Katy Independent School District
Career and Technical Education
Programs of Study
2020-2021
Career and Technical Education (CTE) provides opportunities for secondary students to explore career fields of interest. Whether students decide to enter post-secondary education, the military or the workforce after high school graduation, CTE courses and programs provide authentic learning experiences to enhance their educational experiences.

Katy ISD offers over 100 CTE courses that represent the 14 Texas identified career clusters. Many upper level courses are aligned with industry credentialing. Meaning that students have the option of taking a recognized industry credential given by a third-party, which validates the students’ knowledge and skill set.

More information on the endorsements, career clusters, and programs of study can be found within this document.

Career and Technical Education Mission Statement
Katy ISD Career and Technical Education provides students with innovative experiences by aligning theory and application to develop technical and professional knowledge and skills for a successful future.

Career and Technical Education Vision Statement
Katy ISD Career and Technical Education collaborates with and supports teachers across all disciplines so that students have opportunity to make meaning of their learning in all areas through connections to industry. We provide industry-recognized opportunities for students which validate tangible skills that students may use to enter industry and/or post-secondary education.
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   b. Animal Science (Vet Assisting) Program of Study
   c. Welding Program of Study
   d. Plant Science Program of Study
7. Architecture and Construction Career Cluster
   a. Architectural Design Program of Study
8. Arts, Audio Video Technology, and Communications Career Cluster
   a. Digital Communications Program of Study
   b. Design & Multimedia Arts Program of Study
   a. Accounting & Financial Services Program of Study
   b. Business Management Program of Study
   c. Marketing & Sales Program of Study
10. Education and Training Career Cluster
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11. JROTC Career Cluster
    a. JROTC Program of Study
12. Health Science Career Cluster
    a. Clinical Rotations and EMT Program of Study
    b. Dental Assisting and Pharmacy Technician Program of Study
13. Hospitality and Tourism Career Cluster
    a. Culinary Arts Program of Study
    b. Lodging & Restaurant Management Program of Study
    c. Travel, Tourism, and Attractions Program of Study
14. Human Services Career Cluster
    a. Cosmetology Program of Study
    b. Family and Consumer Science Program of Study
15. Information Technology Career Cluster
    a. Networking Systems Program of Study
    b. Cybersecurity Program of Study
16. Law and Public Service Career Cluster
    a. Law Enforcement Program of Study
17. Manufacturing Career Cluster
    a. Advanced Manufacturing Program of Study
    b. Manufacturing Technology Program of Study
    a. Engineering Program of Study
    b. Computer Science Program of Study
19. Transportation, Distribution, and Logistics Career Cluster
    a. Automotive Program of Study
All Career & Technical Education (CTE) courses specifically support the Business & Industry, Public Services, STEM, and Multidisciplinary endorsement categories for the Foundation High School Program + Endorsement graduation plan. Katy ISD offers over 100 unique CTE courses grades 7 through 12. The following definitions may assist you in understanding how CTE courses and programs fit within the graduation plan.

**Endorsements**: Endorsements consist of a related series of courses that are grouped together by interest or skill set. They provide students with in-depth knowledge of a subject area. There are five (5) endorsement areas:
- Arts and Humanities
- Business and Industry
- Multi-Disciplinary Studies
- Public Service
- Science, Technology, Engineering, and Mathematics (STEM)

**Career Clusters**: A career cluster is a group of careers that share common themes. There are fourteen (14) Texas identified career clusters that are aligned with the five (5) Endorsement categories.
- Agricultural, Food, and Natural Resources
- Architecture and Construction
- Arts, Audio Visual Technology, and Communications
- Business, Marketing and Finance
- Education and Training
- JROTC
- Health Science
- Hospitality and Tourism
- Humans Services
- Information Technology
- Law and Public Service
- Manufacturing
- Science, Technology, Engineering, and Mathematics
- Transportation, Distribution, and Logistics

**Program of Study**: A program of study is a coordinated, non-duplicative sequence of courses which progress in specificity, beginning with all aspects of industry and leading to more occupation specific instruction. Currently, Katy ISD offers 27 programs of study.

**Agriculture, Food, and Natural Resources Career Cluster**
- Agribusiness Program of Study
- Animal Science (Vet Assisting) Program of Study
- Welding Program of Study
- Plant Science Program of Study

**Architecture and Construction Career Cluster**
- Architectural Design Program of Study

**Arts, Audio Video Technology, and Communications Career Cluster**
- Digital Communications Program of Study
- Design & Multimedia Arts Program of Study

**Business, Marketing, and Finance Career Cluster**
- Accounting & Financial Services Program of Study
- Business Management Program of Study
- Marketing & Sales Program of Study

**Education and Training Career Cluster**
- Teaching & Training

**JROTC Career Cluster**
- JROTC Program of Study

**Health Science Career Cluster**
- Clinical Rotations and EMT Program of Study
- Dental Assisting and Pharmacy Technician Program of Study
- Hospitality and Tourism Career Cluster
- Culinary Arts Program of Study
- Lodging & Restaurant Management Program of Study
- Travel, Tourism, and Attractions Program of Study
- Human Services Career Cluster
- Cosmetology Program of Study
- Family and Consumer Science Program of Study
- Information Technology Career Cluster
- Networking Systems Program of Study
- Cybersecurity Program of Study
- Law and Public Service Career Cluster
- Law Enforcement Program of Study
- Manufacturing Career Cluster
- Advanced Manufacturing Program of Study
- Manufacturing Technology Program of Study
- Science, Technology, Engineering, and Math (STEM) Career Cluster
- Engineering Program of Study
- Computer Science Program of Study
- Transportation, Distribution, and Logistics Career Cluster
- Automotive Program of Study
MILLER CAREER & TECHNOLOGY CENTER (MCTC)

AGE AND CREDIT REQUIREMENTS
Courses are open to KISD students classified as juniors or seniors for 2020-2021. Certain courses with internships have an age requirement of 17 before participating in the off-campus training. All students must complete the request process to be considered for enrollment. Students should plan to attend MCTC for at least three class periods. Most career courses are two class periods. Career courses will be paired with academic courses to fit the student’s course request/needs. Availability of courses is subject to scheduling. The priority request deadline is February 7, 2020.

TRANSPORTATION
Students may provide their own transportation or ride the MCTC/OAC/RHS bus. Morning bus riders attending MCTC will be transported directly from pick-up points to MCTC utilizing the MCTC/OAC/RHS bus route. Students will be transported back to their home campus when MCTC dismisses the morning session. Bus riders who attend MCTC beginning with 4th period or after will be transported from home campuses to MCTC. After school is dismissed, bus riders will be transported directly to drop-off points utilizing the MCTC/OAC/RHS bus route, not back to their home campus. Students enrolled in internships and/or certain rotation programs may be required to provide their own transportation. Students may not carpool with another student to an internship. Those courses are indicated by the car icon.

COMMITMENT
All of the career courses at MCTC represent a commitment to attend MCTC for a FULL SCHOOL YEAR. MCTC career courses include a coherent sequence of curriculum for two semesters.

AVAILABILITY OF COURSES
Listing of a course in this publication does not guarantee the course will be taught during the 2020-2021 school year. Decisions as to whether a particular course will be taught are based upon the number of students requesting the course and the availability of qualified personnel to teach the course.

COURSE FEES
Some MCTC courses have fees. Details on all fees will be discussed at the New Student Orientation during the Spring semester.
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<thead>
<tr>
<th>Course</th>
<th>Certification Opportunities</th>
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<tbody>
<tr>
<td>B122</td>
<td>Agricultural Structures Design &amp; Fabrication</td>
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<tr>
<td>B130</td>
<td>Agricultural Mechanics &amp; Metal Technologies</td>
</tr>
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<td>B136</td>
<td>Agricultural Equipment Design &amp; Fabrication</td>
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<td>B237</td>
<td>Floral Design</td>
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<tr>
<td>B148V</td>
<td>Vet Assisting</td>
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<tr>
<td>B190</td>
<td>Wildlife, Fisheries &amp; Ecology Management</td>
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<tr>
<td>R029</td>
<td>Architectural Design I</td>
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<td>R030/R030V</td>
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<tr>
<td>R001V</td>
<td>Practicum in Architectural Design</td>
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<tr>
<th>Course</th>
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<td>Commercial Photography II</td>
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<td>R031</td>
<td>Audio Video Production I</td>
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<td>R036</td>
<td>Animation I</td>
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<tr>
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<td>R082V</td>
<td>Clinical Rotation - Practicum in Health Science</td>
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<td>R092V</td>
<td>Dental Assisting - Practicum in Health Science</td>
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<tr>
<td>R085V</td>
<td>EMT Basic - Practicum in Health Science</td>
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<tr>
<td>R060V</td>
<td>Pharmacy Tech - Practicum in Health Science</td>
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<td>R371V</td>
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<td>R363V</td>
<td>Hospitality Services</td>
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<tr>
<td>R752V</td>
<td>Cosmetology II</td>
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<tr>
<td>R649V</td>
<td>Computer Maintenance</td>
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<tr>
<td>R649V</td>
<td>Cyber Security I</td>
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<tr>
<td>R649V</td>
<td>Cyber Security II</td>
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<tr>
<td>R560V</td>
<td>Cisco Network Engineering II</td>
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<tbody>
<tr>
<td>R058V</td>
<td>Manufacturing Engineering II</td>
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<tr>
<td>R059V</td>
<td>Practicum in Manufacturing Engineering</td>
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<td>R062</td>
<td>Engineering Science</td>
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<tr>
<td>R660V</td>
<td>Practicum in STEM</td>
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<tr>
<td>R700V</td>
<td>Automotive Technology I</td>
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<tr>
<td>R710V</td>
<td>Automotive Technology II</td>
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<td>2009</td>
<td>Advanced Digital Art &amp; Animation</td>
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<td>8130</td>
<td>Agricultural Mechanics &amp; Metal Technologies</td>
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<td>8148V</td>
<td>Vet Assisting - Practicum</td>
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<tr>
<td>8700V</td>
<td>Automotive Tech I</td>
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<tr>
<td>8093</td>
<td>Principles of Health Science</td>
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<tr>
<td>8082V</td>
<td>Clinical Rotation - Practicum in Health Science</td>
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<tr>
<td>8092V</td>
<td>Dental Assisting - Practicum in Health Science</td>
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<tr>
<td>8085V</td>
<td>EMT Basic - Practicum in Health Science</td>
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<tr>
<td>8086V</td>
<td>Pharmacy Tech - Practicum in Health Science</td>
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<tr>
<td>8744V</td>
<td>Cosmetology I</td>
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<tr>
<td>8353</td>
<td>Principles of Human Services</td>
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<td>8311</td>
<td>Lifetime Nutrition &amp; Wellness</td>
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<tr>
<td>8371V</td>
<td>Culinary Arts</td>
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<tr>
<td>8373V</td>
<td>Practicum of Culinary Arts</td>
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<tr>
<td>8363V</td>
<td>Hospitality Services - Hotel and Restaurant Management</td>
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<tr>
<td>8016V, 8017V</td>
<td>Digital Audio I</td>
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<tr>
<td>8991V</td>
<td>Practicum in Education and Training</td>
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<td>8320</td>
<td>Fashion Design I</td>
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<td>8321</td>
<td>Fashion Design II</td>
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<td>8043</td>
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<tr>
<td>8040</td>
<td>Diversified Manufacturing I</td>
</tr>
<tr>
<td>8047</td>
<td>Diversified Manufacturing II</td>
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Career and Technical Student Organizations

