Katy ISD Career and Technical Education (CTE) Program Accomplishments

Agriculture, Food, and Natural Resources

The Agriculture, Food, and Natural Resources program offers four Programs of Study:

- **Animal Science**
- **Plant Science**
- **Environmental and Natural Resources**
- **Ag Welding**

Students develop leadership, technical, and industry-specific skills through classroom instruction, hands-on experiences, and competitions. The Katy ISD FFA CDE and LDE teams consistently achieve success at the state and national levels. Additionally, students showcase projects at the Katy ISD Livestock Show each year. During the 2023-2024 school year, the Katy ISD Livestock Show raised over $989,000 for students that participated in the Livestock Show!

Instructional Area: Animal Science

Classroom Happenings

Students in the Animal Science program participate in hands-on learning experiences to develop animal care, veterinary, and livestock management skills. They intern at veterinary clinics in Katy and attend industry-related field trips, such as visiting the Great Southwest Equestrian Center to observe horse shows and equine professionals.

Topics Covered:

- Anatomy & Physiology – Structure and function of animals
- Animal Behavior – Interaction with humans and other animals
- Health & Disease Prevention – Proper veterinary care and biosecurity
- Nutrition & Feeding – Diet management for small and large animals
- Reproduction & Genetics – Breeding, reproductive systems, and genetics
- Safe Handling Techniques – Livestock handling and restraint practices
- Animal Selection & Evaluation – Identifying livestock for breeding and production
- Tack & Grooming – Horse tack usage, maintenance, and grooming
- Production & Livestock Management – Raising animals for agricultural purposes
- Careers in Animal Science – Veterinary medicine, livestock production, equine management

Industry Skills Achieved

- 79 Elanco Fundamentals of Animal Science Certifications
- 72 Elanco Veterinary Medical Applications Certifications
- 52 Certified Veterinary Assistant Certifications
- Soft Skills Gained: Communication, problem-solving, adaptability, teamwork, professionalism, and attention to detail.

Instructional Area: Plant Science

Classroom Happenings

Students in the Plant Science program gain expertise in floral design, horticulture, and agribusiness. Through hands-on projects, students create floral arrangements that meet

industry standards. One of the most popular projects is the Valentine's Day Candy Arrangement, where students apply design principles, pricing strategies, and customer service skills.

Math is integrated into the Floral Design course, where students learn price arrangements and calculate costs, markups, and labor expenses. Additionally, students apply science concepts through plant biology and soil science activities.

Topics Covered:

- Plant Biology & Soil Science – Understanding plant growth, nutrition, and soil relationships
- Horticulture Principles – Cultivation and care of plants and flowers
- Plant Identification – Recognizing different flowers, foliage, and plants
- Floral Business Management – Running a retail floral shop and customer interactions
- Design Techniques & Aesthetics – Creating floral arrangements for special events
- Floral Tools & Equipment Usage – Handling floral design tools and chemicals safely
- Career Exploration – Opportunities in plant science, research, and agribusiness

Industry Skills Achieved

- 685 Benz School of Floral Design Certifications
- 30 Texas State Florist's Association of Knowledge Based Floral Certifications
- Soft Skills Gained: Creativity, communication, teamwork, problem-solving, customer service, and time management

Instructional Area: Environmental & Natural Resources

Classroom Happenings

Students in the Environmental and Natural Resources program focus on conservation, ecology, and sustainable resource management. A highlight of the program is the boater education unit, where students visit the Houston Boat Show to reinforce safety and navigation concepts. Additionally, students engage in fishing expeditions at the Katy ISD Ag Science facility to apply their knowledge of aquatic ecosystems.

Topics Covered:

- Wildlife Identification & Taxonomy – Classification and recognition of wildlife species
- Habitat Ecology & Conservation – Environmental factors affecting wildlife populations
- Population Dynamics – Factors influencing animal population growth and sustainability
- Wildlife & Fisheries Management – Techniques for monitoring and maintaining biodiversity
- Soil & Water Conservation – Sustainable land use practices and watershed management
- Range Management & Grazing Practices – Maintaining healthy rangeland ecosystems
- Environmental Law & Policy – Regulations affecting conservation and land use
- Field Research Techniques – Data collection, environmental monitoring, and reporting
- Career Exploration – Careers in environmental science, conservation, and resource management

Industry Skills Achieved

- 57 Ducks Unlimited Certification
- 54 Boater Safety
- 66 Hunters' Education
- Soft Skills Gained: Critical thinking, teamwork, problem-solving, adaptability, leadership, and scientific analysis

Instructional Area: Ag Welding

Classroom Happenings

Students in the Ag Welding program develop technical welding and fabrication skills while working on industry-aligned projects. They learn MIG, TIG, and stick welding techniques, along with blueprint reading, metal fabrication, and industry safety protocols.

Students gain real-world experience by designing and constructing projects for the Katy ISD Livestock Show and the Houston Livestock Show. These projects reinforce hands-on learning and prepare students for industry certification exams.

Topics Covered:

- Fundamentals of Welding – MIG, TIG, and stick welding
- Blueprint Reading & Welding Symbols – Interpreting construction drawings
- Metal Fabrication & Cutting – Working with different metals and materials
- Welding Positions & Techniques – Flat, horizontal, vertical, and overhead welding

- Industry Safety Standards – Ensuring workplace and equipment safety
- Construction & Project Design – Designing, building, and evaluating welding projects
- Career Pathways in Welding & Fabrication – Exploring opportunities in the welding industry

Industry Skills Achieved

- 345 AWS D9.1 Sheet Metal Certifications
- 129 AWS D1.1 Structural Steel Certifications
- Soft Skills Gained: Precision, problem-solving, time management, teamwork, safety awareness, and attention to detail

Number of CTE Teachers from Industry: 3

Conclusion

The Agriculture, Food, and Natural Resources program provides students with real-world industry experiences through certifications, competitions, internships, and project-based learning. Students graduate with industry-recognized skills that prepare them for careers in veterinary medicine, animal and plant sciences, environmental conservation, agribusiness, and welding.

By fostering technical expertise and essential soft skills, the program equips students for post-secondary education, industry certifications, and successful careers in their chosen fields.





Architecture and Construction

The Architecture and Construction program offers two Programs of Study:

- **Architectural Drafting and Design**
- **Construction Trades**

Students develop technical, analytical, and leadership skills through classroom instruction, hands-on projects, and industry-aligned competitions. Katy ISD Technology Student Association (TSA) and SkillsUSA teams consistently perform at the state level, providing students with valuable real-world experiences and professional networking opportunities.

Instructional Area: Architectural Drafting and Design

Classroom Happenings

Students in the Architectural Drafting and Design program gain expertise in design principles, structural planning, and construction management. They use industry-standard software such as AutoCAD and Revit to develop residential and commercial architectural projects.

Students apply math, engineering, and sustainability concepts to create technical drawings, blueprints, and 3D models. Some of their favorite projects include designing sketch models, presentation models, and customized architectural plans.

Topics Covered:

- Architectural Drafting & Design – Learning drafting techniques and industry software
- Building Codes & Compliance – Understanding and applying construction regulations
- Construction Materials & Methods – Exploring structural components and material specifications
- Sustainability & Green Building – Designing energy-efficient and environmentally friendly structures
- Urban Planning & Infrastructure Design – Developing roadways, bridges, and urban layouts
- Structural Engineering & Calculations – Performing engineering-based problem-solving
- Technical Documentation & Representation – Creating detailed construction documents
- Project Management & Maintenance – Understanding the lifecycle of building structures
- Career Pathways in Architecture & Engineering – Exploring roles in architecture, engineering, and construction

Industry Skills Achieved

- 495 Autodesk Certified User – AutoCAD
- 119 Autodesk Certified User – Inventor

- 112 Autodesk Certified User – Revit
- 14 Autodesk Certified User - Fusion 360
- Soft Skills Gained: Communication, critical thinking, problem-solving, teamwork, time management, adaptability, and project management

Number of CTE Teachers from Industry: 3

Instructional Area: Construction Trades

Classroom Happenings

Students in the Construction Trades program learn the technical skills necessary for building maintenance, construction, and repairs. They work with hands-on projects and simulators in plumbing, electrical, HVAC, and carpentry.

A student favorite is electrical wiring and HVAC system troubleshooting, where they apply real-world techniques to diagnose and fix mechanical systems. By working on practical construction projects, students develop a strong foundation for careers in skilled trades.

