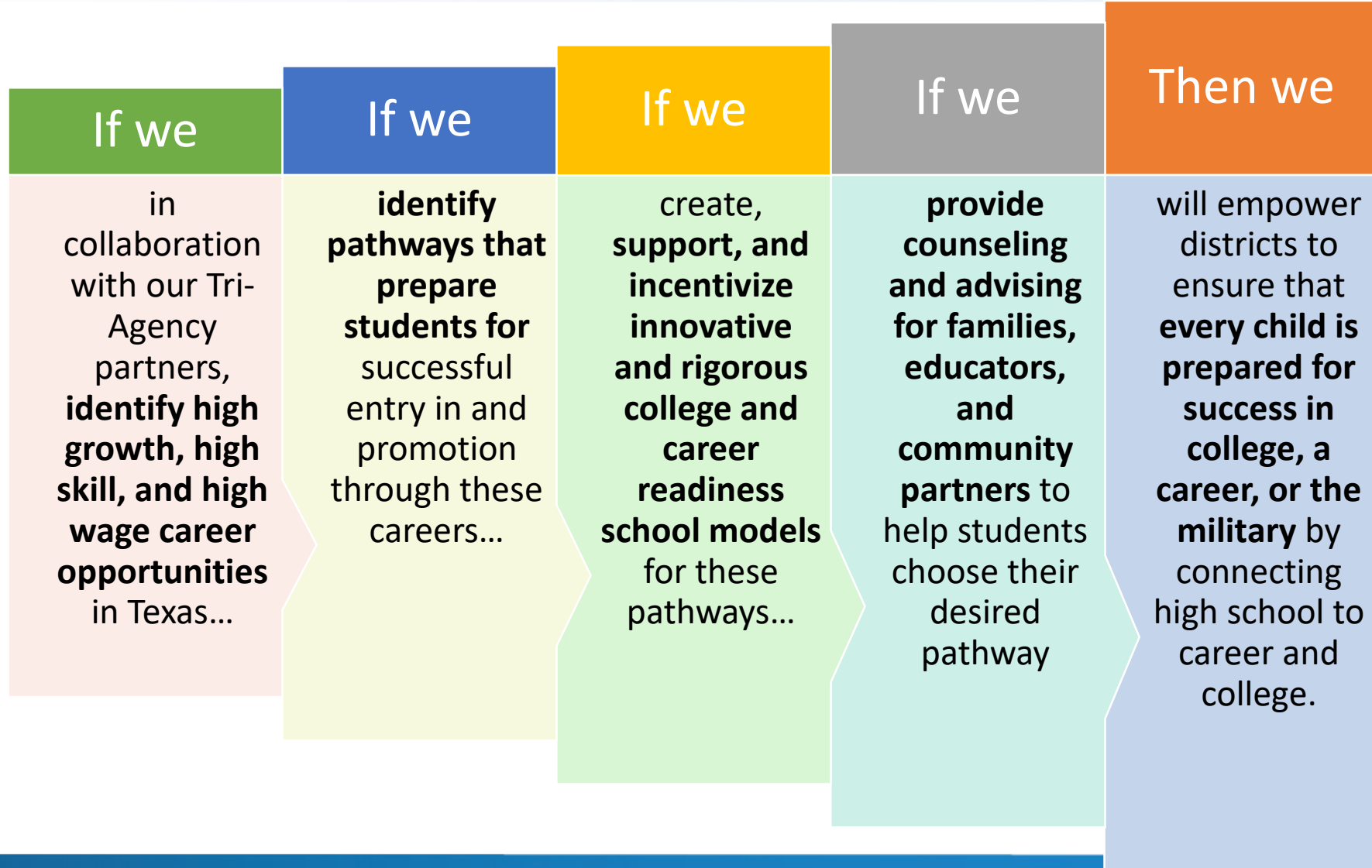
Ensure compliance, effectively implement legislation and inform policymakers

Strengthen organizational foundations (resource efficiency, culture, capabilities, partnerships)

CCMP Strategic Plan: Theory of Action

If we in collaboration with our Tri-Agency partners, **identify high growth, high skill, and high wage career opportunities** in Texas…

If we **identify pathways that prepare students for** successful entry in and promotion through these careers…

If we create, **support, and incentivize innovative and rigorous college and career readiness school models** for these pathways…

If we **provide counseling and advising for families, educators, and community partners** to help students choose their desired pathway

Then we will empower districts to ensure that **every child is prepared for success in college, a career, or the military** by connecting high school to career and college.
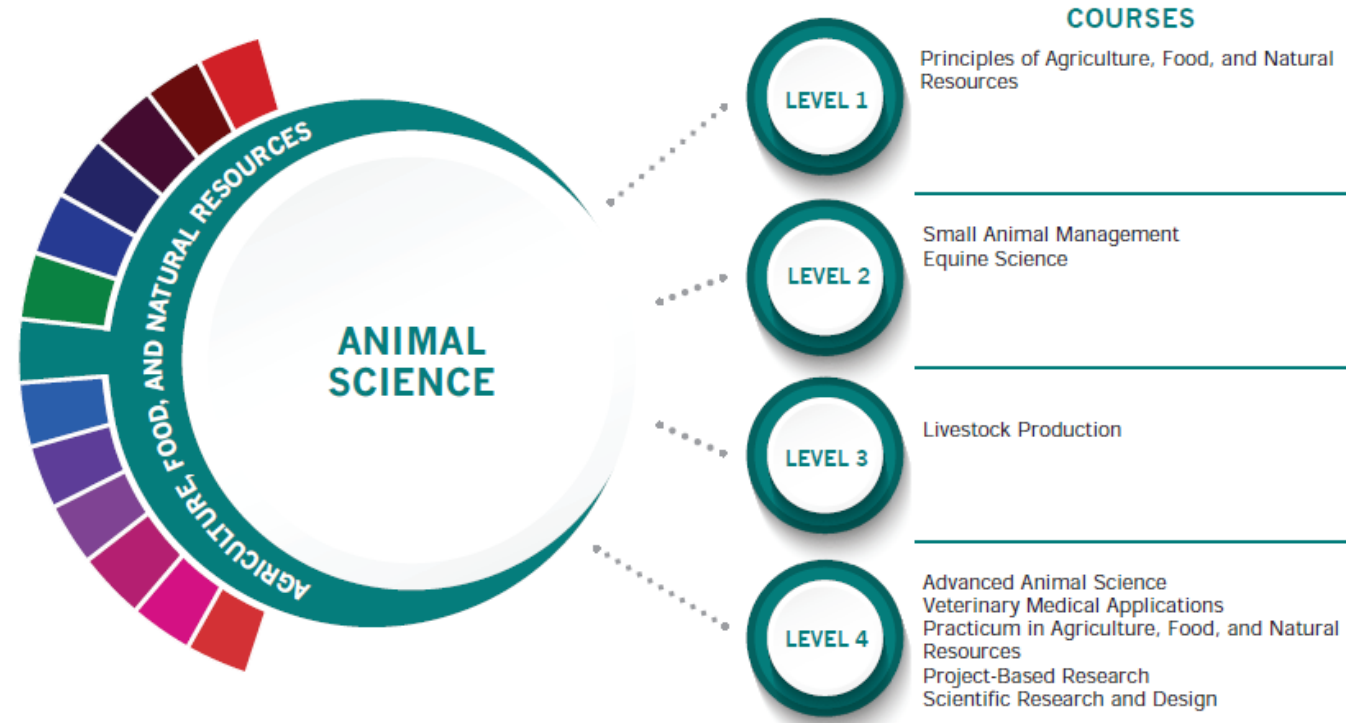
Programs of Study

Program of Study Definition

Programs of study are course sequences that prepare students with the knowledge and skills necessary for success in their chosen career. These sequences embed relevant, real world experiences and culminate in a postsecondary credential.

AGRICULTURE, FOOD, AND NATURAL RESOURCES

ANIMAL SCIENCE

COURSES

LEVEL 1 — Principles of Agriculture, Food, and Natural Resources

LEVEL 2 — Small Animal Management
Equine Science

LEVEL 3 — Livestock Production

LEVEL 4 — Advanced Animal Science
Veterinary Medical Applications
Practicum in Agriculture, Food, and Natural Resources
Project-Based Research
Scientific Research and Design

Why Programs of Study?

Strong vertical linkages between secondary and postsecondary credentials offer students broader opportunities to succeed in a globally competitive workforce.

Putting CTE to Work for Students, ExcelinEd, available at https://www.excelined.org/cte-playbook-series/

Program of Study Elements

Coordinated, non-duplicative sequence of academic and technical content	Addresses academic and technical knowledge, as well as employability skills	Alignment to the needs of the state, region, Tribal community, or local area
Courses that progress in content specificity	Multiple "entry and exit points" that allow for credentialing	Culminates in the attainment of a recognized postsecondary credential