FBLA contributes to the advancement of leadership, citizenship, personal growth, academic and technological skills. Competitive events enhance career and job preparedness, workplace competencies, self-confidence and the instructional program. Students enrolled in the following career clusters may have the opportunity to participate in an FBLA student organization: Business Management & Administration.

The Texas Association of Future Educators or TAFE (pronounced "taffy") is a co-curricular statewide student organization created to allow young men and women an opportunity to explore the teaching profession.

FCCLA provides opportunities for growth and leadership education. Lifelong skills are developed through character education, critical thinking, interpersonal communications and career preparation. Students enrolled in the following career cluster(s) may have the opportunity to participate in an FCCLA student organization: Architecture & Construction.

FFA activities are an integral part of the Agriculture, Food & Natural Resource Career Cluster. Opportunities for developing skills in leadership, cooperation and citizenship are provided through extension of classroom/laboratory learning experiences by membership and participation in FFA. Students enrolled in the following career clusters may have the opportunity to participate in an FFA student organization: Agriculture, Food & Natural Resources; Architecture & Construction.

HOSA provides opportunities for leadership and citizenship development through membership and participation. This organization also provides social and work/skills interaction with team professionals who help guide students in selecting future health careers while instilling an attitude of pride and professionalism. Students enrolled in the following career cluster(s) may have the opportunity to participate in an HOSA student organization: Health Science.

Skills USA facilitates Trade and Industry, enhances curriculum and involves all students. Students develop essential skills such as communication and teamwork, as well as gain a competitive edge in the work force. Skills USA teaches the importance of developing leadership skills, positive attitudes and pride in workmanship. Students enrolled in the following career clusters may have an opportunity to participate in Skills USA: Human Services; Transportation, and Distribution & Logistics.

TSA provides opportunities to develop and apply leadership, social, civic, and technologically related skills. TSA assists students in the achievement of technology related competencies. Students enrolled in the following career clusters may have the opportunity to participate in a TSA student organization: Science, Technology, Engineering & Mathematics.

National Technical Honor Society promotes educational excellence and higher standards for career and technical education. NTHS honors the achievement of top CTE students, provides scholarships to encourage the pursuit of higher education, and cultivates excellence in today's highly competitive, skilled workforce.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
The Agribusiness program of study explores the occupations and educational opportunities associated with the business of farming and agriculturally-related business that supplies farm inputs, such as machinery and seeds. This program of study may also include exploration into the marketing of farm products, the purchase of farm products either for further processing or resale, and grading or classifying unprocessed food or other agricultural products.

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. It also includes non-traditional agricultural occupations like wind energy, solar energy, and oil and gas production.

Successful completion of the Agribusiness program of study will fulfill requirements of a Business and Industry Endorsement.

Approved Statewide Program of Study - September 2019
Principles of Agriculture, Food, and Natural Resources
Katy ISD Course Number: 8110
Grades: 9-12
Credit: One

Students explain agriculture, food, and natural resource systems at the local, state, national, and international levels. This course identifies reasons for world trade and the political impact of agriculture, food, and natural resources. Plant and animal systems, principles of food products, and food processing systems are evaluated.

Professional Standards in Agribusiness
Katy ISD Course Number: 8120
Grades: 10-12
Credit: One-half

Students plan, propose, conduct, and evaluate an agribusiness entrepreneurship. This course identifies opportunities for involvement in agribusiness professional organizations and their role in formulating public policy. This course primarily focuses on leadership, communication, employer-employee relations, and problem solving as they relate to agribusiness.

Agribusiness Management and Marketing
Katy ISD Course Number: 8127
Grades: 10-12
Credit: One

This course allows the continued development of students’ leadership skills and provides further opportunities for the development of business procedures, management techniques, and agricultural product knowledge.

Practicum in Agriculture, Food, and Natural Resources
Katy ISD Course Number: 8125
Grades: 11-12
Credit: Two (one class period)
Prerequisite: 1 CTE Course in the same cluster

The practicum course is a capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources Career Cluster. Recommended prerequisite: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster. Students shall be awarded two credits for successful completion of this course.

NOTE: This course satisfies the FHSPE communication skills requirement.
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. Approved Statewide Program of Study - September 2019
Principles of Agriculture, Food, and Natural Resources  
Katy ISD Course Number: 8110  
Grades: 9-12  
Credit: One  

Students explain agriculture, food, and natural resource systems at the local, state, national, and international levels. This course identifies reasons for world trade and the political impact of agriculture, food, and natural resources. Plant and animal systems, principles of food products and food processing systems are evaluated.

Small Animal Management  
Katy ISD Course Number: 8170  
Grades: 10-12  
Credit: One-half  

Students will acquire knowledge and skills related to small animals and the small animal management industry. Small Animal Management may address topics related to small mammals such as dogs and cats, amphibians, reptiles, and birds.

Equine Science  
Katy ISD Course Number: 8145  
Grades: 10-12  
Credit: One-half  

Students learn skills related to animal systems and develop knowledge related to career opportunities. Animal species studied in this course include: horses, donkeys, and mules.

Livestock Production  
Katy ISD Course Number: 8141  
Grades: 10-12  
Credit: One  

Students use skills relating to livestock production, anatomy and physiology related to nutrition, reproduction, health, and management of domesticated animals. Animal species studied include beef cattle, dairy cattle, swine, sheep, goats, and poultry.

Veterinary Medical Applications  
Katy ISD Course Number: 8147V  
Grades: 11-12  
Credit: Two  
Requirement: Concurrent enrollment in an additional course credit at MCTC.

Veterinary Medical Applications provides an introduction to animal care, handling, health, safety, sanitation, surgical preparation, anatomy, physiology, and medical terminology. Students demonstrating required skills/competencies are eligible to take the Certified Veterinary Assisting (CVA) exam offered through the Texas Veterinary Medical Association (TVMA) in late May. Students who successfully pass the CVA exam receive a Practicum Pending Experience 1CVA (PPE) certificate and will be eligible to obtain CVA certification after properly documenting an additional 300 hours of clinical experience.

Advanced Animal Science  
Katy ISD Course Number: 8144  
Grades: 11-12  
Credit: One  
Prerequisite: Algebra I and Geometry; Biology and IPC or Chemistry; at least one of the following: Principles of Ag, Livestock Production, Small Animal, Wildlife, or Equine Science  

Students examine the interrelatedness of human, scientific, and technological dimensions of livestock production. Instruction allows for the application of scientific and technological aspects of animal science through 40% field and laboratory experiences.

NOTE: This course is an FHSPE third or fourth science credit option.

Practicum in Agriculture, Food, and Natural Resources  
Katy ISD Course Number: 8125  
Grades: 11-12  
Credit: Two (one class period)  
Prerequisite: 1 CTE Course in the same cluster  

The practicum course is a capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources Career Cluster. Recommended prerequisite: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster. Students shall be awarded two credits for successful completion of this course.

Vet Assisting  
Katy ISD Course Number: 8148V  
Grades: 12  
Credit: Two  
Prerequisite: Veterinary Medical Applications  
Co-requisite: Concurrent enrollment in an additional course credit at MCTC  

Vet Assisting includes field experience at a veterinary clinic or animal shelter in the spring where students may acquire hours towards the clinical experience needed to obtain CVA certification. These additional 300 hours must be supervised by a Doctor of Veterinary Medicine (DVM) or Licensed Veterinary Technician (LVT) and completed within one calendar year of taking the CVA exam.