Topics Covered:

- Building Systems & Maintenance – Understanding HVAC, plumbing, and electrical systems
- Blueprint Reading & Construction Codes – Learning regulatory compliance and technical design
- Electrical & Wiring Installation – Hands-on training in electrical circuits and troubleshooting

- Carpentry & Structural Repair – Learning fundamental woodwork and repair techniques
- Safety Procedures & OSHA Compliance – Ensuring industry-standard workplace safety
- Plumbing & Pipefitting – Installing and repairing plumbing systems
- HVAC System Maintenance – Understanding heating, ventilation, and air conditioning systems
- Tool Usage & Equipment Handling – Proper operation of construction tools and machinery
- Career Readiness in Construction & Trades – Preparing for skilled trade certifications and employment

Industry Skills Achieved

- 25 NCCER Core Certifications
- 3 Refrigerant Handling (EPA 608) Certifications
- Soft Skills Gained: Problem-solving, teamwork, communication, adaptability, analytical thinking, and attention to detail

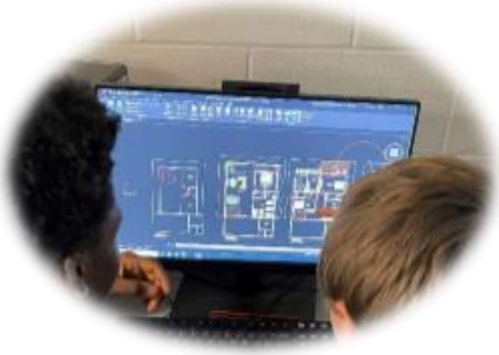
Number of CTE Teachers from Industry: 1

Summary & Conclusion

- The Architecture and Construction program at Katy ISD equips students with theoretical knowledge, practical skills, and industry certifications to prepare them for careers in architecture, engineering, and skilled trades. Through hands-on learning, industry software training, and real-world projects, students gain experience in architectural drafting, structural design, construction management, and building maintenance.

- Students develop technical expertise, problem-solving abilities, and leadership skills by participating in TSA and SkillsUSA competitions, where they consistently perform at state and national levels. The program also fosters essential soft skills, such as teamwork, communication, adaptability, and critical thinking, ensuring students are workforce-ready upon graduation.
- By earning industry-recognized certifications such as Autodesk, Revit, NCCER Core, and EPA 608 Refrigerant Handling, students are prepared to enter the workforce immediately or pursue further education in architecture, engineering, and skilled trades.
- The Architecture and Construction program provides a strong foundation for students interested in designing, building, and maintaining the world around them, making it an invaluable pathway to careers in the construction, engineering, and architectural industries.





Audio Video Production Program

The Audio Video Production program at Katy ISD offers students a comprehensive education in creative media and digital communications, preparing them for careers in film, television, photography, graphic design, animation, fashion design, and audio production. The program consists of six specialized Programs of Study, providing students with hands-on experience, industry-standard software training, and professional certifications.

Students participate in Technology Student Association (TSA) competitions, where they showcase their technical expertise, leadership skills, and creative abilities. Many students compete successfully at the state level, demonstrating the program's high standards of excellence.

Instructional Area: Audio Video Production

Classroom Happenings

Students in Principles of Arts, AV Technology, and Communications learn essential skills using Adobe Animate, Adobe Illustrator, Photoshop, Adobe InDesign, and Adobe Premiere Pro, building a strong foundation for graphic design and digital communications.

Students in AV Production I & II and Audio Production gain hands-on experience in video and audio production, including:

- Camera operation
- Lighting techniques
- Sound recording
- Scriptwriting and storyboarding
- Video editing software
- Production planning (pre-production to post-production)

Students create short films, commercials, documentaries, music videos, news packages, and studio productions, using professional equipment to ensure they graduate ready for entry-level industry careers.

Industry Skills Achieved

- 40 Adobe Certified Professional – After Effects
- 44 Adobe Certified Professional – Illustrator
- 126 Adobe Certified Professional – Photoshop
- 30 Adobe Certified Professional – Premiere Pro

Students develop technical expertise, teamwork, communication, adaptability, and project management skills by working on real-world media projects.

Some students participate in LAMBS, a Katy ISD student-led team that produces live video productions for football games and other events.

Students earn Adobe Animate, Adobe Illustrator, Photoshop, Adobe InDesign, and Adobe Premiere Pro certifications, enhancing their career readiness.

Number of CTE teachers from the industry: 6

Instructional Area: Commercial Photography

Classroom Happenings

Students in Commercial Photography learn the technical and creative aspects of professional photography, including:

- Studio set-up and lighting techniques
- Camera operation and manual settings
- Composition and framing
- Digital image editing and retouching

- Marketing and business strategies for photographers

Students build professional portfolios featuring work across product, fashion, portrait, and event photography, including opportunities to photograph school events and sports games with sideline access.

Industry Skills Achieved

- 40 Adobe Certified Professional – After Effects
- 44 Adobe Certified Professional – Illustrator
- 126 Adobe Certified Professional – Photoshop
- 30 Adobe Certified Professional – Premiere Pro

Students develop attention to detail, customer service, creativity, and technical expertise while mastering industry-standard software such as Adobe Photoshop and Lightroom.

Students earn Adobe Animate, Adobe Illustrator, Photoshop, Adobe InDesign, and Adobe Premiere Pro certifications, preparing them for careers in photography and digital arts.

Number of CTE teachers from the industry: 3

Instructional Area: Graphic Design

Classroom Happenings

Students in Graphic Design learn the fundamental principles of visual communication and brand identity, including:

- Color theory and typography
- Layout design and composition
- Vector illustration and digital image manipulation
- Brand development and marketing materials
- Merchandise design, such as laser engraving and T-shirt printing

Students complete projects that include branding, social media marketing, and event promotions, gaining skills in business operations and entrepreneurship. Many students launch their own businesses before graduation.

Industry Skills Achieved

- 40 Adobe Certified Professional – After Effects
- 44 Adobe Certified Professional – Illustrator
- 126 Adobe Certified Professional – Photoshop
- 30 Adobe Certified Professional – Premiere Pro

Students gain problem-solving, communication, creativity, adaptability, and business management skills while creating a professional design portfolio and process book.

Students earn Adobe Animate, Adobe Illustrator, Photoshop, Adobe InDesign, and Adobe Premiere Pro certifications, giving them a competitive edge in the graphic design and marketing industries.

Number of CTE teachers from the industry: 5

Instructional Area: Animation

Classroom Happenings

Students in Animation learn the fundamental principles of animation, progressing from basic drawing and character design to advanced 3D modeling and motion graphics.

Topics include:

- Squash and stretch animation techniques
- Storyboarding and scriptwriting
- Character rigging and lip-syncing
- Special effects and motion graphics
- 3D animation and visual storytelling

Students apply their skills by creating animated shorts, motion graphics, and character-driven narratives, preparing them for careers in animation, game design, and digital media production.

Industry Skills Achieved

- 40 Adobe Certified Professional – After Effects
- 44 Adobe Certified Professional – Illustrator
- 126 Adobe Certified Professional – Photoshop
- 30 Adobe Certified Professional – Premiere Pro

Students develop collaboration, storytelling, creative problem-solving, and attention to detail while mastering industry-standard software.

Students earn Adobe Animate, Adobe Illustrator, Photoshop, Adobe InDesign, and Adobe Premiere Pro certifications, setting them up for success in the animation and game development industries.

Number of CTE teachers from the industry: 2

Instructional Area: Fashion Design

Classroom Happenings

Students in Fashion Design explore the creative and technical aspects of the fashion industry, including:

- Sketching and illustration techniques
- Pattern-making and garment construction
- Fabric selection and textile science
- Trend analysis and fashion marketing
- Styling and runway presentation

Students work toward producing an annual campus-level fashion show, showcasing their designs, creativity, and craftsmanship.

Industry Skills Achieved

- 40 Adobe Certified Professional – After Effects
- 44 Adobe Certified Professional – Illustrator

- 126 Adobe Certified Professional – Photoshop
- 30 Adobe Certified Professional – Premiere Pro

Students gain creativity, project management, teamwork, and business strategy skills, preparing them for careers in fashion merchandising, design, and retail management.

Students earn Adobe Animate, Adobe Illustrator, Photoshop, Adobe InDesign, and Adobe Premiere Pro certifications, reinforcing their digital design and branding capabilities.

Number of CTE teachers from the industry: 1

Summary & Conclusion

The Audio Video Production program at Katy ISD provides students with a dynamic and hands-on learning experience in digital media, visual storytelling, and creative design. Through specialized instruction in video production, photography, graphic design, animation, and fashion design, students develop technical proficiency, problem-solving abilities, and business acumen to succeed in creative industries.

Students gain real-world experience by participating in TSA competitions, producing live media content, managing branding projects, and collaborating on digital storytelling initiatives. The program also emphasizes entrepreneurship, with many students launching their own creative businesses before graduation.

With industry-recognized certifications such as Adobe Animate, Illustrator, Photoshop, InDesign, and Premiere Pro, graduates are well-prepared to enter the workforce immediately or pursue higher education in media production, digital marketing, animation, and design.

This program fosters technical expertise, leadership, collaboration, and creativity, making it an invaluable pathway for students pursuing careers in film, broadcasting, photography, fashion, and digital arts.





Business, Marketing, and Finance Program

The Business, Marketing, and Finance program at Katy ISD equips students with critical business, financial, and marketing skills, preparing them for entrepreneurship, corporate management, financial services, and sales careers. The program consists of four specialized Programs of Study, providing hands-on experience, real-world business applications, and industry-recognized certifications.

Students actively participate in Future Business Leaders of America (FBLA) competitions, where they develop leadership skills, showcase their business acumen, and compete at state and national levels.

Instructional Area: Accounting & Financial Services

Classroom Happenings

Students in Accounting and Finance I & II learn the fundamental principles of accounting, including:

- The accounting cycle (recording transactions, posting ledgers, adjusting entries, and generating financial statements)
- Financial statement preparation (balance sheets, income statements, and cash flow statements)
- Corporate accounting (stocks, bonds, and dividend reporting)
- Inventory management and depreciation methods
- Financial statement analysis and budgeting

Students also gain hands-on experience in tax preparation through the IRS Volunteer Income Tax Assistance (VITA) program, where they assist community members with filing income tax returns.