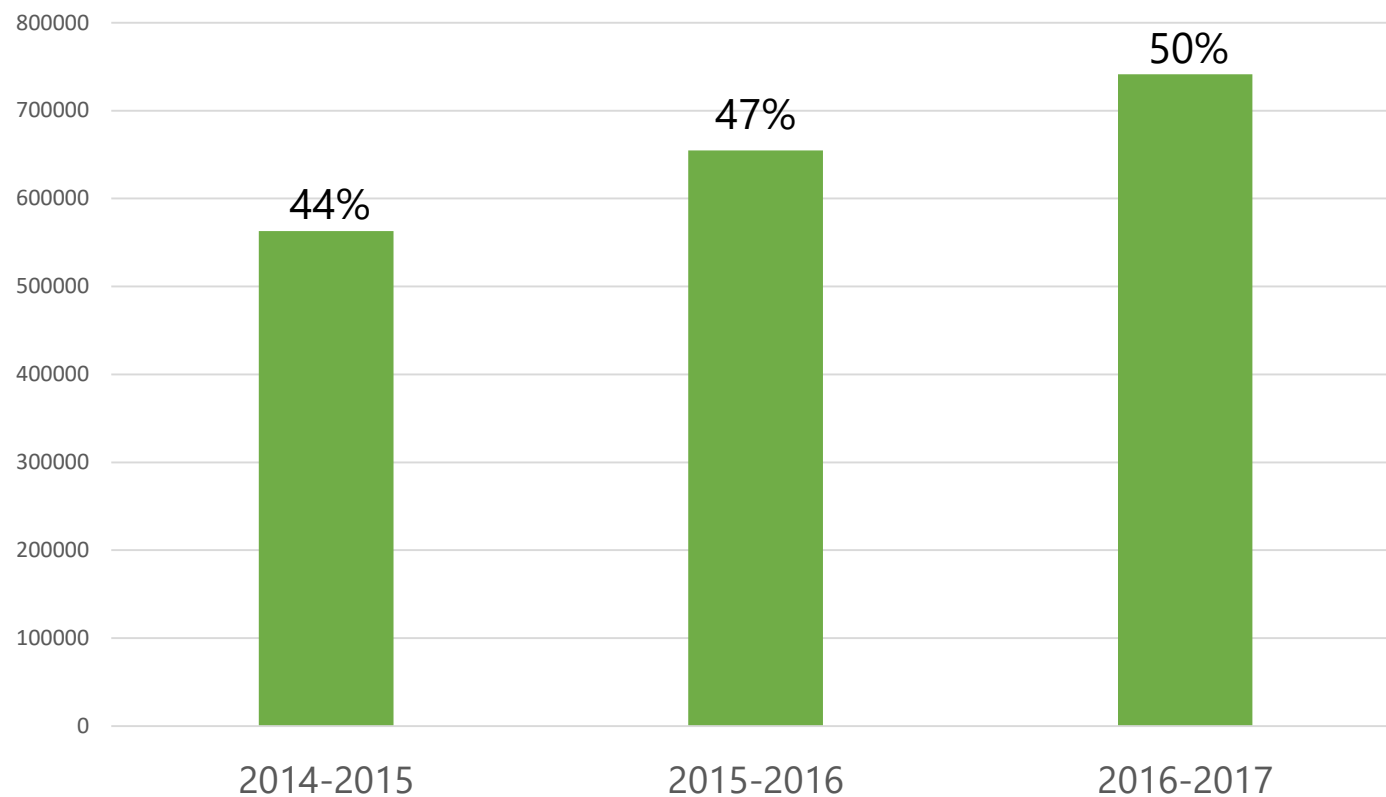# Benefits of Programs of Study

Provides students a career path with opportunities to continue directly into postsecondary and the workforce

Aligns education to the regional economy building off of the diverse needs of the Texas' economy

Allows for better data collection and reporting of CTE concentrators for districts

Creates stronger TEKS through recommendations for future gap analysis between course standards and job skills

Allows for flexibility in alignment of teacher certifications to the course sequencing

Current Reporting of CTE Concentrators

- *Number of CTE concentrators continues to rise*

- *Increase in the percentage of the graduating cohort concentrating in CTE*

Defines who is included in the accountability system

Important to Note: Current definition of a CTE concentrator allows a student to be marked as a concentrator without taking more than 2 courses. Concentrators are also identified by students who **"intend"** to concentrate.

Future Data for CTE in Texas

Agriculture, Food, & Natural Resources Programs of Study
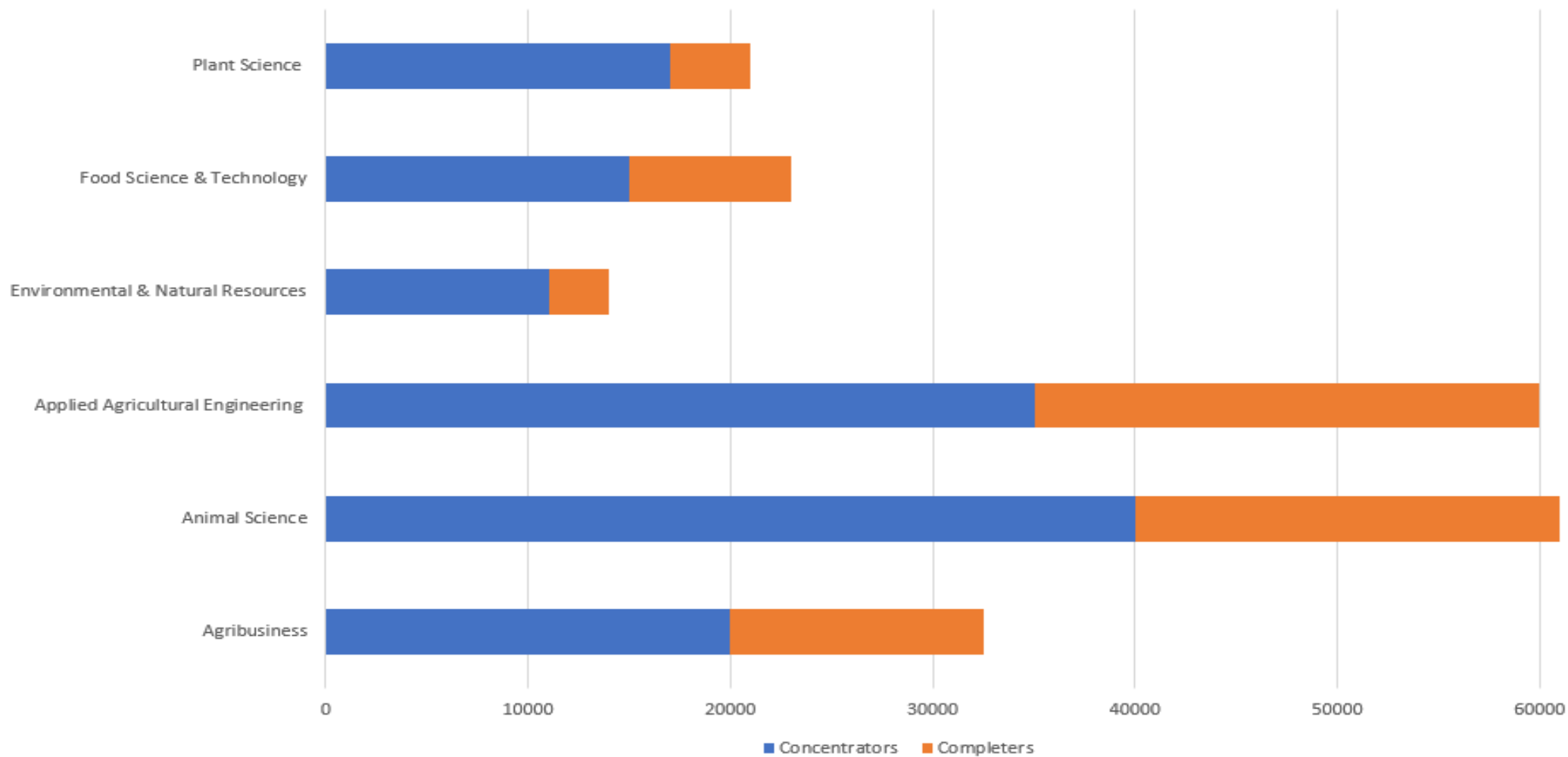
Benefits of Programs of Study

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# CTE Course Gap Analysis

Step 1

Create Job Profiles

Modernize your job analysis with Calibrate's highly customizable Job Profiles. Utilize more than 1,000 customizable templates to get you started.

JOB[1] PROFILES

Step 2

Validate with Industry

Collect feedback and gain insights directly from Industry Experts. See which skills are most critical, what's missing, and when skills are less relevant.

JOB[1] PROFILES
Feedback & Insights
INDUSTRY[2] VALIDATION
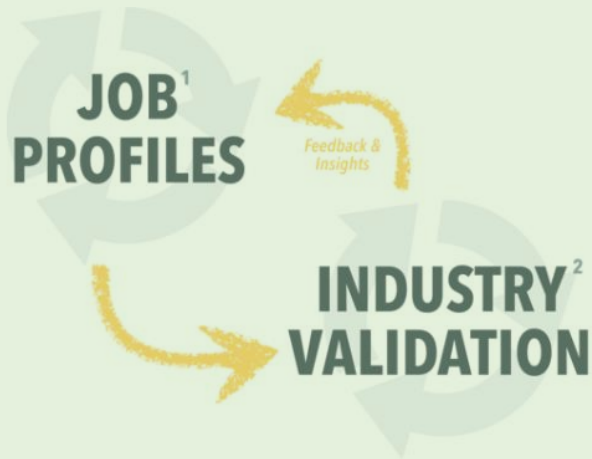
Step 3

Align Your Curriculum

Directly map curriculum to validated skill profiles based on industry needs. Calibrate eliminates lingering skill gaps so students are more employable.
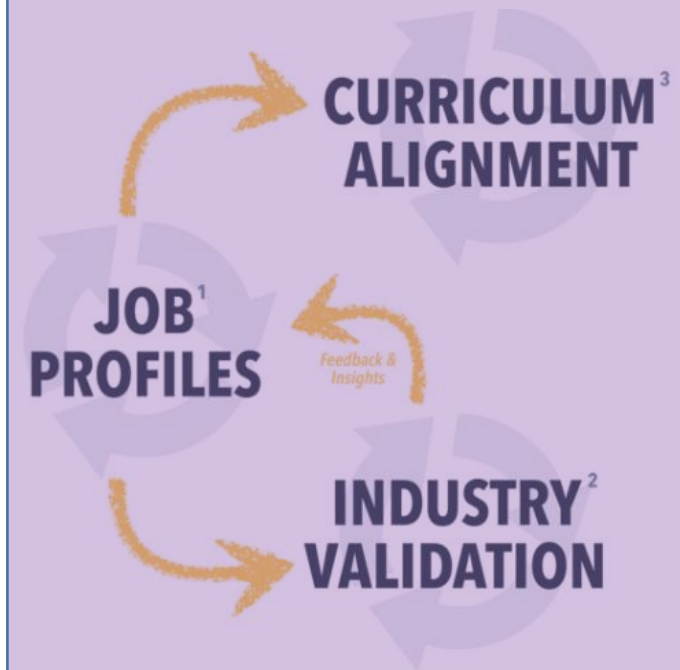
CURRICULUM[3] ALIGNMENT
JOB[1] PROFILES
Feedback & Insights
INDUSTRY[2] VALIDATION

Benefits of Programs of Study

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Program of Study Implementation Considerations