NOTE: Vet Assisting Practicum students must provide their own transportation.
The Applied Agricultural Engineering program of study explores the occupations and educational opportunities associated with applying knowledge of engineering technology and biological science to agricultural problems concerned with power and machinery, electrification, structures, soil and water conservation, and processing agricultural products. This program of study may also include exploration into diagnosing, repairing, or overhauling farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.

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. It also includes non-traditional agricultural occupations like wind energy, solar energy, and oil and gas production.

Successful completion of this program of study will fulfill requirements of a Business and Industry Endorsement.

Approved Statewide Program of Study - September 2019
Principles of Agriculture, Food, and Natural Resources
Katy ISD Course Number: 8110
Grades: 9-12
Credit: One

Students explain agriculture, food, and natural resource systems at the local, state, national, and international levels. This course identifies reasons for world trade and the political impact of agriculture, food and natural resources. Plant and animal systems, principles of food products, and food processing systems are evaluated.

Agricultural Mechanics and Metal Technologies
Katy ISD Course Number: 8130
Grades: 10-12
Credit: One

This course develops students’ understanding of agricultural mechanics as it relates to safety and skills in tool operation, electrical wiring, plumbing, carpentry, fencing, concrete, and metal working techniques. Students are expected to plan and perform cost-effective construction techniques including analyzing sites, plan for equipment and tools, and permit requirements.

Agricultural Structures Design and Fabrication
Katy ISD Course Number: 8122 (NEW NAME)
Grades: 11-12
Credit: One
Prerequisite: Agricultural Mechanics and Metal Technologies (8130)

Students will explore career opportunities, entry requirements, and industry expectations. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural structures design and fabrication. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings.

Agricultural Equipment Design and Fabrication/Lab
Katy ISD Course Number: 8136
Grades: 11-12
Credit: Two
Prerequisite: Agricultural Mechanics and Metal Technologies (8130) and Agricultural Structures Design and Fabrication (8122)

Students will acquire knowledge and skills related to the design and fabrication of agricultural equipment. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural equipment design and fabrication. To prepare for success, students reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings.

Practicum in Agriculture, Food, and Natural Resources
Katy ISD Course Number: 8125
Grades: 11-12
Credit: Two (one class period)
Prerequisite: 1 CTE Course in the same cluster

The practicum course is a capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources Career Cluster. Recommended prerequisite: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster. Students shall be awarded two credits for successful completion of this course.
The Plant Science program of study focuses on the science, research, and business of plants and other living organisms. It teaches students how to apply biology and life science to real-world life processes of plants and vegetation, either in laboratories or in the field.

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. It also includes non-traditional agricultural occupations like wind energy, solar energy, and oil and gas production.

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

Approved Statewide Program of Study - September 2019
COURSE DESCRIPTIONS

Principles of Agriculture, Food, and Natural Resources
Katy ISD Course Number: 8110
Grades: 9-12
Credit: One

Students explain agriculture, food, and natural resource systems at the local, state, national, and international levels. This course identifies reasons for world trade and the political impact of agriculture, food, and natural resources. Plant and animal systems, principles of food products, and food processing systems are evaluated.

Horticultural Science
Katy ISD Course Number: 8232
Grades: 10-12
Credit: One

Students develop an understanding of common horticultural management practices as they relate to food and ornamental plant production. Students design and establish landscapes, identify plants and their pests, select appropriate tools, and participate in a supervised agricultural improvement project.

Floral Design
Katy ISD Course Number: 8237
Grades: 10-12
Credit: One
Course Fee: $100 ($50 per semester)

Students apply principles and techniques of floral design as they develop an understanding of the management of floral enterprises. Analyzing artistic floral styles and historical periods, students learn traditions and contributions of diverse cultures. Students classify and identify plants used in their arrangements and floral designs for special occasions.

NOTE: This course satisfies the FHSPE fine art requirement.

Practicum in Agriculture, Food, and Natural Resources
Katy ISD Course Number: 8125
Grades: 11-12
Credit: Two (one class period)
Prerequisite: 1 CTE Course in the same cluster

The practicum course is a capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources Career Cluster. Recommended prerequisite: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster. Students shall be awarded two credits for successful completion of this course.
Supplemental courses do not fit into a given program of study but are still great additions to a student’s learning experience. This will also help them achieve their CTE Concentrator/Completer status.

**Wildlife, Fisheries, and Ecology Management**

**Katy ISD Course Number: 8190**

**Grades: 10-12**

**Credit: One**

This course examines the management of game and non-game wildlife species, fish, and aqua crops and their ecological needs, as related to current agricultural practices. Certification options include the opportunity for Boater and Hunter Education licenses upon successful completion of the course and licensure examination.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
ARCHITECTURAL AND CONSTRUCTION COURSES

1

ARCHITECTURAL DESIGN Program of Study

LEVEL 1
Principles of Applied Engineering (8616)

LEVEL 2
Architectural Design I (8029)
OR
Interior Design I (8198)

LEVEL 3
Architectural Design II (8030)
OR
Architectural Design II (8030V)

LEVEL 4
Practicum in Architectural Design (8001V)
OR
Career Preparation I (8520/8524)

COURSE INFORMATION

<table>
<thead>
<tr>
<th>COURSE NAME/ CODE</th>
<th>PREREQUISITES</th>
<th>GRADE</th>
<th>CERTIFICATIONS</th>
</tr>
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<tbody>
<tr>
<td>Principles of Applied Engineering (8616)</td>
<td>Algebra I</td>
<td>8-11</td>
<td>N/A</td>
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<tr>
<td>Interior Design I (8198)</td>
<td>None</td>
<td>10-12</td>
<td>N/A</td>
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<td>Architectural Design II (8030/8030V)</td>
<td>Architectural Design I (8029)</td>
<td>11-12</td>
<td>Revit - Autodesk Certified User (ACU) AutoCAD - Autodesk Certified User (ACU)</td>
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<tr>
<td>Practicum in Architectural Design (8001V)</td>
<td>Architectural Design II (8030/8030V) and Algebra II or current enrollment in Alg. II</td>
<td>12</td>
<td>Revit - Autodesk Certified User (ACU) AutoCAD - Autodesk Certified User (ACU)</td>
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<tr>
<td>Career Preparation I (8520/8524)</td>
<td>2 Completed CTE Courses from same cluster</td>
<td>11-12</td>
<td>N/A</td>
</tr>
</tbody>
</table>

The Architectural Design program of study explores the occupations and educational opportunities associated with developing, engineering, and designing building structures and facilities. This program of study may also include exploration into collecting and interpreting geographic information, researching and preparing maps, and interior design.

The Architecture and Construction Career Cluster® focuses on designing, planning, managing, building, and maintaining the built environment. Principles of Architecture provides an overview to the various fields of architecture, interior design, and construction management.

Successful completion of the Construction Design program of study will fulfill requirements of the Business and Industry Endorsement.

Approved Statewide Program of Study · September 2019
Principles of Applied Engineering  
Katy ISD Course Number: 8616  
Grades: 8-11  
Credit: One  
Prerequisite: Algebra I (or currently enrolled in Algebra I)  

Students use a variety of computer hardware and Autodesk applications to complete assignments and projects to gain an understanding of the interrelationships between various fields of science, technology, engineering, and mathematics.

Architectural Design I  
Katy ISD Course Number: 8029  
Grades: 10-12  
Credit: One  
Prerequisite: Principles of Applied Engineering (8616), Algebra I, Geometry recommended  

Students gain knowledge and skills needed for a career in architecture and construction or for the pursuit of a post-secondary degree in architecture, construction science drafting, interior design, or landscape architecture. Study includes design history, techniques, and tools related to the production of drawings, renderings, and scaled models for commercial and residential architecture.

Interior Design I  
Katy ISD Course Number: 8198  
Grades: 10-12  
Credit: One  

Students develop knowledge and skills related to interior and exterior environments, construction and furnishings, and learn to make wise consumer decisions, increase productivity, and compete in the industry.

Architectural Design II  
Katy ISD Course Number: 8030  
Katy ISD Course Number: 8030V  
Grades: 11-12  
Credit: Two  
Prerequisite: Architectural Design I (8029)  
Co-requisite: Concurrent enrollment in a core course at MCTC  

Architectural Design II is a hands-on, project based course that engages students with the knowledge and skills for a career in architecture and construction, as well as a foundation towards a post-secondary degree in the architecture field. Students learn advanced design, design history, techniques, and tools related to the production drawings, renderings, and scaled models for commercial or residential architecture. Students become familiar with college and industry Autodesk software to design and document solutions for course projects.

Practicum in Architectural Design  
Katy ISD Course Number: 8001V  
Grades: 12  
Credit: Two  
Prerequisite: Architectural Design II and Algebra II or concurrent enrollment in Algebra II  
Co-requisite: Concurrent enrollment in a core course at MCTC  

This project-based course builds upon architectural design foundations and increases understanding of working drawings, construction techniques, and building code requirements. The design process will be applied to architectural projects as students create architectural design solutions using software, illustrations, and modeling techniques. Students may have the opportunity to participate in field experience.

Career Preparation I  
Katy ISD Course Number: 8520/8524  
Grades: 11-12  
Credit: Two/Three (one class period)  
Prerequisite: 2 CTE Courses in the same cluster  
(8520- student is required to work 10 hours a week)  
(8524- student is required to work 15 hours a week)  

Career Preparation provides work-based learning experiences that combine classroom instruction with the student’s paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations, and portfolio development. The Career Preparation program supports strong partnerships between the school, business, and the community.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
The Arts, A/V Technology and Communications (AAVTC) Career Cluster® focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services. Careers in the AAVTC career cluster require a creative aptitude, a strong background in computer and technology applications, a strong academic foundation, and a proficiency in oral and written communication.