Industry Skills Achieved

- 44 Volunteer Income Tax Assistance/Tax Counseling Certifications (VITA)

Students develop attention to detail, analytical thinking, communication, problem-solving, and teamwork skills while mastering financial reporting, taxation, and corporate finance principles.

Students earn the Volunteer Income Tax Assistance (VITA) Basic Certification, preparing them for entry-level finance and tax positions.

Number of CTE teachers from the industry: 1

Instructional Area: Business Management

Classroom Happenings

Students in Business Management **gain expertise in**:

- Leadership and team management (effective communication, conflict resolution, and strategic decision-making)
- Financial planning (budgeting, cost analysis, and forecasting)
- Marketing strategies (customer segmentation, product pricing, and promotions)
- Operations management (supply chain logistics, inventory control, and quality assurance)
- Database and information security management

Students participate in **real-world projects, including:**

- A budget project that simulates financial planning based on career choices and living expenses
- A stock market challenge, where students invest a virtual $1 million and compete to maximize profits

Industry Skills Achieved

- 100 Entrepreneurship and Small Business (ESB) Certifications

Students develop leadership, financial literacy, critical thinking, problem-solving, adaptability, negotiation, and project management skills.

Students earn the Entrepreneurship and Small Business Certification, positioning them for leadership roles in corporate and entrepreneurial settings.

Number of CTE teachers from the industry: 4

Instructional Area: Entrepreneurship

Classroom Happenings

Students in Entrepreneurship develop essential business **creation and management skills, including:**

- Business planning (developing executive summaries, marketing strategies, and financial projections)
- Financial literacy (budgeting, cash flow management, and funding sources)
- Marketing and sales techniques (branding, customer acquisition, and social media strategies)
- Legal and ethical considerations (business structures, intellectual property, and corporate compliance)

Students engage in real-world experiences, including:

- Conducting interviews with local business owners to gain insight into business operations
- Participating in Virtual Enterprises, a simulated business program where students develop and market products in regional and national competitions

Industry Skills Achieved

- 100 Entrepreneurship and Small Business (ESB) Certifications

Students gain entrepreneurial mindset, financial acumen, communication, teamwork, adaptability, leadership, negotiation, and business development skills.

Students earn the Entrepreneurship and Small Business Certification, preparing them for business ownership and management careers.

Number of CTE teachers from the industry: 1

Instructional Area: Marketing & Sales

Classroom Happenings

Students in Marketing & Sales learn how to create, analyze, and execute marketing strategies while understanding consumer behavior and business branding. **Topics include:**

- Market research (data collection, analysis, and interpretation)
- Digital marketing (social media advertising, SEO, and content marketing)
- Brand development (logos, slogans, and visual identity)
- Consumer behavior (psychological, environmental, and societal influences on purchasing decisions)

Students complete engaging projects, including:

- A branding project, where they design personal logos, rebrand school athletic programs, and develop brand loyalty strategies
- A simulated marketing internship ("Simternship"), where students analyze and develop social media marketing campaigns

Industry Skills Achieved

- 75 Stukent Social Media Marketing Certifications

Students gain communication, creativity, critical thinking, leadership, adaptability, teamwork, project management, and analytical skills.

Number of CTE teachers from the industry: 1

Summary & Conclusion

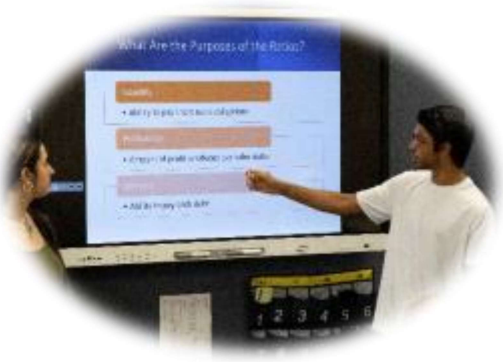
The Business, Marketing, and Finance program at Katy ISD prepares students for successful careers in corporate leadership, entrepreneurship, finance, and marketing. Through hands-on business simulations, financial planning exercises, tax preparation, and strategic marketing projects, students gain a deep understanding of business operations and market dynamics.

Students also engage with local businesses, conduct market research, and compete in FBLA competitions, enhancing their professional development and leadership capabilities.

With industry-recognized certifications such as the Entrepreneurship and Small Business Certification, Volunteer Income Tax Assistance (VITA) Certification, and Stukent Social Media Marketing Certification, graduates leave the program ready for immediate employment or higher education in business, finance, and marketing disciplines.

This program fosters financial literacy, problem-solving, leadership, and critical thinking skills, ensuring that students are well-equipped for career success in the evolving global economy.





Education and Training Program

The Education and Training program at Katy ISD equips students with the foundational knowledge and practical skills needed for careers in teaching and training. Through a comprehensive curriculum, hands-on classroom experience, and leadership development, students gain insight into curriculum planning, classroom management, and instructional strategies.

Students have the option to earn an Associate Degree in Teaching while in high school through a dual-credit partnership with Houston Community College and the University of Houston Victoria. Additionally, students participate in Family, Career and Community Leaders of America (FCCLA) competitions, enhancing their leadership and teamwork abilities while competing at the state level.

Instructional Area: Teaching & Training

Classroom Happenings

Students in the Teaching and Training program develop essential teaching skills through coursework and real-world experiences. **Topics covered include:**

- Curriculum Development – Creating lesson plans, aligning instruction with learning objectives, and sequencing content appropriately.
- Classroom Management – Establishing routines, managing student behavior, and creating a positive learning environment.
- Educational Psychology – Understanding student learning styles, cognitive development, and motivation strategies.
- Assessment Strategies – Designing formative and summative assessments, analyzing student performance, and providing feedback.
- Differentiation – Adapting instruction to meet diverse student needs and learning styles.
- Technology Integration – Utilizing digital tools and platforms to enhance lesson delivery.
- Communication Skills – Practicing active listening, delivering clear instructions, and facilitating student discussions.
- Cultural Competency – Understanding diverse student backgrounds and creating an inclusive classroom.
- Ethics and Professionalism – Maintaining ethical teaching practices and appropriate student-teacher relationships.

Students gain hands-on teaching experience by collaborating with Katy ISD elementary teachers, allowing them to work alongside professional educators, assist in lesson delivery, and support young learners in real classroom environments.

Industry Skills Achieved

- 1 Educational Aide I Certification

Through practical training and applied learning, students develop:

✓ Communication and Active Listening – Engaging effectively with students, parents, and colleagues.

✓ Teamwork and Collaboration – Working with educators and school staff to enhance student learning.
✓ Adaptability and Problem-Solving – Adjusting lesson plans to meet diverse student needs.
✓ Critical Thinking and Decision-Making – Evaluating instructional methods and assessing student progress.
✓ Emotional Intelligence and Leadership – Navigating classroom dynamics and motivating students.
✓ Time Management and Organization – Effectively planning lessons and managing instructional time.
✓ Creativity and Innovation – Designing engaging and interactive learning experiences.
✓ Conflict Resolution and Cultural Competency – Promoting inclusivity and addressing student concerns.

Students earn the Educational Aide I Certification, preparing them for entry-level roles in education and further studies in teaching and instructional leadership.

Summary & Conclusion

The Education and Training program at Katy ISD provides a strong foundation for future educators, combining academic coursework, hands-on teaching experience, and leadership development. Students gain practical skills in curriculum planning, classroom management, and student engagement, ensuring they are well-prepared for careers in education.

Through real-world classroom experiences, mentorship with professional educators, and participation in FCCLA competitions, students develop leadership, communication, and problem-solving abilities that are essential in the field of teaching.

With the opportunity to earn an Associate Degree in Teaching and the Educational Aide I

Certification, graduates leave the program ready to enter the workforce as paraprofessionals or pursue higher education in education and instructional leadership.

This program empowers students to become innovative, compassionate, and effective educators who will shape the future of learning!



Engineering Program

The Engineering program in Katy ISD provides students with a strong foundation in engineering principles, design, and problem-solving. The program consists of one Program of Study: Engineering Foundations, which prepares students for college engineering programs and careers in STEM-related fields.

Students participate in TSA, VEX Robotics, and First Robotics competitions, where they apply engineering concepts to real-world challenges. The Katy ISD engineering teams consistently compete at the state, national, and world levels, demonstrating their technical skills, creativity, and teamwork.

Instructional Area: Engineering Foundations

Classroom Happenings

The Engineering Foundations program introduces students to various engineering disciplines, tools, and problem-solving methodologies. Students gain hands-on experience with real-world applications of engineering and learn to develop innovative solutions to technical challenges.

Topics covered in the program include:

- Engineering Fields – Exploring disciplines such as mechanical, product, infrastructure, and sustainable design.
- Engineering Tools – Learning 3D modeling, programming, robotics, and computer-aided design (CAD) software.
- Engineering Design Process – Applying structured problem-solving techniques to develop and refine designs.
- Critical Thinking & Innovation – Analyzing real-world challenges and designing practical solutions.

Students engage in hands-on projects that require them to collaborate, troubleshoot, and optimize designs, helping them build strong technical and analytical skills. The program provides a solid foundation for students planning to pursue engineering degrees and careers.