- Perkins funds can be used to **support** statewide or approved regional programs of study
  - State CTE Funds may be used to support all CTE courses.
- The **course sequences** within each program of study will be used for federal reporting of CTE concentrators
- The new federal definition for a CTE concentrator, as outlined in Perkins V, is the **completion of two courses** (for two or more credits) within a program of study
- Proposed definition for a CTE completer to be the **completion of three or more courses for four or more credits** including one level three or level four course

Implementation Timeline

2019-20	2020-21	2021-22	2022-23	2023-24
Planning year	Implementation Year 1	Implementation Year 2	Implementation Year 3	Implementation Year 4
Final snapshot collection of old concentrator definition	Transition year: collection of new concentrator definition	Collection of concentrators	Collection of concentrators	Collection of concentrators
No official monitoring	No official monitoring	No official monitoring	Monitoring for number of concentrators by program of study	Monitoring for number of concentrators by program of study
				Collection of completers of a program of study (baseline data)

Full implementation in 2023-2024

Program of Study Methodology

- Course sequencing designed to align to Texas's diverse economy
  - Identified high wage, in-demand occupations in Texas
    - Triangulation of labor market information
  - Grouped similar occupations into careers
  - Aligned with postsecondary training for advancement in careers

| Determine In-demand High-wage jobs | Group into Related Occupations | Validate Job Profiles with Industry | Develop Sequence of Aligned Courses | Convene Education & Workforce Summit | Publish Final Programs of Study |

Program of Study Methodology

- Identified high wage, in-demand occupations in Texas
  - Triangulation of labor market information
    - Foundation occupations were identified utilizing median growth rate of 17%, median annual salary of $35,339, and a minimum annual openings floor of 500, each based on the data from all occupations in Texas.
    - Occupations that were related to the foundation occupations were identified to form groupings of occupations and initial focus for programs of study.

Program of Study Methodology

- Grouped similar occupations into programs of study
- Aligned with postsecondary training for advancement in careers
  - Groupings of occupations were formed based on similarities in detailed work activities, common postsecondary training and education programs were identified in Bureau of Labor Statistics data and ONET.
  - These groupings of occupations were compared to the median data of all occupations in Texas.

Career Clusters

Labor market analysis identified several areas where occupations and postsecondary training overlap across career clusters. The areas of overlap include:

- Business, Marketing, and Finance
- Law, Public Safety, Corrections, & Security and Government & Public Administration.
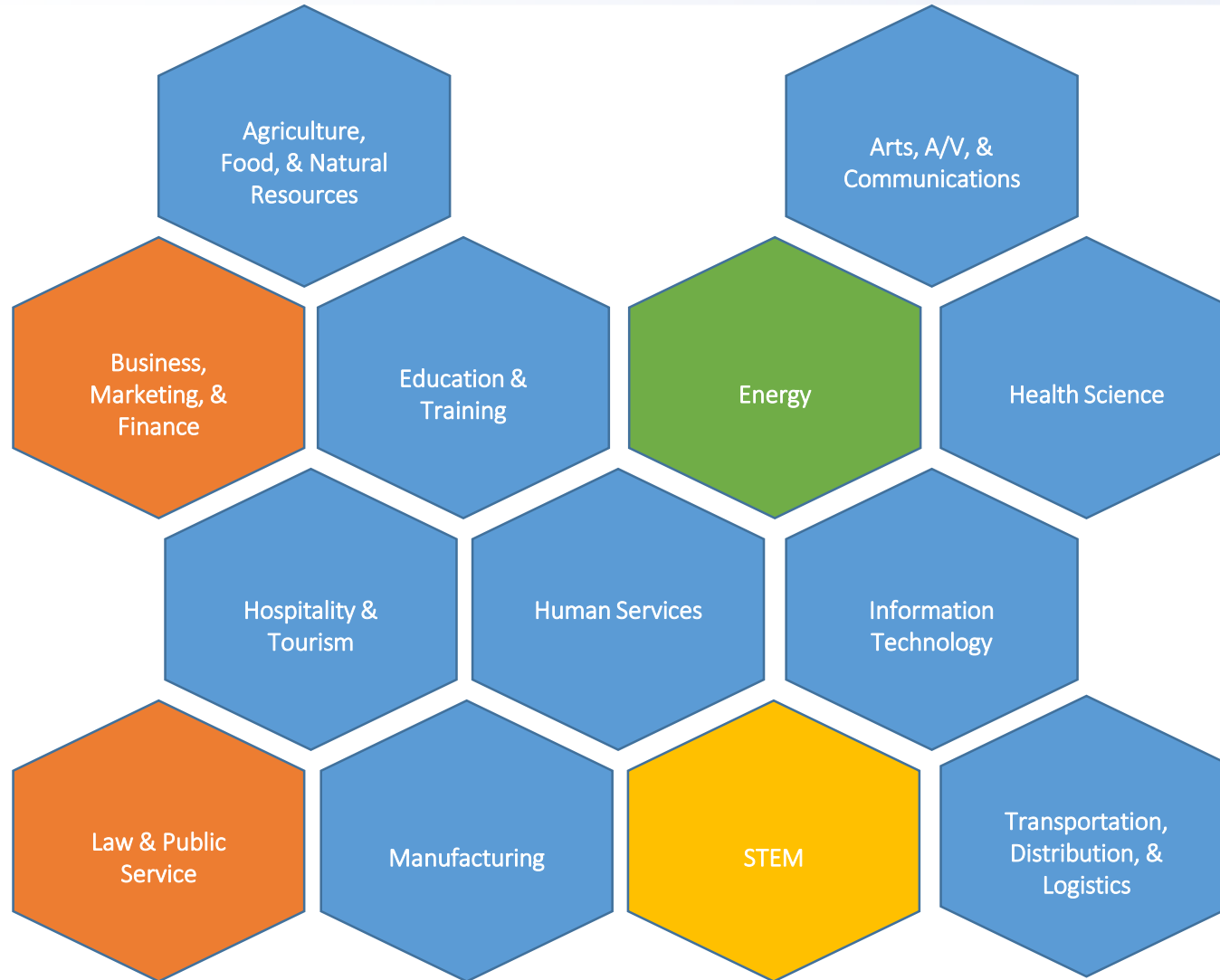
The Science, Technology, Engineering, and Math (STEM) cluster did not align with any one industry sector but rather had occupations spread throughout other clusters.

A new Energy career cluster was created to address Texas' diverse economic landscape.

Additional Topics for Stakeholder Feedback

- *Collect stakeholder feedback to determine whether to make recommendations to the State Board of Education.* TEA is soliciting feedback on following items which would require changes:
  - Add the **Energy Career Cluster** to §TAC Chapter 130 with corresponding courses.
  - Allow for **additional STEM** focused programs of study to qualify for the STEM endorsement.
  - Allow for **innovative courses** to serve as the final course to earn an endorsement.
  - Allow for a new **Practicum in Entrepreneurship** course to meet endorsements across multiple career clusters.
  - Revise the list of courses which are identified for funding as **advanced CTE courses**.

Public Comment Resources
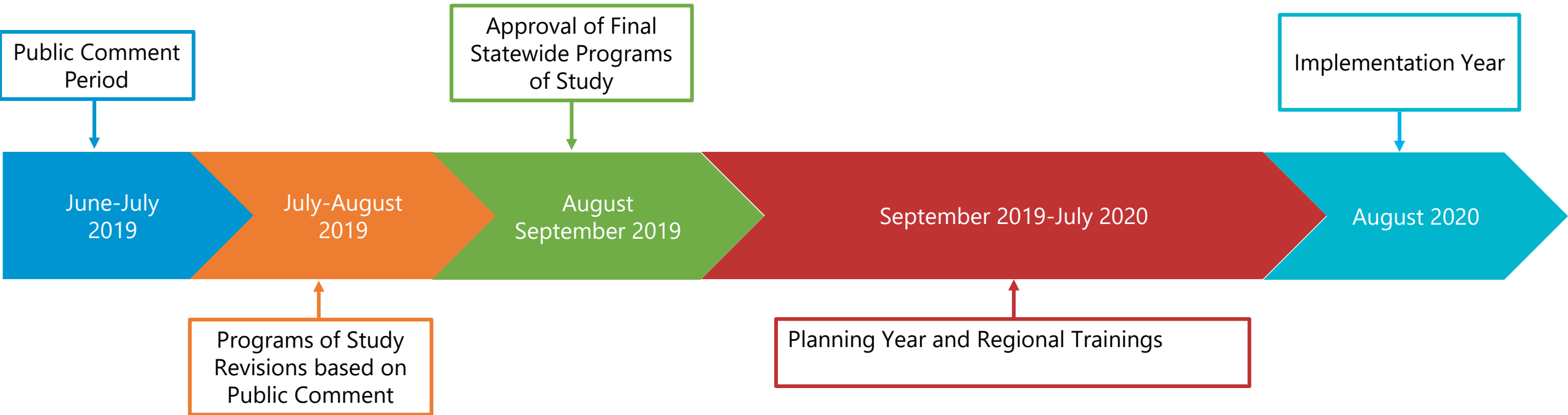
Programs of Study Public Comment

The program of study initiative is in alignment with the guidance from Perkins V. The six components of a high-quality program of study defined by Perkins were used to guide the development of the proposed programs of study. The components include:

- Coordinated, non-duplicative sequence of academic and technical content
- Courses that progress in content specificity
- Multiple entry and exit points that allow for credentialing
- Alignment to the needs of the state, region, or tribal community
- Addresses academic and technical knowledge, as well as employability skills
- Culminates in the attainment of a recognized postsecondary credential

Programs of Study Overview Webinar: *MP4*

Overview document of the programs of study initiative: *PDF*

Statewide Programs of Study At-a-Glance Spreadsheet: *Excel*   *Accessible Excel*