The Digital Communications program of study explores the occupations and educational opportunities associated with the production of audio and visual media formats for various purposes, such as TV broadcasts, advertising, video production, or motion pictures. This program of study may also include exploration into operating machines and equipment to record sound and images, such as microphones, sound speakers, video screens, projectors, video monitors, sound and mixing boards, and related electronic equipment.

Successful completion of the Digital Communications program of study will fulfill requirements of a Business and Industry Endorsement. Approved Statewide Program of Study - September 2019
Professional Communications
Katy ISD Course Number: 1520
Grades: 9-12
Credit: One-half

Professional Communications blends written, oral, and graphic communication in a career-based environment. Careers in the global economy require individuals to be creative and have a strong background in computer and technology applications, a strong and solid academic foundation, and a proficiency in professional oral and written communication.

Web Communications
Katy ISD Course Number: J2026
Grades: 7-8
Credit: One-half

Students will acquire skills in navigating the world wide web, use digital technology to work collaboratively with others, and learn to create a positive on-line footprint.

Digital Communications in the 21st Century
Katy ISD Course Number: 2002
Grades: 9-12
Credit: One

Students use a variety of multimedia tools including video, graphics, and software to create presentations, solve problems, and address real-world issues.

Audio Video Production I
Katy ISD Course Number: 8031
Grades: 9-12
Credit: One

Students learn video basics as they participate in production and post production stages of video creation, distribution, and evaluation. After mastering fundamentals, students produce video projects which include commercial ads, music videos and movie trailers.

Digital Audio Technology I/II
Katy ISD Course Number: 8027V/8028V
Grades: 11-12
Credit: One (each, two in total)
Co-requisite: Concurrent enrollment in an additional course credit at MCTC

Students will explore audio careers in the areas of radio and television broadcasting, video and film production, animation and game design, music production, and live sound. Students will develop an understanding of the audio industry with a technical emphasis on production and critical listening skills. Instruction includes the use of Digital Audio Work Stations (DAWS) using an AVID platform for recording and mixing, and the use of microphones. Students will have entry level audio technician skills upon completion. Students will be required to provide their own headphones.

Dual Credit Digital Audio Technology I/II
Katy ISD Course Number: 8016V,8017V/8018V,8019V
Grades: 11-12
Credit: One (each, two in total)
Co-requisite: Concurrent enrollment in a core course at MCTC and HCC admission requirements; TSI requirement

Dual Credit Digital Audio Technology I: Students can earn six college credit hours upon successful completion of this course; MUSC 1335: Commercial Music Software (3 credits) and MUSC 1331: MIDI I (3 credits)
Dual Credit Digital Audio Technology II: Students can earn six college credit hours upon successful completion of this course; MUSC 1323 Audio Electronics and MUSC 1327 Audio Engineering I.

Film I - Advanced Audio Video Production
Katy ISD Course Number: 8005V
Grades: 11-12
Credit: Two
Prerequisite: Audio Video Production I
Co-requisite: Concurrent enrollment in a core course at MCTC

This course is designed to provide initial training for entry-level employment in movie, video, and television production careers. Students receive instruction in the operation of different types of cameras, audio, technique, digital editing, and film production using an AVID platform. Students learn how to create media graphics for film and video, lighting, script writing, direction, production, special effects, signal control and monitoring equipment, set design, safety, and career opportunities.

Dual Credit Film I - Advanced Audio Video Production
Katy ISD Course Number: 8006V,8007V
Grades: 11-12
Credit: Two
Prerequisite: Audio Video Production I
Co-requisite: Concurrent enrollment in a core course at MCTC

Dual Credit Digital Audio Technology I: Students can earn six college credit hours upon successful completion of this course; MUSC 1335: Commercial Music Software (3 credits) and MUSC 1331: MIDI I (3 credits)
Dual Credit Digital Audio Technology II: Students can earn six college credit hours upon successful completion of this course; MUSC 1323 Audio Electronics and MUSC 1327 Audio Engineering I.

Film II- Practicum of Arts, AV Technology, & Communication
Katy ISD Course Number: 8035V
Grades: 12
Credit: Two
Prerequisite: Film I - Advanced Audio Video Production
Co-requisite: Concurrent enrollment in a core course at MCTC

Film II students receive advanced instruction in the operation of different types of cameras, mastery of media graphics, electronic editing, color correction, audio, techniques, lighting, script writing, direction, production, special effects, signal control and monitoring equipment, as well as set design and safety.

NOTE: Students in the MCTC digital audio and film course have the opportunity to train, and if successful, to work as a member of the Live Action Media Broadcast System (LAMBS) crew which operates the video board at Katy ISD Stadiums. Students apply to be part of the crew for each football game to the five live-action cameras and control functions such as instant replay, commercials, splash video graphics, or serve as Technical Director.
The Graphic Design and Multimedia Arts program of study explores the occupations and educational opportunities associated with designing or creating graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. This program of study may also include exploration into designing clothing and accessories, and creating special effects, animation, or other visual images using film, video, computers, or other electronic tools and media, for use in computer games, movies, music videos, and commercials.

The Arts, A/V Technology and Communications (AAVTC) Career Cluster® focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services. Careers in the AAVTC Career Cluster require a creative aptitude, a strong background in computer and technology applications, a strong academic foundation, and a proficiency in oral and written communication.

Successful completion of the Graphic Design & Multimedia Arts program of study will fulfill requirements of a Business and Industry Endorsement.

Approved Statewide Program of Study - September 2019
This course combines skills of electronic design, editing and completion of a product using a variety of hardware and software tools. Students learn to use a collection of software tools and design techniques to create a variety of formatted products.

Digital Arts and Animation
Katy ISD Course Number: 2005
Grades: 9-12
Credit: One

This course introduces 2- and 3-dimensional digital imagery. Topics include digital composition, design principles, raster and vector based 2-D graphic design and animation, and 3-D modeling and animation. Students use software, digital cameras, and scanners to create and edit digital designs for a range of purposes including fine art and art for publication.

NOTE: This course satisfies the FHSPE fine art requirement.

Commercial Photography I
Katy ISD Course Number: 8009
Grades: 9-12
Credit: One

Students learn to create quality photographs using digital cameras, computers with Adobe Photoshop CC, and computer printers. This course explores differences in types of cameras and lenses, as well as characteristics of different photographic media. Topics explored include lighting techniques and conventions of mounting, matting, and framing photographs.

Fashion Design I
Katy ISD Course Number: 8320
Grades: 10-12
Credit: One

This course covers all aspects of the textile and apparel industries. Students use current technology and production techniques to complete an apparel project. Proper care and maintenance for apparel are emphasized, as is effective management of a clothing budget.

Animation I
Katy ISD Course Number: 8036
Grades: 10-12
Credit: One

Prerequisite: Recommended Digital Arts & Animation

Careers in animation span all aspects of motion graphics. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio/Visual Technology, and Communications Career Cluster, students understand the history and design techniques widely used by animators.

Website Design
Katy ISD Course Number: 8636
Grades: 10-12
Credit: One

This course familiarizes students with the creation and management of websites. Students learn basic HTML programming, Dynamic HyperText Markup Language (DHTML) and JavaScript, interactive navigation, web animation, and web page layout and design. Industry standard software is used to create a wide range of web sites varying in style and purpose. Completion of this course provides students requisite skills to perform at the apprentice web designer level.

Graphic Design and Illustration I
Katy ISD Course Number: 8053
Grades: 10-12
Credit: One

Prerequisite: Recommended Digital Arts & Animation

This course introduces students to the visual communication design world with emphasis on elements and principles of design. This course focuses on designing, producing, exhibiting and publishing multimedia content in the field of art and design.

Commercial Photography II
Katy ISD Course Number: 8013
Grades: 10-12
Credit: One

Prerequisite: Commercial Photography I

Careers in photography span all aspects of industry from setting up a shot to delivering products in a competitive market. Students develop advanced technical knowledge and skills needed for success in the Arts, A/V Career Cluster. The focus is on developing an advanced technical understanding of the photography industry with emphasis on production, promotion, and presentation of professional quality photographs.

Fashion Design II
Katy ISD Course Number: 8321
Grades: 11-12
Credit: One

Prerequisite: Fashion Design I

This course is a continuation of Fashion Design I and recommended for the student who has a strong interest in textiles and/or the fashion industry. Students use current technology and more advanced production techniques to complete an apparel project. Students will develop an understanding of the fashion industry with an emphasis on design and construction.

Advanced Digital Arts and Animation
Katy ISD Course Number: 2009
Grades: 11-12
Credit: One

Prerequisite: Digital Arts & Animation

This course prepares students to pursue career or study in the area of graphic design. Students integrate multiple software packages, including the Adobe Creative Cloud Suite, as well as the Autodesk Entertainment Suite. Students participate in real-world productivity, including “client” meetings, deadlines and production of electronic and print design. This course prepares students for the Adobe Certified Associate exams.