Industry Skills Achieved

✓ Collaboration & Teamwork – Working in groups to develop solutions for complex engineering problems.
✓ Communication & Presentation Skills – Explaining technical concepts and presenting

project designs.

✓ Critical Thinking & Problem-Solving – Applying engineering principles to innovate and troubleshoot challenges.

✓ Adaptability & Creativity – Adjusting designs and strategies to optimize project outcomes.

✓ Time Management & Leadership – Managing project timelines and guiding team members toward goals.

✓ Attention to Detail & Conflict Resolution – Refining designs and resolving challenges in collaborative environments.

Students earn industry-recognized certifications that prepare them for higher education and entry-level engineering roles:

🎓 495 Autodesk Certified User – AutoCAD Certifications

🎓 119 Autodesk Certified User – Inventor Certifications

Number of CTE teachers from industry: 3

Summary & Conclusion

The Engineering program at Katy ISD provides students with a strong foundation in engineering concepts, problem-solving techniques, and technical design skills. Through hands-on projects, industry-standard certifications, and competitive engineering challenges, students develop the skills necessary for success in STEM careers.

Students gain experience in engineering design, robotics, and CAD software, preparing them for college engineering programs and technical careers. Participation in TSA, VEX Robotics, and First Robotics competitions further enhances their teamwork, creativity, and leadership abilities.

With industry-recognized certifications and practical engineering experience, students graduate from the program with the technical knowledge and professional skills needed to excel in the engineering field.





Health Science Program

The Health Science program in Katy ISD prepares students for careers in the medical field through five specialized Programs of Study: Medical Assistant, Clinical Rotations, Dental Assistant, Pharmacy Technician, and Emergency Medical Technician (EMT). Students engage in hands-on training, internships, and clinical experiences that provide real-world exposure to the healthcare industry.

Students in the Medical Assistant program have the option to take Dual Credit courses, earning their Level 1 Certificate in Medical Scribe through Houston Community College. Additionally, students participate in Health Occupations Students of America (HOSA) competitions, where Katy ISD teams consistently excel at the state level.

Instructional Area: Medical Assistant

Classroom Happenings

Students in the Medical Assistant program develop clinical and administrative skills essential for healthcare professionals. **Key areas covered include:**

- Medical Terminology – Learning prefixes, suffixes, and root words used in medical communication.
- Anatomy & Physiology – Understanding human body systems and how diseases affect them.
- Patient Care – Measuring vital signs, preparing patients for exams, and assisting with basic procedures.
- Phlebotomy – Practicing safe blood-drawing techniques and laboratory procedures.
- Electronic Health Records (EHR) – Documenting patient information and navigating digital records.
- Administrative Tasks – Scheduling appointments, insurance billing, and medical office management.
- Medical Ethics & HIPAA Compliance – Understanding patient privacy laws and ethical standards in healthcare.

Students engage in lab-simulated activities and real-world scenarios, ensuring they are well-prepared for careers in hospitals, clinics, and medical offices.

Industry Skills Achieved

- 52 Certified Clinical Medical Assistant (CCMA) Certifications

✓ Technical & Clinical Skills – Proficiency in vital signs, phlebotomy, medical documentation, and patient care.
✓ Communication & Empathy – Effective interaction with patients and healthcare teams.

✓ Problem-Solving & Adaptability – Responding to patient needs and medical challenges.
✓ Teamwork & Time Management – Coordinating with healthcare professionals in fast-paced environments.
✓ Customer Service & Professionalism – Managing front-office tasks and ensuring patient satisfaction.

Students earn the Certified Clinical Medical Assistant (CCMA) certification.

Number of CTE teachers from industry: 5

Instructional Area: Clinical Rotations

Classroom Happenings

The Clinical Rotations program provides hands-on learning in hospitals and healthcare facilities. Students rotate through various departments, **gaining experience in:**

- Medical Observations – Shadowing healthcare professionals in diverse settings.
- Patient Interaction – Learning bedside manners, communication, and professionalism.
- Healthcare Systems – Understanding hospital operations and patient care models.
- Medical Ethics & Legal Considerations – Applying ethical decision-making in real-world scenarios.

Through internships at community health centers and hospitals, students bridge the gap between classroom learning and real-world practice, building confidence and expertise for future medical careers.

Industry Skills Achieved

- 202 EKG Technician Certifications
- 206 Patient Care Technician Certifications

✓ Critical Thinking & Decision-Making – Analyzing healthcare situations and applying knowledge.
✓ Adaptability & Teamwork – Working in dynamic medical environments.
✓ Interpersonal & Active Listening Skills – Effective patient communication and care.
✓ Empathy & Professionalism – Providing compassionate healthcare services.
✓ Medical Knowledge & Technical Proficiency – Performing medical tasks under supervision.

Students earn the EKG Technician certification (98.6% Katy ISD pass rate, compared to the national average of 69.66%) and the Patient Care Technician certification (98.4% Katy ISD pass rate, compared to the national average of 73.31%).

Number of CTE teachers from industry: 4

Instructional Area: Dental Assisting

Classroom Happenings

Students in the Dental Assisting program develop the skills required to support dentists in patient care and office management. **Topics include:**

- Patient Care & Communication – Interacting professionally with patients.
- Dental Anatomy & Terminology – Understanding oral structures and common dental conditions.

- Chairside Assisting – Handing instruments and maintaining a clear work area during procedures.
- Radiography – Taking and developing dental X-rays.
- Infection Control – Sterilization techniques and cross-contamination prevention.
- Dental Office Administration – Scheduling appointments, maintaining records, and processing insurance claims.

Industry Skills Achieved

✓ Attention to Detail & Problem-Solving – Precision in assisting dental procedures.

✓ Time Management & Organization – Coordinating patient care and dental office operations.

✓ Compassion & Interpersonal Skills – Ensuring patient comfort and understanding.

✓ Technical Proficiency – Handling dental equipment and processing X-rays.

Students earn the Dental Assistant certification and the Dental Assistant X-ray certification.

Number of CTE teachers from industry: 2

Instructional Area: Emergency Medical Technician (EMT)

Classroom Happenings

Students in the EMT program train for careers in emergency medicine, learning life-saving skills such as:

- Patient Assessment – Evaluating trauma and medical conditions.

- CPR & AED Use – Performing emergency resuscitation techniques.
- Airway Management – Using medical devices to ensure proper breathing.
- Trauma & Bleeding Control – Stabilizing accident victims and preventing blood loss.
- Pharmacological Interventions – Administering medications like epinephrine.
- Behavioral & Psychiatric Emergencies – Managing mental health crises in emergency settings.

Students gain real-world EMS experience through partnerships with the Katy Fire Department, Houston Fire Department, West Lake Volunteer Fire Department, Community Volunteer Fire Department, and Memorial Hermann Katy ER.

Industry Skills Achieved

- 26 Emergency Medical Technician Certifications

✓ Leadership & Crisis Management – Making split-second decisions in emergency situations.
✓ Physical & Mental Stamina – Managing high-pressure medical emergencies.
✓ Compassion & Communication – Comforting patients and coordinating with first responders.
✓ Medical Knowledge & Technical Skills – Using advanced EMT equipment and procedures.

Students earn the Emergency Medical Responder (EMR) certification and the Emergency Medical Technician (EMT) certification.

Number of CTE teachers from industry: 2

Instructional Area: Pharmacy Technician

Classroom Happenings

The Pharmacy Technician program trains students in pharmaceutical procedures and medication safety, covering topics such as:

- Pharmacology – Identifying drug classifications and interactions.
- Dosage Calculations – Ensuring accurate medication measurements.
- Prescription Processing – Entering, verifying, and dispensing prescriptions.
- Pharmacy Law & Ethics – Understanding regulations for controlled substances.
- Patient Safety – Preventing medication errors and ensuring proper storage.
- Inventory Management – Stocking and tracking pharmaceuticals.

Students gain hands-on experience preparing medications and working with local Walgreens pharmacies.

Industry Skills Achieved

- 26 Pharmacy Technicians

✓ Attention to Detail & Accuracy – Ensuring correct medication dispensing.

✓ Customer Service & Communication – Assisting patients with prescriptions.

✓ Problem-Solving & Organizational Skills – Managing inventory and workflow.

✓ Mathematical Proficiency – Performing precise dosage calculations.

Students earn the Pharmacy Technician certification.

Number of CTE teachers from industry: 1

Summary & Conclusion

The Health Science program at Katy ISD provides students with the knowledge, hands-on experience, and certifications needed for careers in healthcare. Through internships, lab simulations, and partnerships with hospitals and medical facilities, students develop critical technical and professional skills in patient care, emergency response, dental support, and pharmaceutical services.

By participating in HOSA competitions, industry internships, and earning nationally recognized certifications, students graduate well-prepared for immediate employment in healthcare or further studies in medical and allied health professions.

This program empowers students to make a difference in the medical field, ensuring they are equipped with the skills, experience, and industry credentials to succeed in high-demand healthcare careers.