Programs of Study Course Sequences

- How to read the document:
  - Overview of each program of study course sequence options
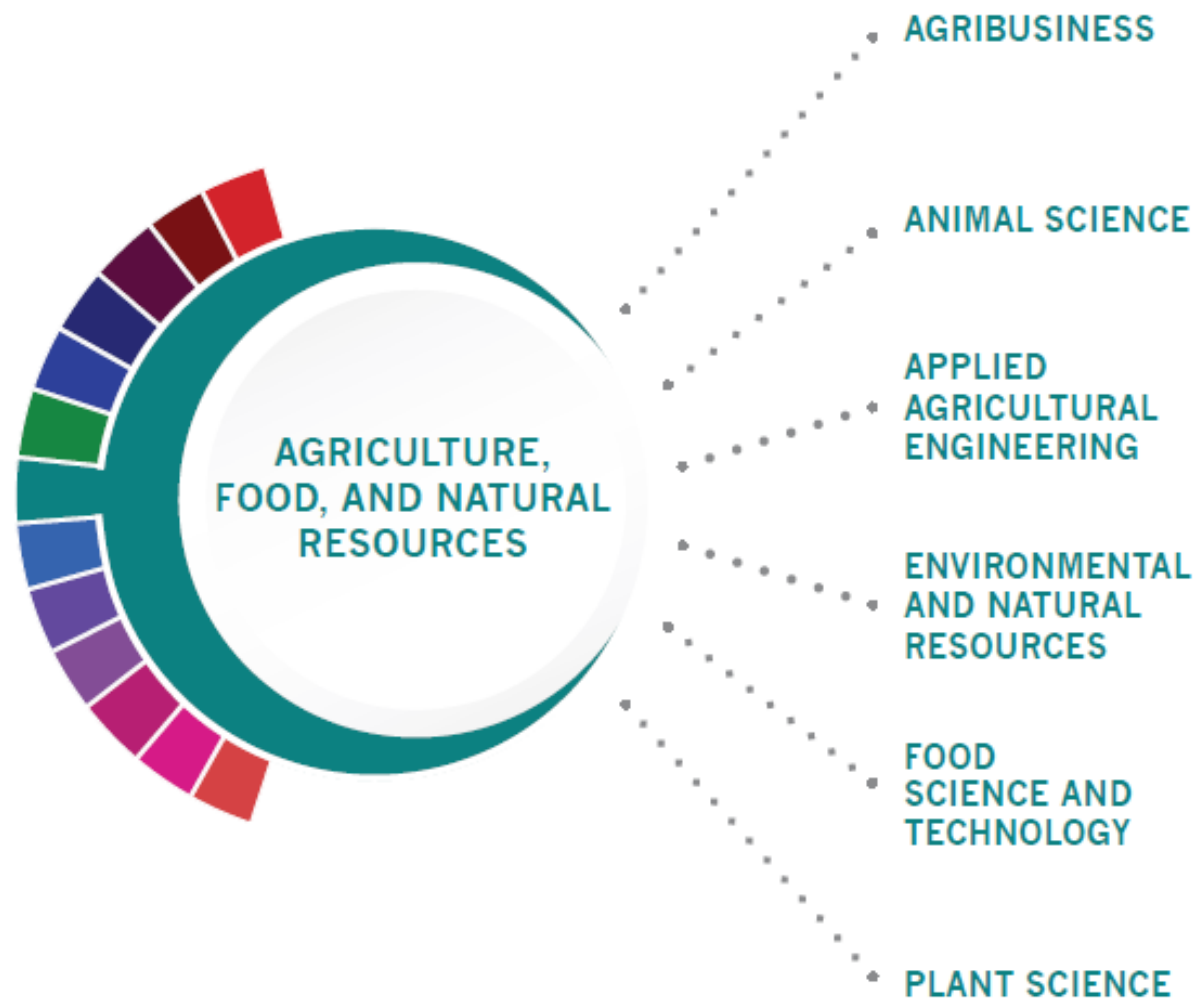 - Options within and across levels

Endorsement	Career Cluster	Sequence	Level 1 Courses*	Level 2 Courses*	Level 3 Courses*	Level 4 Courses*
Business & Industry OR STEM*	AG	Animal Science	Principles of AFNR (13000200)	Small Animal Management (13000400)	Livestock Production/Lab (13000300 or 13000310)	Advanced Animal Science (13000700)
				Equine Science (13000500)		Veterinary Medical Applications/Lab (13000600 or 13000610)
						Scientific Research and Design (13037200)
						Project-Based Research (12701500)
						Practicum in Agriculture, Food, and Natural Resources (13002500 or 13002505)

Statewide programs of study resources have been created and include labor market information related to occupations, postsecondary options, and course sequences. Below you will find these resources organized by career cluster:
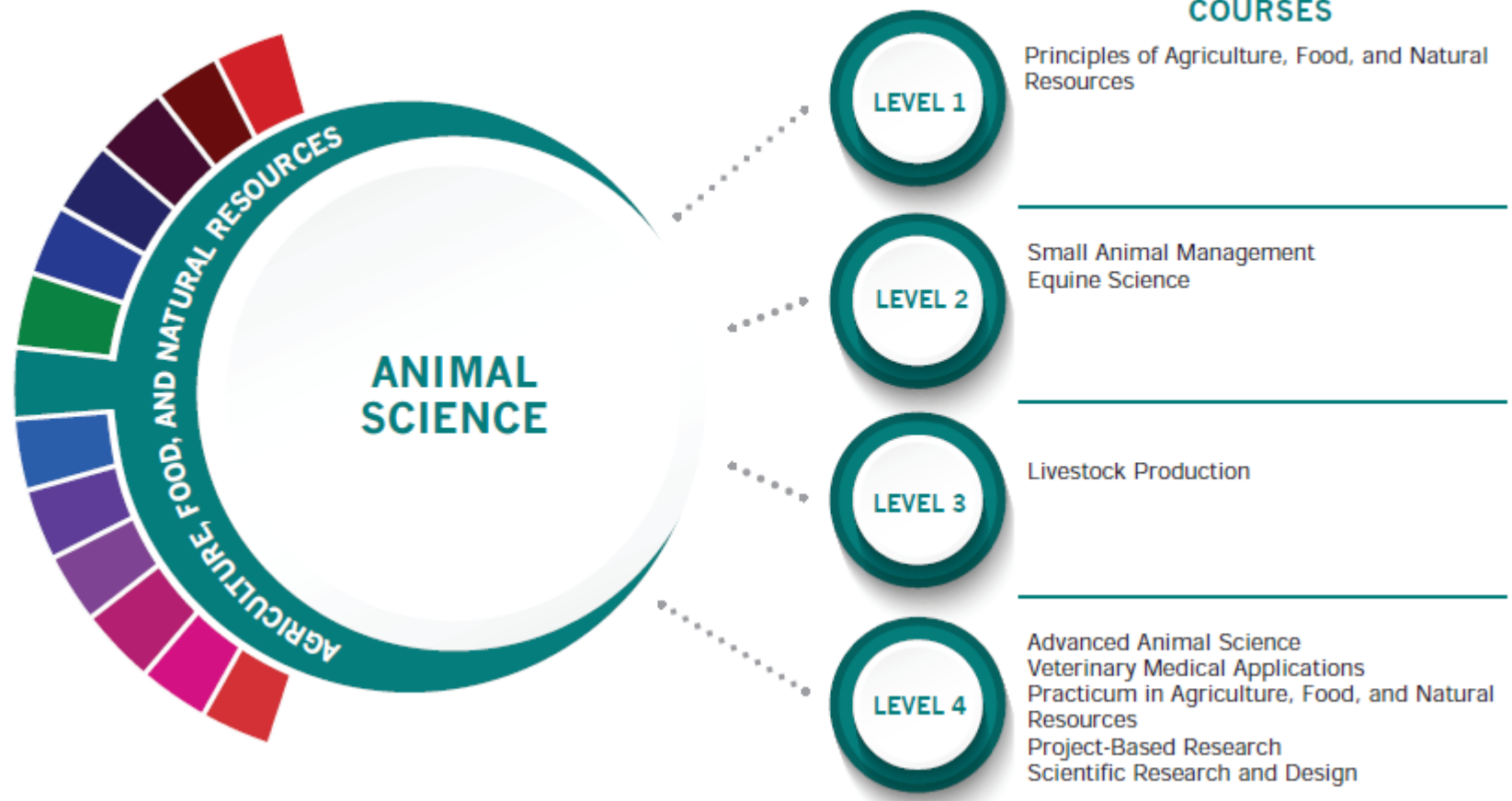
Statewide Programs of Study Resources		
Agriculture PDF	Education and Training PDF	Information Technology PDF
Architecture & Construction PDF	Health Science PDF	Law & Public Safety and Government Admin PDF
Arts, AV, Tech, & Communication PDF	Hospitality & Tourism PDF	Manufacturing PDF
Business, Marketing, & Finance PDF	Human Services PDF	Transportation, Logistics, & Distribution PDF
Energy PDF * Proposed new career cluster		*STEM occupations integrated in other career clusters

Accessible versions

AGRIBUSINESS

ANIMAL SCIENCE

APPLIED AGRICULTURAL ENGINEERING

ENVIRONMENTAL AND NATURAL RESOURCES

FOOD SCIENCE AND TECHNOLOGY

PLANT SCIENCE

AGRICULTURE, FOOD, AND NATURAL RESOURCES

Programs of Study Frameworks

Connections to postsecondary credentials as well as wage information for related careers in Texas

POSTSECONDARY OPTIONS

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Licensed Veterinary Technician	Pet Groomer	Food Science and Technology	Animal Sciences	Genetics
Feedyard Technician in Cattle Care and Handling	Veterinary Technician	Veterinary Studies	Agriculture	Veterinary Medicine
Certified Veterinary Assistant	Licensed Breeder	Biotechnology Laboratory Technician	Biology	Biological and Physical Sciences
		Biology Technician	Zoology/ Animal Biology	Biological and Biomedical Sciences

Additional industry based certification information is available from the TEA CTE website.

For more information on postsecondary options for this program of study, visit TXCTE.org.

OCCUPATIONS	MEDIAN WAGE	ANNUAL OPENINGS	% GROWTH
Animal Breeders	$39,135	28	9%
Animal Scientists	$57,533	22	12%
Medical Scientists	$63,898	435	27%
Veterinarians	$93,496	294	24%
Zoologists and Wildlife Biologists	$67,309	45	32%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities: Texas FFA

Career Prep Activities: Agri-Science Fair 4H Volunteer at a local farm or veterinary office

Programs of Study Frameworks

Description of the program of study and related career cluster

The Animal Science program of study focuses on the science, research, and business of animals and other living organisms. It teaches students how to apply 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 may also research and analyze the growth and destruction of species and research or diagnose diseases and injuries of animals.