Career Preparation I
Katy ISD Course Number: 8520/8524
Grades: 11-12
Credit: Two (one class period)

Prerequisite: 2 CTE Courses in the same cluster
(8520 - student is required to work 10 hours a week)
(8524 - student is required to work 15 hours a week)

Career Preparation provides work-based learning experiences that combine classroom instruction with the student's paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations and portfolio development. The Career Preparation program supports strong partnerships between the school, business, and the community.
Career & Technical Education

BUSINESS, MARKETING, AND FINANCE Career Cluster

1.) ACCOUNTING AND FINANCIAL SERVICES Program of Study

2.) BUSINESS MANAGEMENT Program of Study

3.) MARKETING AND SALES Program of Study

Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
The Accounting and Financial Services program of study teaches CTE concentrators how to examine, analyze, and interpret financial records. Through this program of study, students will learn the skills necessary to perform financial services, prepare financial statements, interpret accounting records, give advice, or audit and evaluate statements prepared by others. This program of study will also introduce students to mathematical modeling tools.

The Business, Marketing, and Finance Career Cluster® focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations.

Successful completion of the Accounting & Financial Services program of study will fulfill requirements of the Business and Industry Endorsement.

Approved Statewide Program of Study - September 2019
**Principles of Business, Marketing, and Finance**  
Katy ISD Course Number: 8540  
Grades: 9-11  
Credit: One  

Students apply academic knowledge and skills to relevant activities in business, marketing, and finance. Students gain knowledge and skills in economics and private enterprise systems, the impact of global business, marketing of goods and services, advertising and product pricing through analyzing sales processes, and financial management principles.

**Business Information Management I**  
Katy ISD Course Number: 8601  
Grades: 9-12  
Credit: One  

Students learn computer skills essential for college and work readiness using the industry standard Microsoft Office Suite. Students produce a variety of Word documents, create excel spreadsheets and charts, develop and maintain Access databases, and design professional PowerPoint presentations. Outlook is introduced as a necessary skill in college and work. Microsoft Office certifications are included in this course.

**Accounting I**  
Katy ISD Course Number: 8570  
Grades: 10-12  
Credit: One  
Prerequisite: Recommended Principles of Business, Marketing and Finance  

Students formulate and interpret financial information for use in management decision making while learning how industry standards, economic, financial, technological, international, social, legal, and ethical factors impact the field of accounting.

**Financial Mathematics**  
Katy ISD Course Number: 8590  
Grades: 11-12  
Credit: One  
Prerequisite: Algebra I; Geometry recommended  

This course teaches personal money management as students apply critical thinking skills to analyze personal financial decisions based on current and projected economic factors.

**Accounting II**  
Katy ISD Course Number: 8580  
Grades: 11-12  
Credit: One  
Prerequisite: Accounting I; Algebra I; Geometry recommended  

Accounting II continues the investigation of accounting, including how this field is impacted by industry standards as well as economic, financial, technological, international, social, legal and ethical factors. Students engage in managerial and cost accounting activities while formulating and interpreting financial information for use in making management decisions.

**Practicum in Business Management**  
Katy ISD Course Number: 8609/8611  
Grades: 11-12  
Credits: Two/Three (one class period)  
Requirement: Age 16  
Prerequisite: Business Information Management I  
(8609 - Student is required to work 10 hours week)  
(8611 - Student is required to work 15 hours week)  

Practicum allows for supervision in a paid or unpaid workplace environment where students apply interpersonal and technological skills to strengthen individual performance. The experience develops a foundation in the economical, financial, technological, international, social, and ethical aspects of business. Microsoft Office certifications are included in this course.

**Career Preparation I**  
Katy ISD Course Number: 8520/8524  
Grades: 11-12  
Credit: Two (one class period)  
Prerequisite: 2 CTE Courses in the same cluster  
(8520 - student is required to work 10 hours a week)  
(8524 - student is required to work 15 hours a week)  

Career Preparation provides work-based learning experiences that combine classroom instruction with the student’s paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations, and portfolio development. The Career Preparation program supports strong partnerships between the school, businesses, and the community.
The Business Management program of study teaches CTE concentrators how to plan, direct, and coordinate the administrative services and operations of an organization. Through this program of study, students will learn the skills necessary to formulate policies, manage daily operations, and allocate the use of materials and human resources. This program of study will also introduce students to mathematical modeling tools and organizational evaluation methods.

The Business, Marketing, and Finance Career Cluster® focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations.

Successful completion of the Business Management program of study will fulfill requirements of the Business and Industry Endorsement. Approved Statewide Program of Study - September 2019
Principles of Business, Marketing, and Finance  
Katy ISD Course Number: 8540  
Grades: 9-11  
Credit: One  

Students apply academic knowledge and skills to relevant activities in business, marketing, and finance. Students gain knowledge and skills in economics and private enterprise systems, the impact of global business, marketing of goods and services, advertising and product pricing through analyzing sales processes, and financial management principles.

Business Information Management I  
Katy ISD Course Number: 8601  
Grades: 9-12  
Credit: One  

Students learn computer skills essential for college and work readiness using the industry standard Microsoft Office Suite. Students produce a variety of Word documents, create Excel spreadsheets and charts, develop and maintain Access databases, and design professional PowerPoint presentations. Outlook is introduced as a necessary skill in college and work. Microsoft Office certifications are included in this course.

Business Law  
Katy ISD Course Number: 8510  
Grades: 11-12  
Credit: One  

Students apply technical skills to address business applications of contemporary legal issues and analyze the social and legal responsibility of business and industry. Students incorporate a broad base of knowledge that includes the legal, managerial, marketing, financial, ethical, and international dimensions of business to make appropriate business decisions.

Business Information Management II  
Katy ISD Course Number: 8622  
Grades: 10-12  
Credit: One  
Prerequisite: Business Information Management I (8601)  

Students learn business applications of emerging technologies, create complex word processing documents, develop sophisticated spreadsheets using charts and graphs, and make an electronic presentation using Microsoft Imagine Academy as a resource. Microsoft Office certifications are included in this course.

Global Business  
Katy ISD Course Number: 8530  
Grades: 10-12  
Credit: One-half  

Students apply technical skills to develop a foundation in the economic, financial, technological, international, social, and ethical aspects of business to become competent consumers, employees, and entrepreneurs. Communication, technological, and reasoning skills are applied to the global business environment.

Practicum in Business Management  
Katy ISD Course Number: 8609/8611  
Grades: 11-12  
Credit: Two  
Prerequisite: Age 16  
Prerequisites: Business Information Management I (8601)  
(8609 - Student is required to work 10 hours week)  
(8611 - Student is required to work 15 hours week)  

Practicum allows for supervision in a paid or unpaid workplace environment where students apply interpersonal and technological skills to strengthen individual performance. The experience develops a foundation in the economical, financial, technological, international, social and ethical aspects of business. Microsoft Office certifications are included in this course.  
NOTE: Students must provide their own transportation.

Career Preparation I  
Katy ISD Course Number: 8520/8524  
Grades: 11-12  
Credit: Two (one class period)  
Prerequisite: 2 CTE Courses in the same cluster  
Prerequisites: (8520 - Student is required to work (8524 - Student is required to work 15 hours week) 15 hours week) 10 hours week)  

Career Preparation provides work-based learning experiences that combine classroom instruction with the student’s paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations, and portfolio development. The Career Preparation program supports strong partnerships between the school, businesses, and the community.

Professional Advancement through Career Education (PACE KAP/GT)  
Katy ISD Course Number: 8550V/8551V  
Grades: 12  
Credit: One  
Prerequisite: Students must provide their own transportation  
Prerequisites: Students with a 3.8 GPA or higher; Enrollment in AP English Literature at MCTC.  

Students will participate in a non-paid internship program for a minimum of six hours a week with a professional to experience the demands and expectations of the profession first hand. This internship experience will provide students the opportunity to reinforce, apply and transfer their knowledge and skills. Students will research, design and construct a project on a topic related to their career interests under the supervision of a mentor. Students will submit progress reports, a final written report and they will defend their solutions to a panel of outside reviewers before the end of the school year.

Online Independent Study & Mentorship KAP or GT  
Katy ISD Course Number: 0136VIR/0137VIR  
Grades: 10-12  
Credit: One  
Co-requisite: Enrollment in an AP or KAP ELA course. Availability of seats in this course is limited. Priority will be given to upper classman.  

This course, based on the Texas Performance Standards Project for gifted/talented students, offers a nontraditional learning experience to students who have the ability to create innovative products or performances. Students will develop a product proposal, compile a portfolio, conduct in-depth research, work with a mentor from the business or professional community, and prepare for a public presentation of their product or performance at the end of the school year to be evaluated by an audience that includes experts in the field. Students work with a mentor to create a product related to their topic; the product is required to have real-world application and tangible documentation. This course is taken outside of regular school hours.
The Marketing and Sales program of study teaches CTE concentrators how to collect information to determine potential sales of a product or service and/or create a marketing campaign to market or distribute goods and services. Through this program of study, students will learn the skills necessary to understand and apply data on customer demographics, preferences, needs, and buying habits.

The Business, Marketing, and Finance Career Cluster® focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations.

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<thead>
<tr>
<th>COURSE NAME / CODE</th>
<th>PREREQUISITES</th>
<th>GRADE</th>
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<tr>
<td>Principles of Business, Marketing, and Finance (8540)</td>
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<td>9-11</td>
<td>N/A</td>
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<td>Fashion Marketing (8629)</td>
<td>None</td>
<td>9-12</td>
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<tr>
<td>Sports and Entertainment Marketing I (8633)</td>
<td>Recommended: Principles of Business, Marketing, and Finance (8540)</td>
<td>10-12</td>
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<td>Digital Marketing (8668)</td>
<td>None</td>
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<td>Sports and Entertainment Marketing II (8665)</td>
<td>Sports and Entertainment Marketing I (8633)</td>
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<td>Career Preparation I (8520/8524)</td>
<td>2 Completed CTE Courses from same cluster</td>
<td>11-12</td>
<td>N/A</td>
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</tbody>
</table>

Successful completion of the Marketing and Sales program of study will fulfill requirements of the Business and Industry Endorsement. Approved Statewide Program of Study - September 2019
Principles of Business, Marketing, and Finance  
Katy ISD Course Number: 8540  
Grades: 9-11  
Credit: One  

Students apply academic knowledge and skills to relevant activities in business, marketing, and finance. Students gain knowledge and skills in economics and private enterprise systems, the impact of global business, marketing of goods and services, advertising and product pricing through analyzing sales processes, and financial management principles.