Instructional Area: Culinary Arts

Classroom Happenings

The Culinary Arts program teaches students the fundamental skills required for success in the food service and hospitality industry. Topics covered in the program include:

- Knife Skills – Safely handling and using knives for food preparation.
- Cooking Techniques – Preparing a variety of foods, including eggs, dairy, meats, and vegetables.
- Baking & Pastry Arts – Learning to bake and decorate baked goods.
- Food Safety & Sanitation – Following industry standards for hygiene and cleanliness.
- Menu Planning & Cost Control – Managing food costs, portion control, and meal planning.
- Restaurant Operations – Staffing, scheduling, and managing food service establishments.
- Customer Service – Engaging with customers and enhancing the dining experience.
- Use of Kitchen Equipment – Operating professional culinary tools and machinery.
- Recipe Reading & Execution – Following recipes with precision for consistency and quality.
- Math in Culinary Arts – Applying math skills in food cost calculations and portioning.
- Workplace Adaptability – Navigating various food service settings, including restaurants, catering, and bakeries.

Students gain real-world experience by operating a quick-service counter, a bistro, and catering services for campus and district events. These opportunities allow students to develop hands-on expertise in food preparation, customer service, and event coordination.

Industry Skills Achieved

- 76 ServSafe Manager Certifications
- 344 Food Handler Certifications

✓ Culinary & Food Preparation Skills – Mastery of food handling, preparation, and presentation.
✓ Teamwork & Leadership – Working collaboratively in a fast-paced kitchen environment.
✓ Customer Service & Communication – Effectively interacting with customers and colleagues.
✓ Time Management & Multitasking – Managing multiple responsibilities efficiently.
✓ Creativity & Attention to Detail – Crafting visually appealing and flavorful dishes.
✓ Problem-Solving & Adaptability – Adjusting to challenges in high-pressure kitchen settings.
✓ Workplace Safety & Professionalism – Understanding industry standards for hygiene and safety.

Students earn the ServSafe Manager certification, ensuring they meet national food safety and sanitation requirements.

Number of CTE teachers from industry: 2

Summary & Conclusion

The Hospitality and Tourism program in Katy ISD provides students with the skills and certifications needed for careers in culinary arts, restaurant management, and food service. Through hands-on training, real-world experiences, and leadership-building competitions, students graduate with the expertise and confidence to succeed in the hospitality industry.

By operating real food service establishments, catering events, and earning industry-recognized certifications, students gain practical skills that make them competitive candidates for careers in restaurants, catering businesses, and hospitality management.

This program equips students with the knowledge, experience, and industry credentials necessary to thrive in the fast-paced and rewarding field of hospitality and tourism.



Human Services Program

The Human Services program at Katy ISD provides students with the knowledge and skills needed to support individuals, families, and communities in various service-oriented careers. The program consists of two Programs of Study: Family and Community Services and Cosmetology.

Students participate in FCCLA (Family, Career and Community Leaders of America) competitions, where they demonstrate leadership, problem-solving, and community service skills. The Katy ISD FCCLA teams excel at the state level, showcasing their dedication to positively impacting their communities.

Instructional Area: Family & Community Services

Classroom Happenings

The Family and Community Services program teaches students how to support and strengthen individuals, families, and communities through social services, public health, and advocacy. **Topics covered in the program include:**

- Human Development – Understanding physical, mental, emotional, and social growth from conception to old age.
- Social Services – Learning how to assist individuals, families, and communities with essential support services.
- Community Development – Designing and implementing programs that improve the well-being of local communities.
- Family Systems – Studying how families function, interact, and contribute to society.
- Technology & Families – Understanding the role of technology in daily life and its impact on family dynamics.
- Public Health & Healthcare – Learning about health services that improve quality of life and community well-being.
- Diversity & Inclusion – Exploring how cultural diversity impacts families, social interactions, and community development.

This program prepares students with real-world skills in nutrition, financial management, crisis intervention, and human development, equipping them to make informed decisions and contribute positively to their communities.

Industry Skills Achieved

✓ Professionalism & Customer Service – Developing strong interpersonal and service-oriented skills.
✓ Effective Communication – Practicing verbal and written skills to engage with clients and service organizations.

✓ Empathy & Active Listening – Understanding individual needs and responding with care.
✓ Critical Thinking & Problem-Solving – Navigating complex social and community challenges.
✓ Adaptability & Teamwork – Working collaboratively in social service settings.
✓ Cultural Sensitivity & Conflict Resolution – Supporting diverse populations with respect and awareness.
✓ Leadership & Crisis Intervention – Leading initiatives and assisting individuals in need.

Students earn the Community Health Worker certification, preparing them for careers in health services, social work, and nonprofit organizations.

Instructional Area: Cosmetology

Classroom Happenings

The Cosmetology program equips students with the technical skills and knowledge needed to work in the beauty industry. The program provides hands-on training in hair, skin, and nail services, as well as business management skills for students interested in salon ownership and entrepreneurship. **Key areas of study include:**

- Hair Services – Haircutting, styling, coloring, chemical treatments (perms, relaxers), and updos.
- Skin Care – Facial treatments, skin analysis, and professional skincare product knowledge.
- Nail Care – Manicures, pedicures, and creative nail art techniques.
- Makeup Application – Special occasion makeup, color theory, and cosmetics application techniques.

- Anatomy & Physiology – Understanding the structure and health of hair, skin, and nails.
- Sanitation & Hygiene – Learning proper disinfection procedures and safety protocols.
- Client Consultation – Communicating effectively with clients to assess their needs and recommend services.
- Salon Business & Management – Understanding business operations, pricing strategies, and marketing for salon success.

Students practice their skills on mannequins before transitioning to working with real clients. Popular hands-on projects include updos, spiral curls, classic chignons, French twists, and advanced hairstyling techniques.

Industry Skills Achieved

✓ Customer Service & Communication – Providing exceptional client interactions and consultations.
✓ Time Management & Adaptability – Managing appointments and adjusting to client requests.
✓ Creativity & Attention to Detail – Crafting unique hairstyles, makeup looks, and nail designs.
✓ Problem-Solving & Professionalism – Handling client concerns with professionalism and confidence.
✓ Teamwork & Leadership – Working in a salon setting and leading service projects.
✓ Business & Entrepreneurship Skills – Gaining knowledge on running a salon or personal beauty business.

Number of CTE teachers from industry: 1

Summary & Conclusion

The Human Services program at Katy ISD prepares students for rewarding careers in community services, public health, and the beauty industry. Through hands-on learning, leadership-building competitions, and industry-recognized certifications, students gain both technical and soft skills essential for success.

Students in the Family and Community Services program develop the ability to assist individuals and communities through social services, public health, and advocacy efforts, while Cosmetology students gain the expertise needed to provide professional beauty services and manage salon businesses.

By earning industry-recognized certifications, students leave this program with real-world experience and competitive skills that prepare them for immediate employment or further education in their chosen fields.



Information Technology Program

The Information Technology (IT) program at Katy ISD prepares students for high-demand careers in technology, cybersecurity, networking, and computer science. The

program consists of five Programs of Study: Computer Science, AP Cybersecurity, Networking, Computer Technician, and Cybersecurity.

Students participate in UIL and SkillsUSA competitions, where they demonstrate their technical expertise and leadership abilities. The Katy ISD UIL Computer Science and SkillsUSA teams consistently compete at the state level, showcasing their coding, cybersecurity, and IT problem-solving skills.

Instructional Area: Computer Science

Classroom Happenings

The Computer Science program provides students with hands-on experience in programming, web development, computer architecture, and data science. Students explore real-world applications of computing while developing strong technical and logical thinking skills.

Key topics covered in the program include:

- Programming – Learning block-based coding before transitioning to text-based languages.
- Web & App Development – Creating interactive websites and mobile applications.
- Computer Architecture – Understanding hardware components, memory management, and operating systems.
- Data Science – Using statistics, algorithms, and artificial intelligence (AI) principles.

- Algorithms & Object-Oriented Programming (OOP) – Learning problem-solving techniques using structured programming.

Students work on projects such as custom image filter programs, AI and machine learning applications, and coding deck-of-card simulations. Discussions on AI ethics and automation's impact on jobs help students gain insights into emerging technology trends.

Industry Skills Achieved

✓ Teamwork & Collaboration – Working on programming projects in teams.
✓ Problem-Solving & Logical Thinking – Developing software solutions for real-world problems.
✓ Time Management & Adaptability – Meeting coding deadlines and debugging efficiently.
✓ Communication & Presentation – Explaining technical solutions to peers and stakeholders.

Students earn industry-recognized certifications:

🎓 AWS Certified Cloud Practitioner
🎓 27 IT Specialist – Java Certification
🎓 111 Unity Certified User – Programmer
🎓 AP Computer Science Exam Certification

Number of CTE teachers from industry: 4

Instructional Area: Networking Systems

Classroom Happenings

The Networking program equips students with technical skills for building, securing, and troubleshooting computer networks. The program prepares students for entry-level IT and network administration roles through hands-on networking projects and simulations.

Key topics include:

- Network Infrastructure – Learning routers, switches, firewalls, and cabling techniques.
- Network Protocols – Understanding TCP/IP, DNS, DHCP, and IP addressing.
- Cybersecurity & Access Control – Configuring firewalls, NAT (Network Address Translation), and ACLs (Access Control Lists).
- Network Troubleshooting – Using diagnostic tools to resolve connectivity issues.

Students work on real-world networking configurations, such as setting up virtual LANs (VLANs), configuring access lists, and implementing security measures.

Industry Skills Achieved

✓ Communication & Interpersonal Skills – Effectively troubleshooting and documenting issues.

✓ Initiative & Professionalism – Working in structured network environments.

✓ Adaptability & Problem-Solving – Quickly resolving network challenges.