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 a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist.

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

Program of Study Draft for Public Comment June 2019

Programs of Study Frameworks

At-a-glance scheduling information

COURSE INFORMATION

COURSE NAME	SERVICE ID	PRE REQS CO REQS REC REQS	GRADE
Principles of Agriculture, Food, and Natural Resources	13000200	None	9-12
Small Animal Management	13000400	None	10-12
Equine Science	13000500	None	10-12
Livestock Production/Lab	13000310 (1 credit) 13000310 (2 credits)	None	10-12
Advanced Animal Science	13000700	PREQ: Biology and Chemistry or Integrated Physics and Chemistry (IPC); Algebra I and Geometry; and either Small Animal Management, Equine Science, or Livestock Production; RPREQ: Veterinary Medical Applications	11-12
Veterinary Medical Applications/Lab	13000600 (1 credit) 13000610 (2 credits)	PREQ: Equine Science, Small Animal Management, or Livestock Production	11-12
Practicum in Agriculture, Food, and Natural Resources	13002500 (2 credits) 13002505 (3 credits)	RPREQ: A minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster	11-12
Project-Based Research	12701500	None	11-12
Scientific Research and Design	13037200	PREQ: Biology, Chemistry, Integrated Physics, and Chemistry (IPC), or Physics	11-12

FOR ADDITIONAL INFORMATION ON THE AGRICULTURE, FOOD, AND NATURAL RESOURCES CAREER CLUSTER, PLEASE CONTACT:
Amanda Brantley | Amanda.Brantley@tea.texas.gov
https://tea.texas.gov/cte

Public Comment Resources

Alignment opportunities have been identified between occupational skills and course standards. In some cases, new courses need to be created in order to build course sequences to prepare students for in-demand and high wage occupations. Some existing courses do not align to identified in-demand, high wage occupations and were not included in proposed statewide programs of study. The document below highlights proposed courses and courses not included in a statewide program of study.

Programs of Study Course Alignment Recommendations: **PDF**

Districts may request regional programs of study with course sequences supported by regional workforce data. A regional program of study application process will be made available once the statewide programs of study list is finalized. It is recommended that the following example programs of study be made available for application.

Regional Example Programs of Study At-a-Glance: **Excel File   Accessible Excel**

Regional Example Programs of Study Resource: **PDF**

Online Feedback Form

- Public Comment opens June 6th through July 19th
- Comments and feedback should be submitted through the online form located on the TEA CTE website
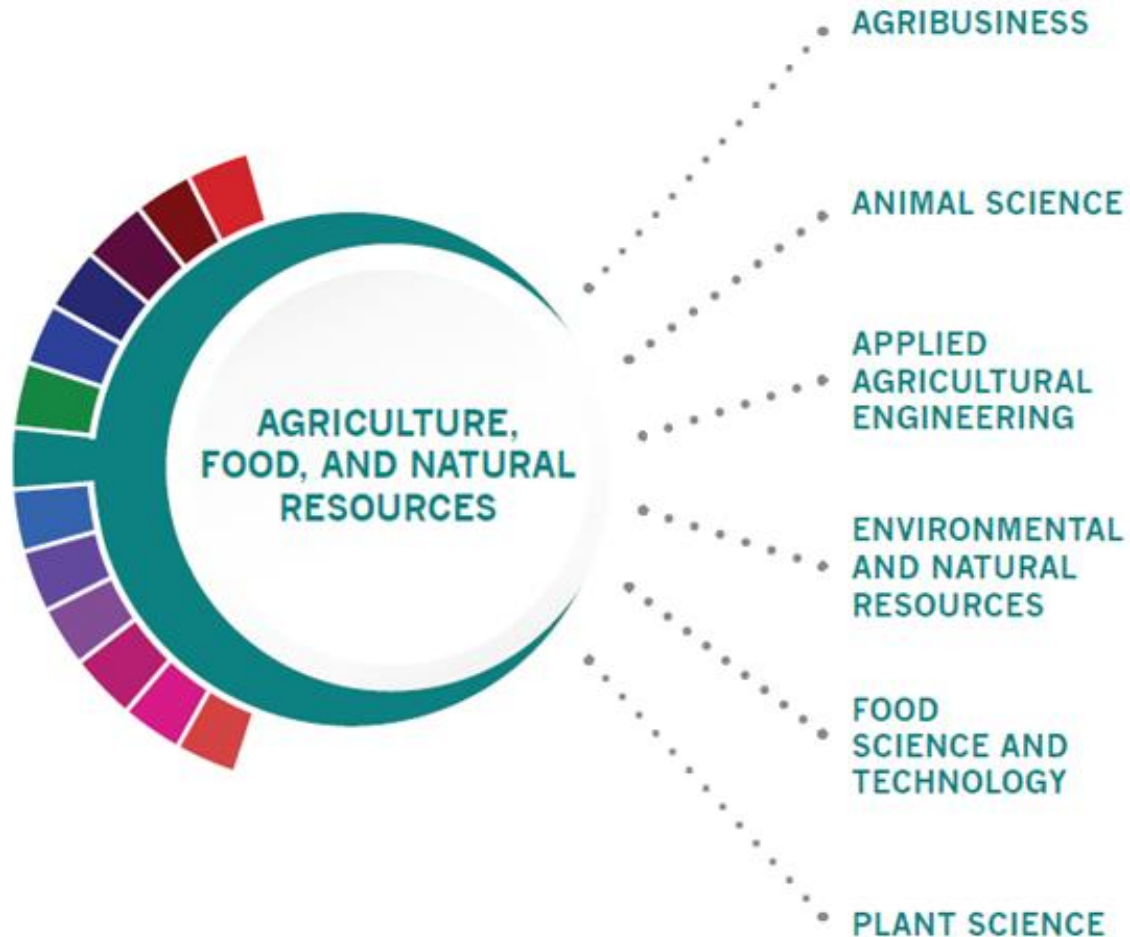
Stakeholders are asked to review the proposed statewide programs of study and provide comments. Stakeholder feedback will be considered prior to final recommendations.

Here you will find a link to the electronic form: **Public Comment Electronic Form Link**

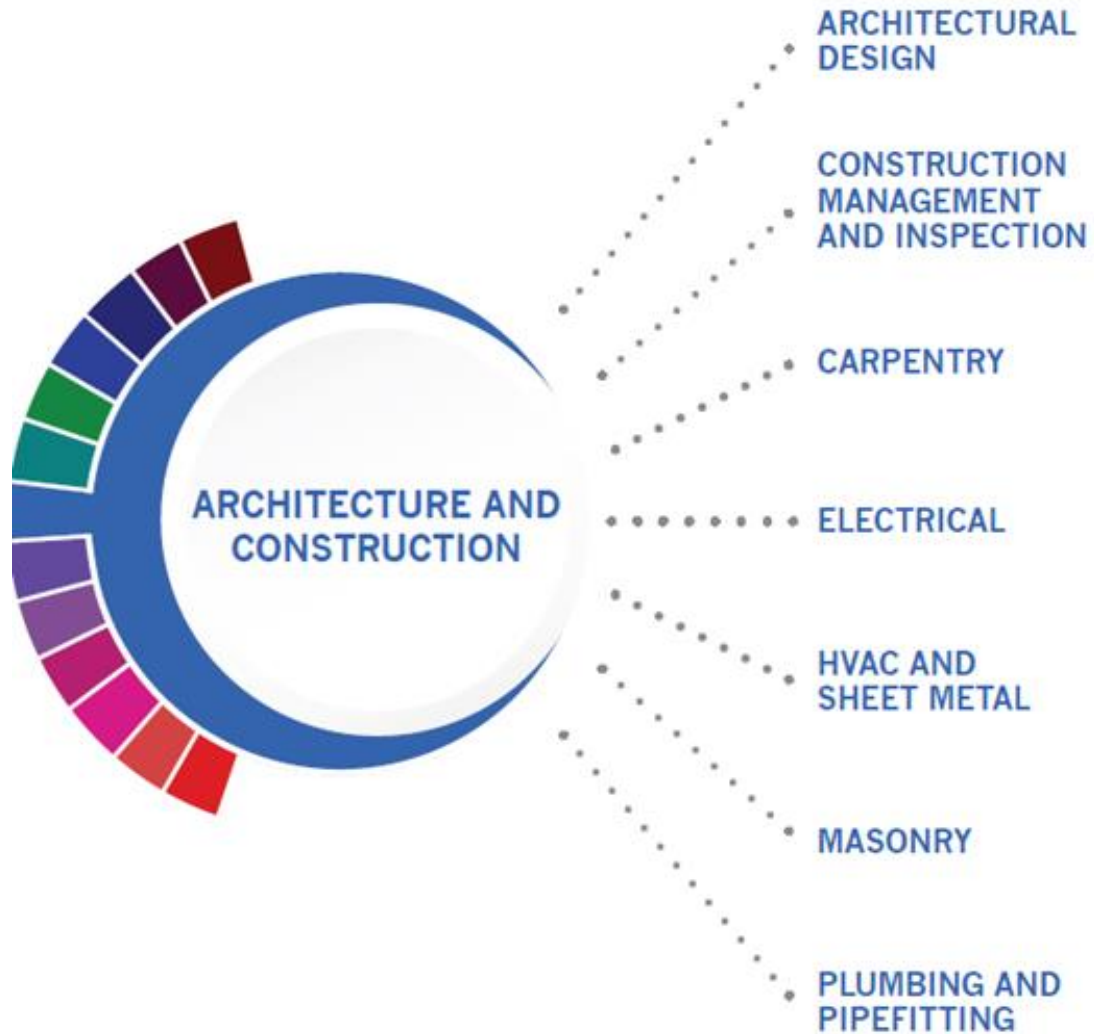Programs of Study
by Career Cluster

Agriculture, Food, & Natural Resources

- Six Programs of Study aligned to in-demand & high-wage occupations in Texas
- STEM related occupations within Agriculture