Fashion Marketing  
Katy ISD Course Number: 8629  
Grades: 9-12  
Credit: One-half  

This course for students interested in marketing and fashion includes the study of fashion history, style and design, textiles and fashions, as well as development, promotion, advertising, retailing, and career opportunities in fashion marketing.

Sports and Entertainment Marketing  
Katy ISD Course Number: 8633  
Grades: 10-12  
Credit: One-half  
Recommended: Principles of Business, Marketing, and Finance (8540)  

Students learn basic marketing, target marketing and segmentation, sponsorship, event marketing, promotions, sponsorship proposals, and implementation of sports and entertainment marketing plans. This course provides opportunities to develop promotional plans, sponsorship proposals, endorsement contracts, sports and entertainment marketing plans, and evaluation and management techniques.

Sports and Entertaining Marketing II  
Katy ISD Course Number: 8665  
Grades: 10-12  
Credit: One-half  
Prerequisite: Sports and Entertainment Marketing I (8633)  

Students build on prior knowledge of sports and entertainment marketing. This course focuses on the principles of management and planning supported by research, financial, economic, ethical, and legal concepts. Students plan and execute an event, establish a sports, entertainment or recreation marketing product/business, and develop a career plan.

Career Preparation I  
Katy ISD Course Number: 8520/8524  
Grades: 11-12  
Credit: Two (one class period)  
Prerequisite: 2 CTE Courses in the same cluster  
(8520 - student is required to work 10 hours a week)  
(8524 - student is required to work 15 hours a week)  

Career Preparation provides work-based learning experiences that combine classroom instruction with the student’s paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations, and portfolio development. The Career Preparation program supports strong partnerships between the school, businesses, and the community.

Digital Marketing  
Katy ISD Course Number: 8668  
Grades: 9-12  
Credit: One-Half  

This course extends the marketing and sales program of study by having students investigate how the marketing community measures success in the ever-changing world of social media. This course is designed to look at the rise of social media and how marketers are integrating social media tools in their overall marketing strategies for today’s business needs.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
The Teaching and Training program of study prepares students for careers related to teaching, instruction, and creation of instructional and enrichment materials. The program of study introduces CTE concentrators to a wide variety of student groups and their corresponding needs. It familiarizes them with the processes for developing curriculum, coordinating educational content, and coaching groups and individuals.

The Education and Training Career Cluster® focuses on planning, managing, and providing education and training services and related learning support services. All parts of courses are designed to introduce learners to the various careers available within the Education and Training career cluster.

Successful completion of the Teaching and Training program of study will fulfill requirements of the Public Service Endorsement. Approved Statewide Program of Study - September 2019
**COURSE DESCRIPTIONS**

**Principles of Education and Training**
Katy ISD Course Number: 8994
Grades: 9-11
Credit: One

Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, and develop educational materials while gaining knowledge of child and adolescent development and principles of effective teaching and training practices.

**Principles of Human Services**
Katy ISD Course Number: 8353
Grades: 8-10
Credit: One
Course Fee: $15 plus student project cost

Students investigate human services careers, including counseling and mental health, early childhood development, family and community, and personal care services. The course addresses a broad range of skills related to personal development and management, promotion of strong families and preparation for adult roles. Other studies address nutrition and dietary practices; food selection and preparation; budgeting and consumer-buying practices and management of family housing needs.

**Human Growth and Development**
Katy ISD Course Number: 8995
Grades: 10-12
Credit: One

This course provides the background knowledge of human development for students to enter into Instructional Practices in Education and continue in the Education and Training pathway. Students examine development and theories from prenatal care through late adulthood.

**Child Development**
Katy ISD Course Number: 8341
Grades: 10-12
Credit: One

This course promotes knowledge and skills related to prenatal through school-age growth and development of children with a focus on health and well-being. Students investigate childcare and education careers.

**Instructional Practices in Education and Training**
Katy ISD Course Number: 8990
Grades: 11-12
Credit: Two
Prerequisite: Recommended Principles of Education and Training

Instructional Practices in Education provides juniors and seniors with the opportunity to explore the exciting career of teaching through classroom instruction and field experience in a school setting. Students observe and experience various aspects of teaching as they rotate through local Katy ISD schools and facilities. Field experiences provide students with experience in child development and principles of effective teaching practices. Course content includes leadership concepts and skills, employability skills, information on careers in education, and child growth and development. Instructional Practices in Education and Training address topics related to children in Pre-Kindergarten through 8th grade.

**Instructional Practices in Education and Training**
Katy ISD Course Number: 8990V
Grades: 11-12
Credit: Two
Prerequisite: Recommended Principles of Education and Training
Co-requisite: Concurrent enrollment in a core course at MCTC

Instructional Practices in Education provides juniors and seniors with the opportunity to explore the exciting career of teaching through classroom instruction and field experience in a school setting. Students observe and experience various aspects of teaching as they rotate through local Katy ISD schools and facilities. Field experiences provide students with experience in child development and principles of effective teaching practices. Course content includes leadership concepts and skills, employability skills, information on careers in education, and child growth and development. Instructional Practices in Education and Training address topics related to children in Pre-Kindergarten through 8th grade.

**Practicum in Education and Training**
Katy ISD Course Number: 8991V
Grades: 12
Credit: Two
Course Fee: See fee schedule
Prerequisite: Instructional Practices in Education and Training (8990 or 8990V)
Co-requisite: Concurrent enrollment in a core course at MCTC
Requirement: Students must provide their own transportation

Practicum in Education and Training provides seniors with more in-depth experience in the classroom. Lesson creation, classroom management skills, and teaching methods are studied. The Practicum provides broader field experience, which may include child development centers and other education facilities.

**Career Preparation I**
Katy ISD Course Number: 8520/8524
Grades: 11-12
Credit: Two (one class period)
Prerequisite: 2 CTE Courses in the same cluster
(8520 - student is required to work 10 hours a week)
(8524 - student is required to work 15 hours a week)

Career Preparation provides work-based learning experiences that combine classroom instruction with the student’s paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations, and portfolio development. The Career Preparation program supports strong partnerships between the school, businesses, and the community.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
The ROTC program is offered at Mayde Creek High School. Students that are from other campuses must obtain approval and are required to provide their own transportation.

The JROTC Career Cluster® prepares individuals to be good citizens and develop personal responsibility and a sense of accomplishment using a military framework.
COURSE INFORMATION

JROTC Naval Science I/PE Substitution
Katy ISD Course Number: 8780 (5105 PE)
Grades: 9-12
Credit: One per course

Naval Science I introduces the NJROTC program and includes Introduction to Leadership, Naval Ships, Mission and Organization, The Nation, Navy and the People in American Democracy, Maritime Geography, Sea Power and Challenge, Naval History through 1815, Introduction to Navigation and Time, Basic Seamanship, Health Education, First Aid and Drugs, and Alcohol and Tobacco Abuse Prevention.

NOTE: Available at MCHS only. Students from other campuses must obtain approval and are required to provide their own transportation.

JROTC - Naval Science II
Katy ISD Course Number: 8782
Grades: 9-12
Credit: One per course
Prerequisite: Naval Science I (8780)


NOTE: Available at MCHS only. Students from other campuses must obtain approval and are required to provide their own transportation.

JROTC - Naval Science III
Katy ISD Course Number: 8784
Grades: 9-12
Credit: One per course
Prerequisite: Naval Science II (8782)

Naval Science III focuses on leadership and discipline, Military Justice, Astronomy, International Law and the Sea, National Strategy, Sea Power and Naval Operations, Naval History: 1930 through the Nuclear Age, Meteorology and Weather, Naval Intelligence and National Security, Maneuvering Board, Challenges of Future Navy Research and Electricity and Naval Electronics.

NOTE: Available at MCHS only. Students from other campuses must obtain approval and are required to provide their own transportation.

JROTC - Naval Science IV
Katy ISD Course Number: 8786
Grades: 9-12
Credit: One per course
Prerequisite: Naval Science III (8784)

Naval Science IV provides instruction on theoretical and applied aspects of leadership, training, and evaluation of performance. Students learn motivational techniques, develop goals and activities for a work group, and proper ways to set a leadership example. Cadets practice these principles working with younger cadets in military drills and inspections, athletic events, and in other school activities.