Students earn highly sought-after certifications:

🎓 AWS Certified Cloud Practitioner

🎓 7 CISCO CCNA – Implementing and Administering Cisco Solutions

🎓 111 Unity Certified User – Networking

🎓 AP Networking Exam Certification

Number of CTE teachers from industry: 1

Instructional Area: Computer Technician

Classroom Happenings

The Computer Technician program prepares students for careers in IT support, hardware repair, and technical troubleshooting. Students learn how to diagnose, repair, and configure computer hardware and software while gaining hands-on experience in PC assembly, networking, and cybersecurity.

Key topics include:

- PC Hardware & Software – Assembling computers, installing operating systems (Windows, Linux, macOS).
- Networking Basics – Learning IP addressing, network security, and router configurations.
- Troubleshooting & Diagnostics – Using industry-standard tools to repair hardware and software issues.
- Cybersecurity Essentials – Understanding firewalls, anti-virus software, and secure Wi-Fi configurations.
- Virtualization & Cloud Computing – Setting up virtual machines and cloud storage systems.

Industry Skills Achieved

✓ Technical Troubleshooting & Critical Thinking – Diagnosing and solving hardware/software issues.
✓ Customer Service & Communication – Interacting with clients to resolve IT problems.
✓ Creativity & Adaptability – Working with evolving technology and IT environments.

Students earn top IT industry certifications:

🎓 AWS Certified Cloud Practitioner
🎓 8 CompTIA A+ Certification
🎓 7 CISCO CCNA Certification
🎓 111 Unity Certified User – IT Technician
🎓 AP Computer Technician Exam Certification

Number of CTE teachers from industry: 1

Instructional Area: Cybersecurity

Classroom Happenings

The Cybersecurity program prepares students for careers in digital security, ethical hacking, and IT risk management. Students gain hands-on experience with security tools, encryption, and network protection.

Key topics include:

- Digital Citizenship & Cyber Hygiene – Understanding online safety, secure passwords, and cyber ethics.
- Encryption & Cryptography – Learning data encryption and decryption techniques.
- Network Security & System Administration – Configuring firewalls, securing networks, and protecting IT infrastructure.
- Cloud Security & Risk Management – Identifying security vulnerabilities in cloud environments.

Students engage in virtual labs using Windows and Linux systems to prepare for the CompTIA Security+ certification exam.

Industry Skills Achieved

✓ Critical Thinking & Analytical Skills – Evaluating cybersecurity threats and vulnerabilities.
✓ Leadership & Teamwork – Working in security operations and ethical hacking teams.
✓ Problem-Solving & Adaptability – Addressing security breaches and network intrusions.

Students earn top cybersecurity industry certifications:

🎓 44 CompTIA Security+ Certification
🎓 AP Cybersecurity Exam Certification

Number of CTE teachers from industry: 1

Summary & Conclusion

The Information Technology (IT) program at Katy ISD provides students with a strong foundation in computer science, cybersecurity, networking, and IT support. Through hands-on projects, industry certifications, and real-world training, students gain practical experience in solving technical problems and securing digital environments.

Students develop in-demand skills such as programming, system administration, IT security, and network management, preparing them for high-paying careers in the technology sector. Participation in UIL and SkillsUSA competitions further enhances their teamwork, leadership, and innovation skills.

With industry-recognized certifications in cloud computing, cybersecurity, IT networking, and programming, students graduate fully prepared for college programs and entry-level careers in technology and cybersecurity.





Instructional Area: Law Enforcement

Classroom Happenings

The Law Enforcement program provides students with hands-on training in criminal justice, constitutional law, and policing techniques. Students gain practical experience in law enforcement operations, learning how to investigate crimes, respond to emergencies, and interact with the community.

Key topics covered in the program include:

- Law Enforcement History & Organization – Understanding local, state, and federal law enforcement agencies.
- Criminal Law & Legal System – Learning crime classification, search and seizure laws, and court procedures.
- Crime Scene Investigation (CSI) – Practicing evidence collection, fingerprinting, and forensic analysis.
- Ethical Responsibilities & Decision-Making – Learning de-escalation techniques and proper conduct in law enforcement.
- Community Policing & Public Safety – Understanding the relationship between law enforcement and the community.

Students in the Practicum in Law & Public Service class participate in internships three days a week. Through partnerships with the City of Katy Police Department, Katy ISD Police Department, Fort Bend County Justice Center, and private law firms, students observe and gain hands-on experience in law enforcement, juvenile probation, and district courts.

Industry Skills Achieved

✓ Communication & Active Listening – Interacting with the public and de-escalating situations.
✓ Critical Thinking & Problem-Solving – Making quick, ethical decisions in law enforcement scenarios.
✓ Teamwork & Leadership – Working in law enforcement teams to ensure public safety.
✓ Emotional Intelligence & Professionalism – Handling stressful situations with composure.

Students earn industry-recognized certifications:

🎓 IAED Emergency Telecommunicator Certification

Number of CTE teachers from industry: 2

Instructional Area: Legal Studies

Classroom Happenings

The Legal Studies program prepares students for careers in law, government, and the justice system. Students study the U.S. legal system, analyze real-world cases, and engage in legal research and writing.

Key topics covered in the program include:

- U.S. Constitution & Key Amendments – Understanding civil rights, due process, and legal protections.
- Criminal vs. Civil Law – Exploring differences in prosecution, liability, and legal consequences.
- Court System & Trial Process – Learning roles of judges, attorneys, juries, and legal procedures.
- Legal Research & Writing – Practicing how to draft legal briefs, cite sources, and analyze case law.
- Mock Trials & Legal Debates – Applying legal principles in simulated court proceedings.

Students prepare for mock trials by researching legal cases, drafting arguments, and playing key courtroom roles such as judge, prosecutor, defense attorney, and witness.

They learn courtroom procedures, questioning techniques, and persuasive argumentation, which builds confidence and critical thinking skills.

Industry Skills Achieved

✓ Critical Thinking & Analytical Skills – Evaluating legal cases and interpreting laws.
✓ Communication & Persuasive Argumentation – Presenting legal arguments in mock trials.
✓ Research & Attention to Detail – Conducting case law research and writing legal briefs.
✓ Time Management & Ethical Decision-Making – Managing deadlines and adhering to legal ethics.

Students graduate prepared for careers in law, legal research, and public administration.

Number of CTE teachers from industry: 1

Summary & Conclusion

The Law and Public Service program at Katy ISD provides students with real-world experience in law enforcement and legal studies. Through hands-on training, mock trials, and internships, students develop practical skills in criminal justice, forensic investigation, and courtroom procedures.

By participating in UIL and SkillsUSA competitions, students refine their leadership, communication, and problem-solving abilities, making them well-prepared for careers in public safety, law enforcement, and legal professions.

With internships at police departments, district courts, and legal offices, students gain first-hand experience in law and public service, ensuring they are fully equipped for success in college programs and professional careers.



Manufacturing Program

The Manufacturing program at Katy ISD offers students hands-on experience in robotics, automation, and advanced manufacturing technologies. The program consists of one Program of Study: Robotics and Automation, designed to prepare students for careers in industrial automation, precision manufacturing, and engineering technology.

Students compete in SkillsUSA competitions, where they demonstrate leadership, teamwork, and problem-solving skills in robotics, mechanical fabrication, and automation challenges. The Katy ISD SkillsUSA teams consistently perform at the state and national levels, highlighting their technical expertise and industry readiness.

Instructional Area: Robotics and Automation

Classroom Happenings

The Robotics and Automation program provides students with practical training in manufacturing processes, robotics, and industrial maintenance. Students learn to design, build, and program automated systems while mastering mechanical, electrical, and computer-controlled equipment.

Key topics covered in the program include:

- Blueprint Reading – Understanding engineering drawings and technical schematics.
- Metrology & Quality Control – Measuring and inspecting parts for precision manufacturing.
- Industrial Safety – Learning OSHA safety standards and best practices in manufacturing environments.
- Computer-Controlled Machines (CNC & PLCs) – Operating automated machines and programmable logic controllers.
- Manufacturing Equipment Maintenance – Troubleshooting and repairing robotic systems and industrial machinery.
- Hydraulics & Pneumatics – Applying fluid power principles in automation systems.
- Thermodynamics & Electrical Controls – Understanding power systems and energy efficiency in manufacturing.
- G-Code Programming – Writing and executing machine code for CNC lathes and mills.
- Production Systems – Optimizing inputs, processes, and outputs in industrial operations.

Students receive hands-on experience through computer simulations and real-world projects using Amatrol and Fanuc robotics equipment. They design, test, and

troubleshoot automated systems, gaining valuable industry experience in robotics and automation.

Industry Skills Achieved

✓ Critical Thinking & Problem-Solving – Troubleshooting industrial systems and optimizing manufacturing processes.
✓ Teamwork & Communication – Collaborating on engineering projects and presenting technical solutions.
✓ Adaptability & Creativity – Designing and innovating solutions in robotic automation.
✓ Project & Time Management – Managing production schedules and meeting industry deadlines.
✓ Leadership & Independent Work – Leading projects and working autonomously on technical challenges.