Contact: Amanda Brantley
Amanda.Brantley@tea.Texas.gov

Architecture & Construction

ARCHITECTURAL DESIGN

CONSTRUCTION MANAGEMENT AND INSPECTION

CARPENTRY

ARCHITECTURE AND CONSTRUCTION

ELECTRICAL

HVAC AND SHEET METAL

MASONRY

PLUMBING AND PIPEFITTING
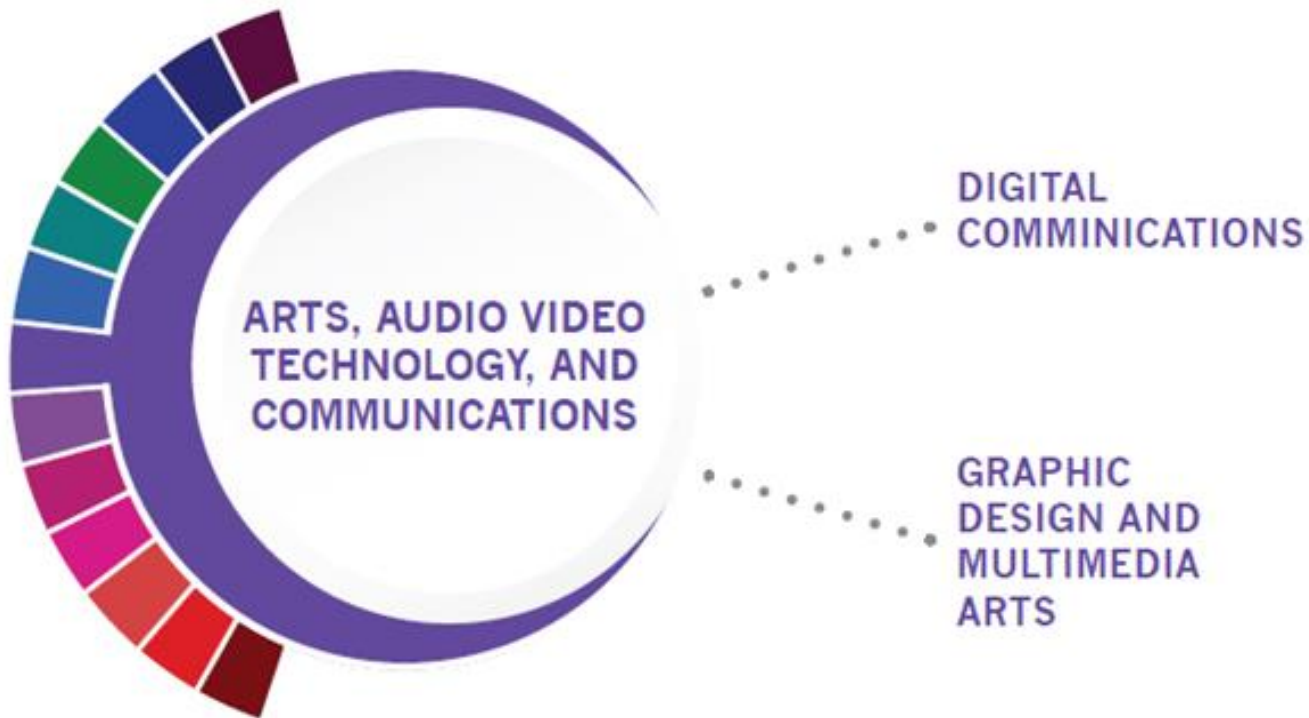
- Seven Programs of Study aligned to in-demand & high-wage occupations in Texas
- Regional Program of Study Option
  - Interior Design
- Innovative Course Request

Contact: Amanda Brantley
Amanda.Brantley@tea.Texas.gov

Arts, Audio Video Technology, & Communications

DIGITAL COMMINICATIONS

ARTS, AUDIO VIDEO TECHNOLOGY, AND COMMUNICATIONS

GRAPHIC DESIGN AND MULTIMEDIA ARTS

- Two Programs of Study aligned to in-demand & high-wage occupations in Texas
- Regional Program of Study option
  - Fashion Design

Contact: Laura Torres
Laura.Torres@tea.Texas.gov

Business, Marketing, & Finance

ACCOUNTING AND FINANCIAL SERVICES

BUSINESS MANAGEMENT

BUSINESS, MARKETING, AND FINANCE

ENTREPRENEURSHIP

MARKETING AND SALES

- Four Programs of Study aligned to in-demand & high-wage occupations in Texas
- Combined into one career cluster due to similar industries
- Flexibility of Entrepreneurship Practicum

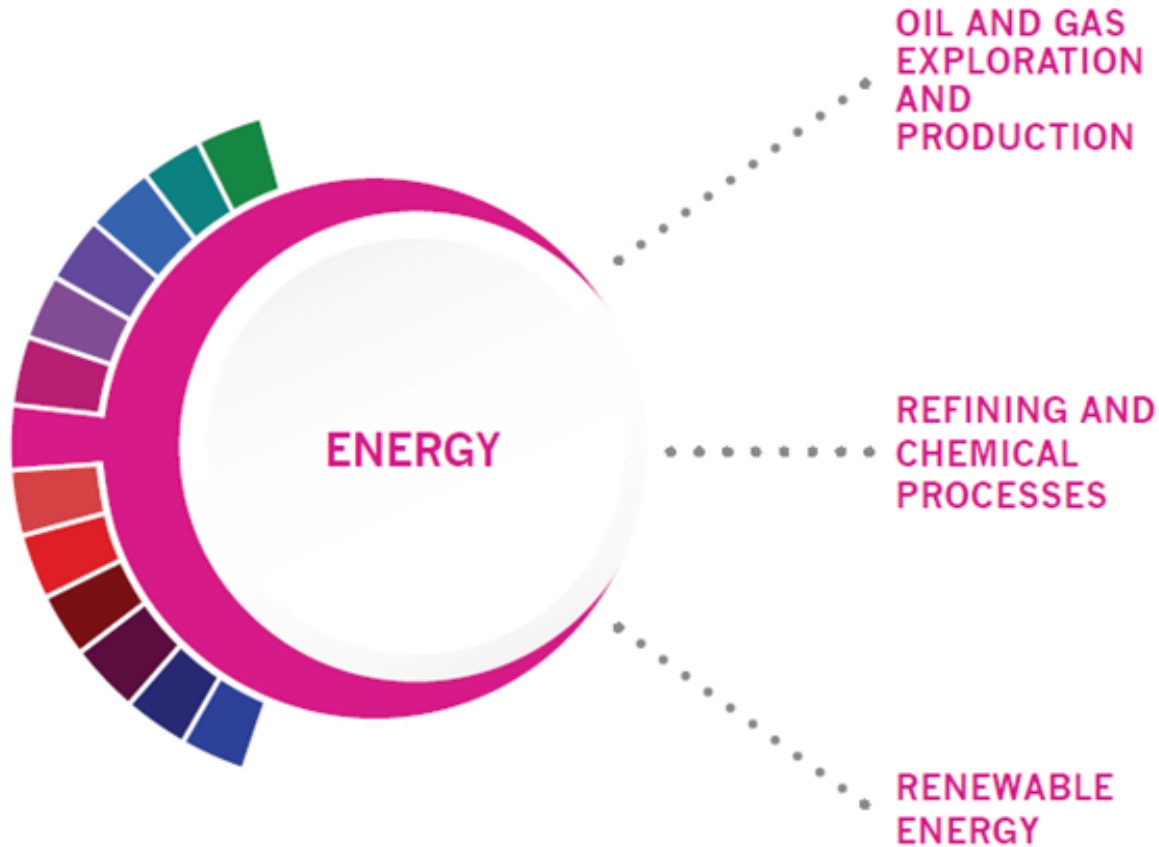Contact: Dale Fowler
Dale.Fowler@tea.Texas.gov

Education and Training

- Two Programs of Study aligned to in-demand & high-wage occupations in Texas
- Innovative course request

Contact: Debbie Wieland
Debbie.Wieland@tea.Texas.gov

Energy

OIL AND GAS EXPLORATION AND PRODUCTION

ENERGY

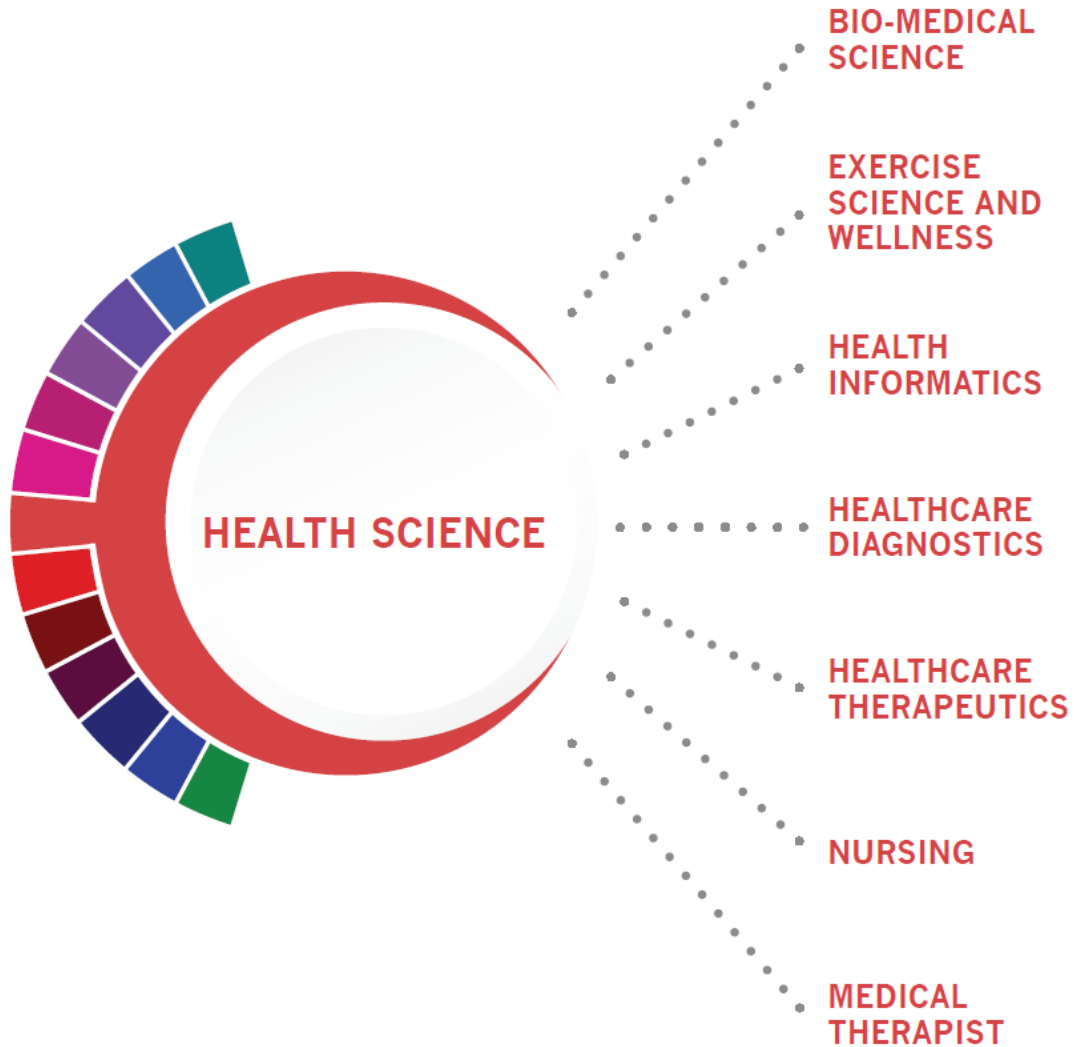REFINING AND CHEMICAL PROCESSES

RENEWABLE ENERGY

- New Career Cluster
- Three Programs of Study aligned to in-demand & high-wage occupations in Texas
- Innovative course request