NOTE: Available at MCHS only. Students from other campuses must obtain approval and are required to provide their own transportation.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
## COURSE INFORMATION

<table>
<thead>
<tr>
<th>COURSE NAME / CODE</th>
<th>PREREQUISITES</th>
<th>GRADE</th>
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</thead>
<tbody>
<tr>
<td>Medical Terminology (8079)</td>
<td>None</td>
<td>9-12</td>
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<td>Principles of Health Science (8093)</td>
<td>Biology</td>
<td>10-11</td>
<td>Heartsaver AED/ CPR</td>
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<td>Health Science Theory (8081)</td>
<td>Principles of Health Science (8081)</td>
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<td>Anatomy &amp; Physiology (0415)</td>
<td>Biology and Chemistry</td>
<td>11-12</td>
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<td>EMT Basic - Practicum in Health Science (8085V)</td>
<td>Principles of Health Science (8093) AND Health Science Theory (8081)</td>
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<td>• Basic Life Support (BLS) • EMT- Basic</td>
</tr>
<tr>
<td>Clinical Rotations - Practicum in Health Science (8082V)</td>
<td>Principles of Health Science (8093) AND Health Science Theory (8081)</td>
<td>12</td>
<td>• Basic Life Support (BLS) • Certified EKG Technician • Certified Patient Care Technician (CPCT)</td>
</tr>
</tbody>
</table>

The Healthcare Diagnostics program of study introduces students to occupations and educational opportunities related to performing complex medical laboratory tests for the diagnosis, treatment, and prevention of disease. This program of study may also include exploration into the opportunities associated with blood laboratories as well as radiologic technology, and ultrasonic technology.

The Health Science Career Cluster® focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, communicate effectively, and work well with others.

Successful completion of the Healthcare Diagnostics program of study will fulfill requirements of the Public Service Endorsement. **Approved Statewide Program of Study - September 2019**
Medical Terminology  
Katy ISD Course Number: 8079  
Grades: 9-12  
Credit: One  

Students develop an understanding of vocabulary necessary for careers within the medical field as they are introduced to the structure and meaning of medical terms and abbreviations for success in the healthcare field.

Principles of Health Science  
Katy ISD Course Number: 8093  
Grades: 10-11 (Priority given to 10th grade students in the Public Service Endorsement - Health Science Program of Study)  
Credit: One  
Prerequisite: Biology  

Principles of Health Science is designed to develop health care-specific knowledge and skills in effective communication, ethical and legal responsibilities, client care safety, first aid and CPR to prepare students for the transition to clinical or work-based health care experience. Students gain an overview of the therapeutic, diagnostic, health informatics, support service and biotechnology research and development systems of the health care industry.  

NOTE: Successful completion of this year long course satisfies the Health credit requirement.

Health Science Theory  
Katy ISD Course Number: 8081  
Grades: 11-12  
Credit: One  
Prerequisite: Principles of Health Science (8093)  

Students gain experience and develop knowledge and skills related to a variety of health careers. Students use critical thinking skills to reason, make decisions, solve problems and communicate effectively. Students should understand that quality health care depends on the ability to work well with others.

Anatomy & Physiology  
Katy ISD Course Number: 0415  
Grades: 11-12  
Credit: One  
Prerequisite: Biology and Chemistry  

Anatomy and Physiology is the study of human body systems for students who are interested in a career in health occupations. Through scientific inquiry students will explore anatomical structures and physiological systems and the interactions between them.  

NOTE: This course is an FHSPE third or fourth science credit option.

Clinical Rotations – Practicum in Health Science  
Katy ISD Course Number: 8082V  
Grades: 12  
Credit: Two  
Prerequisite: Principles of Health Science (8093) and Health Science Theory (8081)  

Requirement: Students must meet several requirements before school begins to maintain eligibility for this course. These requirements include, but are not limited to clear background check, negative drug screen, specific vaccinations and immunization records, health insurance, and proof of legal immigration status. Details will be provided to students accepted into the program at a mandatory orientation in the spring.  
Co-requisite: Concurrent enrollment in a core course at MCTC.

Clinical Rotations provide students with practical applications of previously learned knowledge and skills through classroom and clinical settings. Students may rotate through various departments of area hospitals, community health centers and medical offices while observing professional health care providers. Students are required to follow all immunization guidelines of the clinical rotation sites. Teachers collect fee for BLS card $6.00/year.

EMT Basic – Practicum in Health Science  
Katy ISD Course Number: 8085V  
Course Fee:  
Grades: 12  
Credit: Two  
Prerequisite: Principles of Health Science (8093) and Health Science Theory (8081)  

Requirements: Students must meet several requirements before school begins to maintain eligibility for this course. These requirements include, but are not limited to clear background check, negative drug screen, specific vaccinations and immunization records, health insurance, and proof of legal immigration status. Details will be provided to students accepted into the program at a mandatory orientation in the spring.  
Co-requisite: Concurrent enrollment in a core course at MCTC.

EMT Basic provides instruction in emergency medical care to persons with severe injuries or illness. Through lecture, hands-on skills practice and clinical experience the students are prepared to be tested in national mandated patient care skills and the EMS National Registry examination at the Emergency Medical Technician - Basic level. Students must be 17 years of age by September 1. Students may sit for the National Registry of Emergency Medical Technicians exam prior to the age of 18; however, they may not apply for certification in the state of Texas until age 18. Teachers collect fee for BLS card $6.00/year.
## COURSE INFORMATION

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<thead>
<tr>
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<td>Biology and Chemistry</td>
<td>11-12</td>
<td>N/A</td>
</tr>
</tbody>
</table>
| Dental Assisting - Practicum in Health Science (8092V) | Principles of Health Science (8093) AND Health Science Theory (8081) | 12      | • Basic Life Support (BLS)  
• Registered Dental Assistant  
• NOMAD X-Ray Certification |
| Pharmacology and Pharmacy Tech - Practicum in Health Science (8086V/8097V) | Principles of Health Science (8093) AND Health Science Theory (8081) | 12      | • Certified Pharmacy Technician  
• Sterile Compounding (SCAT) |

The Healthcare Therapeutic program of study introduces students to occupations and educational opportunities related to diagnosing and treating acute, episodic, or chronic illness independently or as part of a healthcare team. This program of study also includes an introduction to the opportunities associated with providing treatment and counsel to patients as well as rehabilitative programs that help build or restore daily living skills to persons with disabilities or developmental delays.

The Health Science Career Cluster® focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, communicate effectively, and work well with others.

Successful completion of the Healthcare Therapeutic program of study will fulfill requirements of the Public Service Endorsement. Approved Statewide Program of Study - September 2019
**COURSE DESCRIPTIONS**

**Principles of Health Science**  
Katy ISD Course Number: 8093  
Grades: 10-11 (Priority given to students in the Public Service Endorsement - Health Science Program of Study)  
Credit: One  
Prerequisite: Biology

Principles of Health Science is designed to develop health care-specific knowledge and skills in effective communication, ethical and legal responsibilities, client care safety, first aid and CPR to prepare students for the transition to clinical or work-based health care experience. Students gain an overview of the therapeutic, diagnostic, health informatics, support service and biotechnology research and development systems of the health care industry.

**NOTE:** Successful completion of this year long course satisfies the Health requirement.

**Medical Terminology**  
Katy ISD Course Number: 8079  
Grades: 9-12  
Credit: One

Students develop an understanding of vocabulary necessary for careers within the medical field as they are introduced to the structure and meaning of medical terms and abbreviations for success in the healthcare field.

**Health Science Theory**  
Katy ISD Course Number: 8081  
Grades: 11-12  
Credit: One  
Prerequisite: Principles of Health Science

Students gain experience and develop knowledge and skills related to a variety of health careers. Students use critical thinking skills to reason, make decisions, solve problems and communicate effectively. Students should understand that quality health care depends on the ability to work well with others.

**Anatomy & Physiology**  
Katy ISD Course Number: 0415  
Grades: 11-12  
Credit: One  
Prerequisite: Biology and Chemistry

Anatomy and Physiology is the study of human body systems for students who are interested in a career in health occupations. Through scientific inquiry students will explore anatomical structures and physiological systems and the interactions between them.

**NOTE:** This course is an FHSPE third or fourth science credit option.

**Dental Assisting – Practicum in Health Science**  
Katy ISD Course Number: 8092V  
Grades: 12  
Credit: Two  
Prerequisite: Principles of Health Science (8093) and Health Science Theory (8081)  
Co-requisite: Concurrent enrollment in a core course at MCTC.

Dental Assisting prepares students to support dental professionals with skills practice and clinical experiences. Students learn to sterilize instruments, the concept of four handed dentistry, process X-rays, and make impressions for dental fixtures. In addition to clinical duties, administrative tasks such as patient record keeping is incorporated. Through lecture, hands-on skills practice and clinical experience the students are prepared for the Registered Dental Assistant exam. Teachers collect fee for BLS card $6.00/year.

**Pharmacology/Pharmacy Tech – Practicum in Health Science**  
Katy ISD Course Number: 8097V/8086V  
Grades: 12  
Credit: Three  
Prerequisite: Chemistry, Principles of Health Science (8093), and Health Science Theory (8081)  
Requirement: Students must have a social security number to register as a Technician in training and must provide a specific clean drug test. Students must provide their own transportation.

These courses prepare students to support pharmacists by providing assistance during patient consultation, counter dispensing operations and prescription preparation, keeping records, and performing a wide range of duties for both retail and hospital based pharmacies. Included is an overview of the pharmacokinetics and pharmacodynamics of prescription and nonprescription medications, emphasizing drug classifications, drug action, drug administration, ethical and legal issues, and safety. Teachers collect fee for BLS card $6.00/year.

Students may become Registered Pharmacy Technicians after successfully passing the certification exam and completing the registration process through the Texas State Board of Pharmacy.

Students may earn Sterile Compounding and Aseptic Technique (SCAT) certification, necessary for hospital pharmacies.

Students participate in a non-paid internship at an approved pharmacy.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
The Culinary Arts program of study introduces students to occupations and educational opportunities related to the planning, directing, or coordinating activities of a food and beverage organization or department. This program of study also explores opportunities involved in directing and participating in the preparation and cooking of food.