Students earn industry-recognized certifications:

🎓 495 Autodesk Certified User – AutoCAD

🎓 119 Autodesk Certified User – Inventor
🎓 Fanuc Robot Operator 1 Certification
🎓 57 Certified Manufacturing Associate (SACA C-101 - Basic Operations Certification)
🎓 5 SACA C-201 - Electrical Systems Certification

Summary & Conclusion

The Manufacturing program at Katy ISD provides students with the technical skills and industry knowledge necessary for careers in robotics, automation, and advanced manufacturing. Through hands-on training with cutting-edge equipment, students develop critical problem-solving and engineering skills that prepare them for high-demand careers in industrial automation and precision manufacturing.

By participating in SkillsUSA competitions, students enhance their leadership, teamwork, and technical expertise, positioning themselves for success in post-secondary education and the workforce. With industry certifications and real-world experience, graduates of the Robotics and Automation program are well-prepared to enter careers in engineering technology, industrial robotics, and advanced manufacturing.





Transportation, Distribution, and Logistics Program

The Transportation, Distribution, and Logistics program at Katy ISD prepares students for careers in automotive repair, vehicle maintenance, and commercial driving. The program consists of two Programs of Study: Automotive and Collision Repair and CDL (Commercial Driver's License).

Students participate in SkillsUSA competitions, showcasing their expertise in automotive repair, diagnostics, and transportation logistics. The Katy ISD SkillsUSA teams consistently perform at the state and national levels, demonstrating leadership, technical skills, and industry knowledge.

Instructional Area: Automotive and Collision Repair

Classroom Happenings

Students in the Automotive and Collision Repair program gain hands-on experience diagnosing, repairing, and maintaining vehicles. They work on real-world automotive service tasks, including servicing the Katy ISD white fleet and customer vehicles.

Key topics covered in the program include:

- Brake Systems – Diagnosing and repairing hydraulic and disc brake systems.
- Electrical & Electronic Systems – Troubleshooting vehicle wiring, sensors, and onboard diagnostics.
- Engine Performance & Repair – Performing engine overhauls and fine-tuning for optimal performance.
- Transmission & Drivetrain – Servicing manual and automatic transmissions, differentials, and drive shafts.
- Suspension & Steering Systems – Repairing steering mechanisms, shocks, and alignment systems.
- Heating & Air Conditioning – Maintaining HVAC systems, refrigerant handling, and climate control diagnostics.

Students gain real-world experience in diagnosing and repairing various vehicle systems, including oil changes, tire balancing and rotations, wheel alignment, electrical diagnostics, and A/C system repairs.

Industry Skills Achieved

✓ Technical Expertise – Mastering diagnostics, repair techniques, and vehicle maintenance.
✓ Communication & Collaboration – Working effectively with teams and customers.

✓ Problem-Solving & Critical Thinking – Diagnosing vehicle issues and implementing repairs.
✓ Time Management & Organization – Managing repair schedules and workflow efficiency.
✓ Attention to Detail – Ensuring precision in automotive diagnostics and repair procedures.

Students earn Automotive Service Excellence (ASE) Entry Level Certifications in:

- 🎓 5 Automatic Transmission/Transaxle
- 🎓 38 Automobile Service Technology
- 🎓 37 Brakes
- 🎓 34 Electrical/Electronic Systems
- 🎓 10 Engine Performance
- 🎓 36 Engine Repair
- 🎓 31 Heating and Air Conditioning
- 🎓 41 Maintenance and Light Repair
- 🎓 5 Manual Drive Train and Axles
- 🎓 37 Suspension and Steering

Number of CTE teachers from industry in this program: 3

Instructional Area: CDL (Commercial Driver's License)

Classroom Happenings

Students in the CDL program develop the skills and knowledge necessary for operating commercial vehicles, including trucks and tractor-trailers. The program provides comprehensive training in vehicle operations, logistics, and transportation regulations.

Key topics covered in the program include:

- Defensive Driving & Safety Procedures – Understanding hazard awareness and accident prevention strategies.
- Vehicle Inspection & Maintenance – Conducting pre-trip inspections to ensure vehicle safety and compliance.
- Driving Maneuvers – Practicing backing, shifting gears, and handling various driving conditions.
- DOT Regulations & Compliance – Learning Department of Transportation (DOT) rules, hours of service, and legal weight limits.
- Road Driving – Operating vehicles on highways and city streets under different traffic conditions.
- Range Maneuvers – Training in controlled environments for driving in snow, rain, and nighttime conditions.
- Cargo Handling & Logistics – Learning how to secure, load, and unload cargo safely and efficiently.

Students gain hands-on experience with commercial driving techniques that prepare them for entry-level positions in the trucking and transportation industry.

Industry Skills Achieved

✓ Communication & Collaboration – Effectively communicating with logistics teams and dispatchers.
✓ Adaptability & Problem-Solving – Adjusting to different road conditions and vehicle challenges.

✓ Patience & Situational Awareness – Practicing safe driving and defensive maneuvering techniques.
✓ Time Management & Organization – Managing schedules, routes, and delivery deadlines.
✓ Professionalism & Work Ethic – Demonstrating responsibility and adherence to transportation laws.

Students earn the Commercial Driver's License (CDL) Certification, which allows them to pursue careers in commercial transportation, logistics, and fleet management.

Summary & Conclusion

The Transportation, Distribution, and Logistics program at Katy ISD equips students with the technical expertise, industry certifications, and hands-on experience necessary for careers in automotive repair and commercial transportation.

Through real-world training in automotive service and commercial driving, students develop critical problem-solving, teamwork, and leadership skills. The ASE and CDL certifications they earn prepare them for high-demand careers in vehicle maintenance, trucking, and logistics management.

By participating in SkillsUSA competitions, students showcase their abilities in diagnostics, vehicle repair, and transportation logistics, making them highly competitive in the workforce. With strong industry partnerships, state-of-the-art training facilities, and expert instructors from the field, the Katy ISD Transportation, Distribution, and Logistics program provides an excellent foundation for students seeking careers in the automotive and commercial driving industries.

Instructional Area: Real Estate Dual Credit

Classroom Happenings

Students enrolled in the Real Estate Dual Credit program receive college-level instruction on the fundamentals of real estate law, transactions, finance, and property management. The curriculum prepares students for state licensure exams and careers in real estate sales, brokerage, and property development.

Key topics covered in the program include:

- Real Estate Transactions – Understanding property financing, representation, title transfers, closings, and deeds.
- Real Estate Law – Studying the law of agency, property ownership rights, and contract law.
- Real Estate Finance – Learning how to calculate commissions, mortgage interest rates, and investment returns.
- Real Estate Development – Exploring site analysis, design, construction, marketing, and leasing strategies.
- Real Estate Marketing – Developing strategies for advertising, property showings, and client negotiations.
- Real Estate Economics – Evaluating market conditions, supply and demand, and property valuation methods.
- Property Management – Conducting feasibility studies on rental properties and investment portfolios.

Students apply these concepts through case studies, market analysis projects, and real-world simulations, ensuring they develop practical knowledge and industry-ready skills.

Industry Skills Achieved

✓ Communication & Negotiation – Effectively working with clients, lenders, and real estate professionals.
✓ Financial Analysis – Calculating mortgage rates, commissions, and investment profitability.
✓ Critical Thinking & Decision-Making – Analyzing market trends and property values.
✓ Time Management & Organization – Managing listings, client portfolios, and transaction deadlines.
✓ Marketing & Sales Strategies – Understanding branding, advertising, and digital marketing for real estate.
✓ Legal & Ethical Awareness – Ensuring compliance with real estate laws, contracts, and ethical practices.

Students successfully earn their Real Estate License, allowing them to immediately enter the workforce as licensed real estate agents or continue their education in real estate and business-related fields.

Number of CTE teachers from industry in this program: 1

Summary & Conclusion

The Real Estate Dual Credit program at Katy ISD provides students with a direct pathway into the real estate industry, offering college-level coursework, hands-on learning experiences, and licensure preparation.

By earning their real estate license in high school, students can immediately pursue careers in real estate sales, property management, or real estate investment. The program equips students with strong financial, legal, marketing, and analytical skills, ensuring they are prepared to thrive in a competitive real estate market.

With a focus on practical applications, industry-aligned training, and expert instruction from professionals in the field, the Katy ISD Real Estate program provides an exceptional opportunity for students to gain early entry into the real estate profession.

Instructional Area: Career Preparation

Classroom Happenings

Students in the Career Preparation program receive instruction on essential workplace skills and industry best practices before applying them in real-world job settings. They gain practical work experience in various occupations across the local area, learning how to navigate professional environments, meet employer expectations, and enhance their career readiness.

Students participate in paid and unpaid positions with local business partners, who provide ongoing feedback and mentorship to support student growth and development.

Topics covered in the program include:

- Workplace Communication – Understanding professional verbal and written communication.
- Career Readiness – Developing résumés, cover letters, and interview skills.

- Time Management & Organization – Prioritizing tasks and meeting deadlines in a work environment.
- Professionalism & Work Ethic – Learning accountability, teamwork, and leadership in the workplace.
- Financial Literacy – Managing earnings, budgeting, and understanding payroll and benefits.
- Workplace Safety – Following safety procedures and regulations based on industry standards.
- Industry-Specific Skills – Gaining hands-on experience in fields such as healthcare, business, technology, construction, and customer service.
- Problem-Solving & Decision-Making – Developing critical thinking skills to handle workplace challenges.
- Networking & Career Advancement – Building professional connections and exploring long-term career opportunities.