Contact: Laura Torres
Laura.Torres@tea.Texas.gov

Health Science

BIO-MEDICAL SCIENCE

EXERCISE SCIENCE AND WELLNESS

HEALTH INFORMATICS

HEALTH SCIENCE

HEALTHCARE DIAGNOSTICS

HEALTHCARE THERAPEUTICS

NURSING

MEDICAL THERAPIST

- Significantly expanded opportunities within Health Science
- Seven Programs of Study aligned to in-demand & high-wage occupations in Texas
- Innovative course request

Contact: Kevin Johnson
Kevin.Johnson@tea.Texas.gov

Hospitality & Tourism

CULINARY ARTS

HOSPITALITY AND TOURISM

LODGING AND RESORT MANAGEMENT

TRAVEL, TOURISM, AND ATTRACTIONS

- Three Programs of Study aligned to in-demand & high-wage occupations in Texas
- Innovative course request

Contact: Debbie Wieland
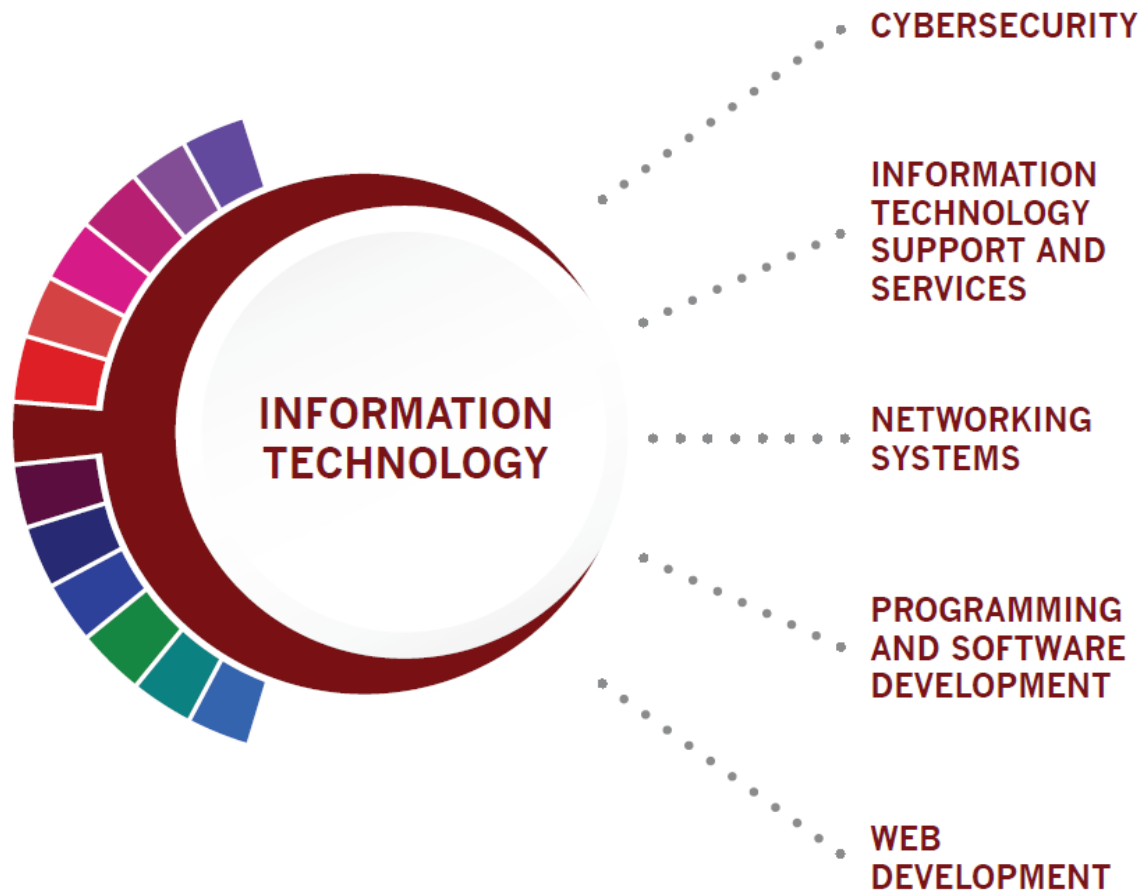Debbie.Wieland@tea.Texas.gov

Human Services

FAMILY AND COMMUNITY SERVICES

HUMAN SERVICES

HEALTH AND WELLNESS
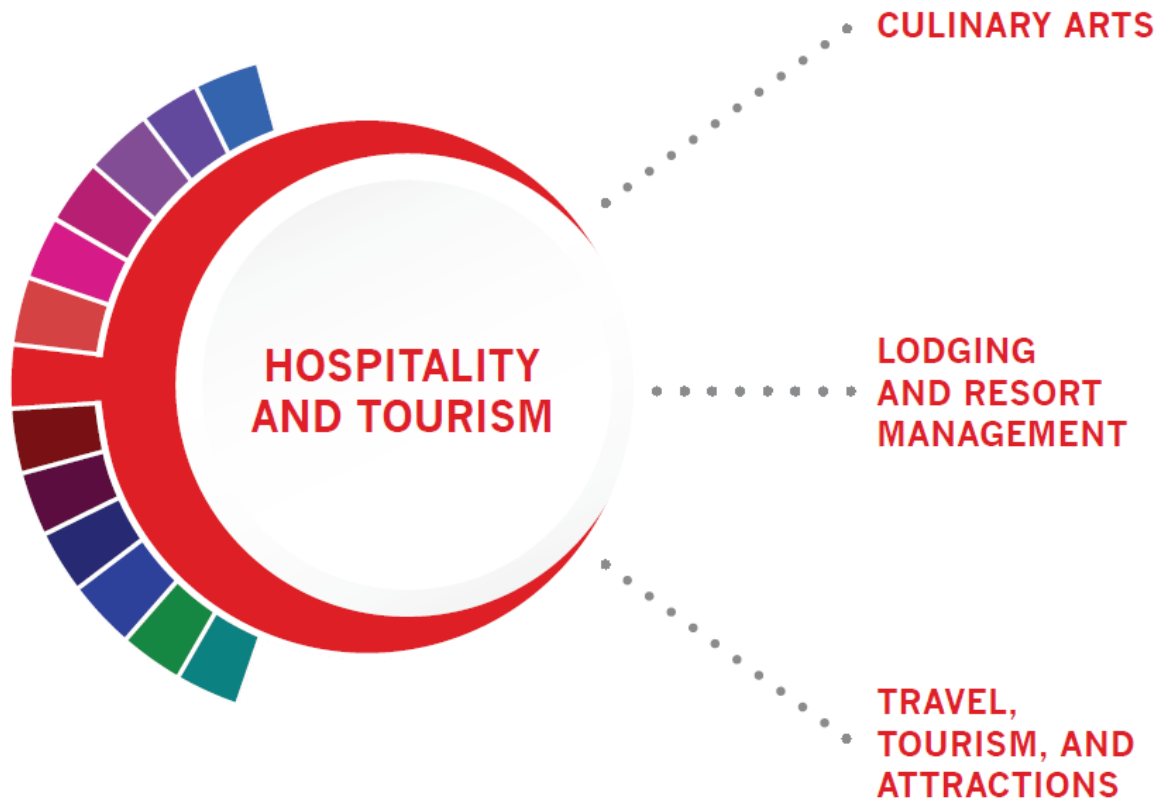
- Two Programs of Study aligned to in-demand & high-wage occupations in Texas
- Regional Program of Study options
  - Barbering
  - Cosmetology

Contact: Debbie Wieland
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Information Technology

CYBERSECURITY

INFORMATION TECHNOLOGY SUPPORT AND SERVICES

NETWORKING SYSTEMS

PROGRAMMING AND SOFTWARE DEVELOPMENT

WEB DEVELOPMENT
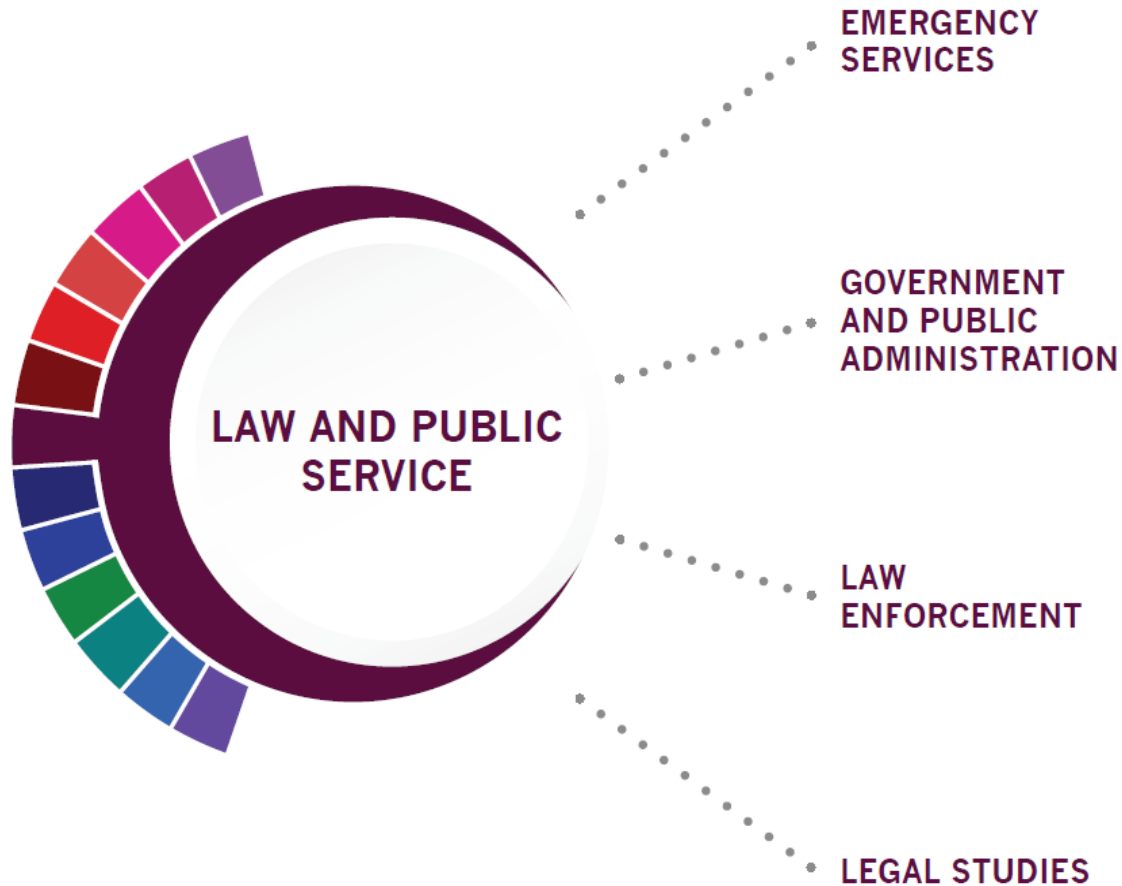
- Five Programs of Study aligned to in-demand & high-wage occupations in Texas
- Innovative course request
- Incorporation of Tech Apps

Contact: Laura Torres
Laura.Torres@tea.Texas.gov

Law and Public Service

EMERGENCY SERVICES

GOVERNMENT AND PUBLIC ADMINISTRATION

LAW AND PUBLIC SERVICE

LAW ENFORCEMENT

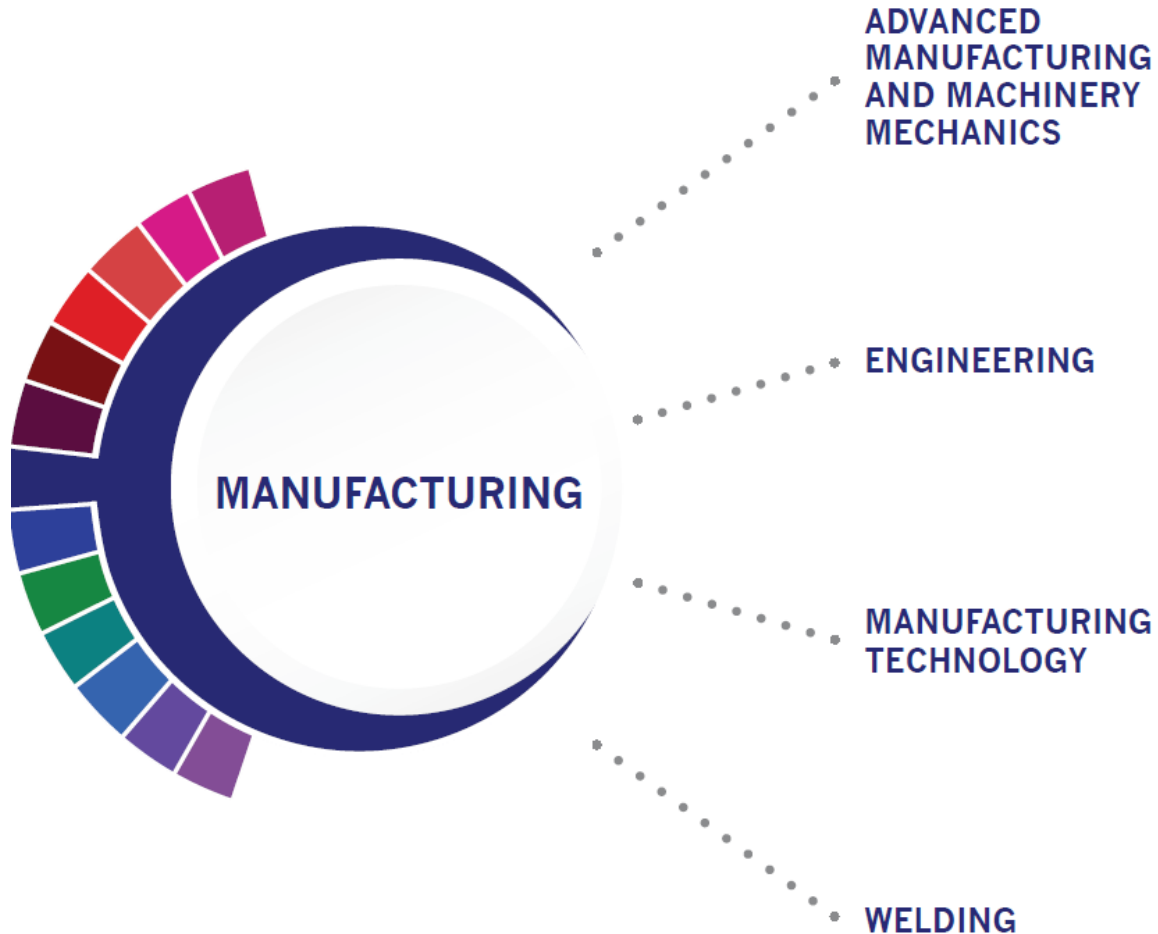LEGAL STUDIES

- Four Programs of Study aligned to in-demand & high-wage occupations in Texas
- Combined into one career cluster due to similar industries
- Innovative course request

Contact: Dale Fowler
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Manufacturing

ADVANCED MANUFACTURING AND MACHINERY MECHANICS

ENGINEERING

MANUFACTURING TECHNOLOGY

WELDING
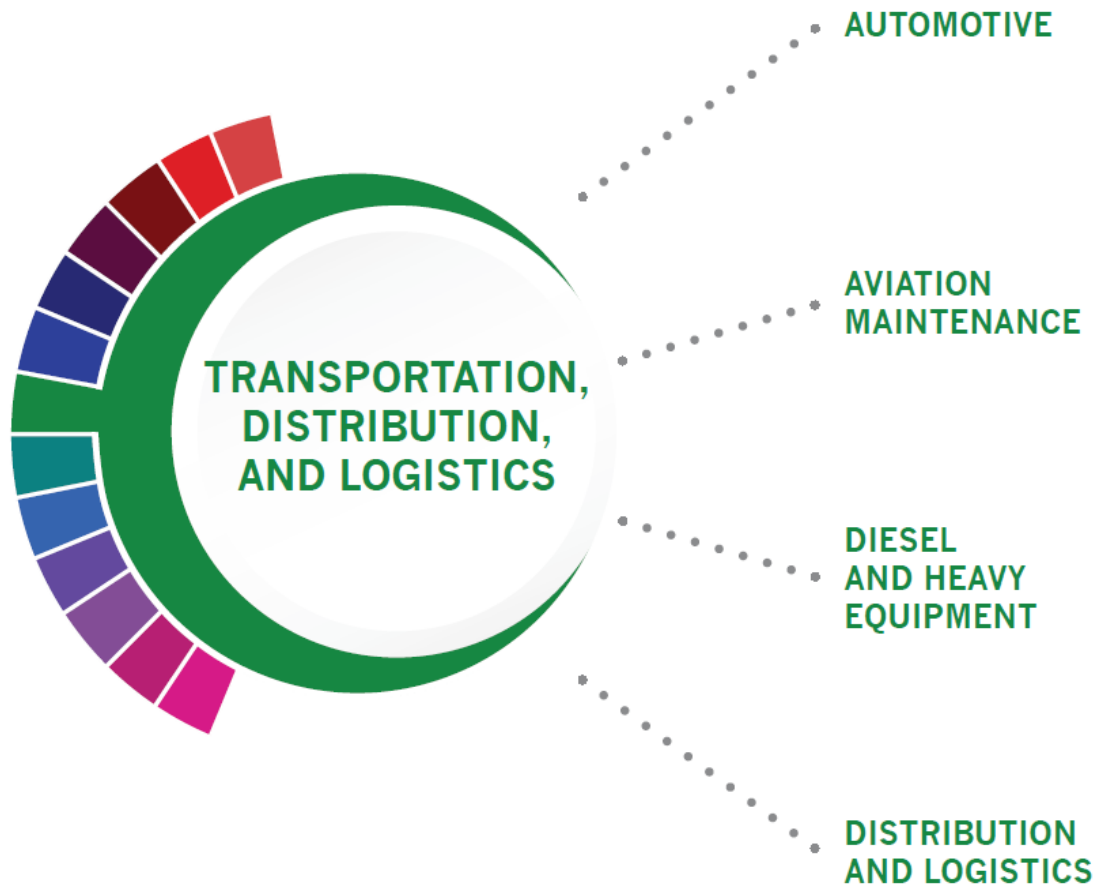
- Four Programs of Study aligned to in-demand & high-wage occupations in Texas
- STEM related occupations within Manufacturing

Contact: Amanda Brantley
Amanda.Brantley@tea.Texas.gov

Transportation, Distribution, and Logistics

AUTOMOTIVE

AVIATION MAINTENANCE

TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

DIESEL AND HEAVY EQUIPMENT

DISTRIBUTION AND LOGISTICS

- Four Programs of Study aligned to in-demand & high-wage occupations in Texas
- Regional Program of Study options
  - Flight
  - Maritime
- Innovative course request

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