Students gain firsthand exposure to the professional world, enhancing their technical and soft skills while exploring career paths aligned with their interests.

Industry Skills Achieved

✓ Communication & Teamwork – Learning to interact professionally with colleagues, customers, and supervisors.
✓ Problem-Solving & Critical Thinking – Adapting to workplace challenges and making informed decisions.
✓ Time Management & Organization – Balancing work responsibilities with deadlines and efficiency.
✓ Professionalism & Work Ethic – Demonstrating accountability, reliability, and workplace integrity.
✓ Customer Service & Leadership – Engaging with clients, handling inquiries, and managing workplace responsibilities.

✓ Technical & Industry-Specific Training – Acquiring job-related skills in various industries.
✓ Networking & Career Development – Building connections and preparing for long-term career success.

Students gain real-world experience through internships and employment opportunities, making them better prepared for full-time careers after high school or continued education in their chosen fields.

Number of CTE teachers from industry in this program: 5

Summary & Conclusion

The Career Preparation program at Katy ISD offers students a unique opportunity to gain work experience while still in high school. By partnering with local businesses and industry professionals, students receive hands-on training, career mentorship, and exposure to various professional settings.

Through paid and unpaid work experiences, students develop valuable technical and soft skills that prepare them for full-time employment, post-secondary education, or career advancement opportunities.

By emphasizing professionalism, leadership, workplace communication, and job-specific expertise, the Katy ISD Career Preparation program equips students with the tools they need to succeed in the workforce while providing a direct pathway to meaningful careers in a wide range of industries.



Instructional Area: NJROTC

Classroom Happenings

Students in the NJROTC program receive comprehensive training in military science, leadership principles, and discipline. This program offers a structured pathway for students considering a military career, while also instilling valuable life skills applicable to all professional fields.

Cadets actively participate in NJROTC competitions, showcasing drill skills, physical fitness, teamwork, and leadership abilities.

The NJROTC curriculum includes:

- Leadership & Character Development – Learning the core principles of effective leadership and personal responsibility.
- Military Science & Strategy – Understanding basic military customs, traditions, and chain of command.
- Physical Training (PT) – Engaging in structured fitness programs to enhance strength, endurance, and discipline.

- Teamwork & Communication – Practicing collaborative problem-solving and effective interpersonal communication.
- Drill & Ceremony – Learning military marching, formations, and precision drill maneuvers.
- Citizenship & Civic Responsibility – Gaining a deeper understanding of patriotism, national security, and civic duties.
- Survival & Navigation Skills – Acquiring basic survival training, map reading, and navigation techniques.
- NJROTC Competitions – Competing in drill team, color guard, marksmanship, and academic challenge events.
- Career Exploration – Exploring career paths in the U.S. Navy, Army, Air Force, Marine Corps, Coast Guard, and beyond.

This highly structured program builds confidence, discipline, and leadership abilities, preparing students for both military service and civilian careers.

Industry Skills Achieved

✓ Leadership & Teamwork – Developing strong decision-making and group coordination skills.
✓ Communication & Public Speaking – Learning to give clear instructions and lead teams effectively.
✓ Time Management & Organization – Mastering self-discipline, responsibility, and structured routines.
✓ Physical Fitness & Mental Toughness – Enhancing strength, endurance, and mental resilience.
✓ Problem-Solving & Critical Thinking – Adapting to challenges and making sound, strategic decisions.
✓ Ethics & Professionalism – Upholding integrity, respect, and personal accountability.

✓ Military & Civilian Career Readiness – Gaining practical skills applicable to various career fields.

The NJROTC program equips students with the discipline, leadership, and practical knowledge needed to succeed in the military, law enforcement, emergency services, and corporate leadership roles.

Number of CTE teachers from industry in this program: 2

Summary & Conclusion

The Katy ISD NJROTC program is a rigorous, character-building experience that develops future leaders by teaching discipline, responsibility, and teamwork. Students gain valuable leadership skills, military knowledge, and real-world experience that prepare them for careers in the armed forces, law enforcement, public service, and beyond.

Through hands-on training, structured leadership development, and participation in NJROTC competitions, cadets build confidence, resilience, and a strong work ethic. Whether students pursue a military career or a civilian leadership path, the NJROTC program provides a solid foundation for success in any field.





Final Notes and Overview

Empowering Students Through Career and Technical Education (CTE)

The Katy ISD Career and Technical Education (CTE) programs provide students with valuable, real-world skills, industry certifications, and hands-on learning experiences across multiple career pathways. From engineering and business management to health science, law enforcement, culinary arts, and beyond, these programs prepare students for both immediate workforce entry and continued postsecondary education.

Students gain practical experience, industry knowledge, and leadership development by participating in internships, field training, student-run enterprises, and regional and national competitions. Through these experiences, students apply academic concepts in real-world settings, making them highly competitive job candidates and college applicants.

Key Takeaways from Katy ISD CTE Programs

1. Career-Ready Skills and Industry Certifications

Each CTE program equips students with essential workplace skills such as critical thinking, problem-solving, teamwork, time management, and leadership. Additionally, students earn industry-recognized certifications, ensuring they are well-prepared to enter the workforce or continue their education in their chosen field.

✓ Certifications Earned Include:

- AWS Welding Certifications
- Elanco Veterinary Certifications
- Autodesk AutoCAD and Revit Certifications
- Adobe Creative Suite Certifications (Illustrator, Photoshop, Premiere Pro, InDesign, etc.)
- ServSafe Manager Certification (Culinary)
- Pharmacy Technician Certification
- Emergency Medical Technician (EMT) and Patient Care Technician (PCT) Certifications
- NCCER Construction Certifications
- Stukent Social Media Marketing Certification
- Cisco CCNA, CompTIA Security+, and AWS Cloud Practitioner Certifications
- Real Estate License
- Commercial Driver's License (CDL)
- And many more!

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2. Hands-On Learning and Industry Engagement

Students gain real-world experience through internships, on-the-job training, and direct partnerships with local businesses, hospitals, police departments, fire departments, engineering firms, and community organizations. These hands-on experiences allow students to apply their classroom learning to real industry challenges, preparing them for successful careers and postsecondary education opportunities.

✓ **Examples of Hands-On Learning Include:**

- Engineering and Robotics students design, build, and program real-world automated systems using Fanuc robots and CNC machines.
- Health Science students complete clinical rotations at hospitals and healthcare facilities, gaining patient care experience.
- Law and Public Service students intern with local law enforcement agencies, courts, and legal professionals, gaining exposure to the criminal justice system.
- Business and Marketing students participate in real-world stock market simulations, business plan development, and professional networking events.
- Culinary students operate a school-based restaurant and catering service, learning restaurant management, customer service, and food preparation.
- NJROTC cadets develop self-discipline, leadership, and teamwork skills while preparing for potential military or civilian leadership careers.

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3. Leadership, Competitions, and Professional Development

Katy ISD CTE students participate in state and national competitions through organizations such as SkillsUSA, Future Business Leaders of America (FBLA), Texas FFA, HOSA, Technology Student Association (TSA), and VEX Robotics. These competitions allow students to demonstrate their skills in real-world industry scenarios, network with professionals, and earn scholarships for higher education.

✓ Examples of Competitive Success:

- Katy ISD TSA and SkillsUSA teams consistently perform at the state level, earning recognition for their innovation and technical expertise.
- FFA teams compete nationally in Career and Leadership Development Events (CDEs & LDEs), showcasing their skills in animal science, environmental studies, and agribusiness.

- Health Science students compete in HOSA events, demonstrating their medical knowledge and patient care skills.
- Robotics teams participate in VEX and First Robotics competitions, developing engineering, programming, and problem-solving abilities.

These competitive events help students develop confidence, professionalism, and expertise, making them stand out in college applications and job interviews.

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4. Soft Skills and Workforce Preparation

In addition to technical skills, Katy ISD CTE programs emphasize soft skills development, ensuring that students are well-rounded professionals who can succeed in any career.

✓ Essential Soft Skills Taught Across All Programs:

- Communication & Public Speaking – Effectively conveying ideas to colleagues, customers, and employers.
- Problem-Solving & Critical Thinking – Analyzing situations and making informed decisions.
- Leadership & Teamwork – Working collaboratively and taking initiative in projects.
- Time Management & Organization – Meeting deadlines and managing workload effectively.
- Professionalism & Work Ethic – Demonstrating reliability, responsibility, and integrity in the workplace.
- Customer Service & Client Relations – Understanding how to interact with and serve customers in various industries.

These skills ensure that students are job-ready, adaptable, and equipped for success in their future careers.

Conclusion: Preparing Students for the Future

The Katy ISD CTE program is a pathway to success for students, providing them with real-world experience, career certifications, leadership opportunities, and strong industry connections. Whether students enter the workforce immediately, pursue technical training, or attend college, the skills they gain through CTE will serve them for a lifetime.

By fostering innovation, leadership, and technical expertise, Katy ISD is empowering students to become future business leaders, engineers, medical professionals, tradespeople, educators, and entrepreneurs.

With state-of-the-art facilities, dedicated instructors, and industry partnerships, Katy ISD's CTE programs continue to be a gold standard in career and technical education, shaping the next generation of skilled professionals and industry leaders.

For more information about our programs, pathways, and student success stories, visit the Katy ISD CTE website or speak with a career advisor today!