The Hospitality and Tourism Career Cluster® focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services. Students acquire knowledge and skills focusing on communication, time management, and customer service that meet industry standards. Students will explore the history of the hospitality and tourism industry and examine characteristics needed for success.

Successful completion of the Culinary Arts program of study will fulfill requirements of the Business and Industry Endorsement.

Approved Statewide Program of Study - September 2019

<table>
<thead>
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<th>GRADE</th>
<th>CERTIFICATIONS</th>
</tr>
</thead>
</table>
| Culinary Arts (8371V) | None | 11-12 | • Food Handler Certification ServSafe ®  
| Practicum in Culinary Arts (8373V) | Culinary Arts (8371V) | 12 | • Manager Certification ServSafe ®  
| Career Prep I (8520/8524) | 2 Completed CTE Courses from same cluster | 11-12 | N/A |
Culinary Arts
Katy ISD Course Number: 8371V
Grades: 11-12
Credit: Two
Co-requisite: Concurrent enrollment in a core course at MCTC.

Occupationally specific instruction includes knife skills, industry-specific vocabulary, hands-on practice in all areas of food production specific to a restaurant and catering kitchen. Students will also focus on learning skills for restaurant management and service.

Practicum in Culinary Arts
Katy ISD Course Number: 8373V
Grades: 12
Credit: Two
Prerequisite: Culinary Arts (8371V)
Co-requisite: Concurrent enrollment in a core course at MCTC.

Practicum students are expected to produce more complex dishes appropriate for restaurant service at the on-site bistro and for competition. The Old Town Bistro is run by the students. It is open to the public and provides catering services.

Career Preparation I
Katy ISD Course Number: 8520/8524
Grades: 11-12
Credit: Two (one class period)
Prerequisite: 2 CTE Courses in the same cluster
(8520 - student is required to work 10 hours a week)
(8524 - student is required to work 15 hours a week)

Career Preparation provides work-based learning experiences that combine classroom instruction with the student’s paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations, and portfolio development. The Career Preparation program supports strong partnerships between the school, business, and the community.
The Lodging and Resort Management program of study introduces students to occupations and educational opportunities related to the logistical and operational management of lodging and resorts. This program of study also explores opportunities related to human resources, financial analysis, and marketing.

The Hospitality and Tourism Career Cluster® focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services. Students learn knowledge and skills focusing on communication, time management, and customer service that meet industry standards. Students will explore the history of the hospitality and tourism industry and examine characteristics needed for success.

Successful completion of the Lodging and Resort Management program of study will fulfill requirements of the Business and Industry Endorsement.

Approved Statewide Program of Study - September 2019
Hospitality Services
Katy ISD Course Number: 8363V
Grades: 11-12
Credit: Two
Co-requisite: Enrollment in a core course at MCTC

The knowledge and skills are acquired within this sequential, standards-based program that integrates hands-on and project-based instruction. Standards included in the Hospitality Services course are designed to prepare students for nationally recognized industry certifications, post-secondary education, and entry-level careers. In addition, Hospitality Services is designed so performance standards meet employer expectations, enhancing the employability of students. Instruction may be delivered through laboratory training or field experiences at local hotels.

Practicum in Hospitality Services
Katy ISD Course Number: 8366V
Grades: 12
Credit: Two
Prerequisite: Hospitality Services (8363V)
Co-requisite: Enrollment in a core course at MCTC
Requirement: Practicum students must provide their own transportation.

Students participate in an internship that combines classroom instruction with actual business and industry career experiences. Students are taught employability skills, including job-specific skills applicable to their training plan, job interview techniques, communication skills, financial and budget activities, human relations, and portfolio development. Practicum in Hospitality Services supports student attainment of academic and technical standards, and prepares students for college and career success.

Career Preparation I
Katy ISD Course Number: 8520/8524
Grades: 11-12
Credit: Two (one class period)
Prerequisite: 2 CTE Courses in the same cluster
(8520 - student is required to work 10 hours a week)
(8524 - student is required to work 15 hours a week)

Career Preparation provides work-based learning experiences that combine classroom instruction with the student’s paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations and portfolio development. The Career Preparation program supports strong partnerships between the school, business, and the community.
The Travel, Tourism, and Attractions program of study introduces students to occupations and educational opportunities related to the marketing or sales of travel and tourism services. This program of study allows students to learn how to plan, direct, and coordinate marketing or business policies and programs, including identifying potential customers and determining demand and promotional strategies for products and services.

The Hospitality and Tourism Career Cluster® focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services. Students learn knowledge and skills focusing on communication, time management, and customer service that meet industry standards. Students will explore the history of the hospitality and tourism industry and examine characteristics needed for success.

Successful completion of the Travel, Tourism, and Attractions program of study will fulfill requirements of the Business and Industry Endorsement.

<table>
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<tr>
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<td>Entrepreneurship (8632)</td>
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<tr>
<td>Sports and Entertainment Marketing (8633)</td>
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<td>Global Business (8530)</td>
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<tr>
<td>Sports and Entertainment Marketing II (8665)</td>
<td>Sports and Entertainment Marketing (8633)</td>
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<td>Career Preparation I (8520/8524)</td>
<td>2 Completed CTE Courses from same cluster</td>
<td>11-12</td>
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</table>
Entrepreneurship  
Katy ISD Course Number: 8632  
Grades: 10-12  
Credit: One  

Students learn principles necessary to begin and operate a business. The course’s primary focus is to help students understand the process of analyzing a business opportunity, preparing a business plan, determining feasibility of an idea using research, and developing a plan to organize and promote the business and its products and services. In addition, students understand capital required, return on investment desired, and potential for profit.

Sports and Entertainment Marketing  
Katy ISD Course Number: 8633  
Grades: 10-12  
Credit: One-half  

Students learn basic marketing, target marketing and segmentation, sponsorship, event marketing, promotions, sponsorship proposals, and implementation of sports and entertainment marketing plans. This course provides opportunities to develop promotional plans, sponsorship proposals, endorsement contracts, sports and entertainment marketing plans, and evaluation and management techniques.

Global Business  
Katy ISD Course Number: 8530  
Grades: 10-12  
Credit: One-half  

Students apply technical skills to develop a foundation in the economic, financial, technological, international, social, and ethical aspects of business to become competent consumers, employees, and entrepreneurs. Communication, technological, and reasoning skills are applied to the global business environment.

Sports and Entertaining Marketing II  
Katy ISD Course Number: 8665  
Grades: 10-12  
Credit: One-half  
Prerequisite: Sports and Entertainment Marketing (8633)  

Students build on prior knowledge of sports and entertainment marketing. This course focuses on the principles of management and planning supported by research, financial, economic, ethical and legal concepts. Students plan and execute an event, establish a sports, entertainment or recreation marketing product/business, and develop a career plan.

Career Preparation I  
Katy ISD Course Number: 8520/8524  
Grades: 11-12  
Credit: Two (one class period)  
Prerequisite: 2 CTE Courses in the same cluster  

(8520 - student is required to work 10 hours a week)  
(8524 - student is required to work 15 hours a week)  

Career Preparation provides work-based learning experiences that combine classroom instruction with the student’s paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations, and portfolio development. The Career Preparation program supports strong partnerships between the school, business, and the community.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Proposed Indicator: Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
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<tr>
<td>Cosmetology I (8744V)</td>
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<td>Cosmetology Design and Color Theory (8751V)</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cosmetology II (8752V)</td>
<td>Cosmetology I (8744V)</td>
<td>12</td>
<td>500 Hours towards Cosmetology Operators License - TDLR</td>
</tr>
</tbody>
</table>

The Texas Department of Licensing Regulation (TDLR) will grant eligibility to take the licensing exam to students who have completed high school graduation requirements, clocked 1000 hours prior to graduation, and successfully completed both Cosmetology I and Cosmetology II. This program meets all requirements for a Cosmetology license, issued by TDLR after students pass both the written and practical portions of the exam, show proof of required TDLR documentation and proof of a high school diploma.
Cosmetology I
Katy ISD Course Number: 8744V
Course Fee: $250.00
Grades: 11-12
Credit: Two

Students will develop knowledge and skills regarding various cosmetology design elements such as form, lines, texture, structure and illusion or depth as they relate to the art of cosmetology. Instruction includes sterilization and sanitation procedures, hair care, nail care, and skin care and meets the Texas Department of Licensing and Regulation (TDLR) requirements for licensure upon passing the state examination, following completion of clock hours in Cosmetology II. Analysis of career opportunities, license requirements, knowledge and skills expectations, and development of workplace skills are included. Students are expected to accrue 500 hours in Cosmetology I to be on track to accumulate the 1,000 hours required by the end of Cosmetology II. This will be available outside of the regular school day to practice skills and accumulate hours.

Introduction to Cosmetology
Katy ISD Course Number: 8743V
Grades: 11-12
Credit: One
NOTE: Taken concurrently with Cosmetology I

Students explore careers in the cosmetology industry. To prepare for success, students must have academic and technical knowledge and skills relative to the industry. Students may begin to earn hours toward state licensing requirements.

Cosmetology II
Katy ISD Course Number: 8752V
Grades: 12
Credit: Two
Prerequisite: Cosmetology I (8744V)

Cosmetology II prepares students for the licensing exam and mastery of skills learned the previous year working with both manikins and clients. The content is designed to provide the occupational skills required for licensure. Instruction includes advanced training in professional standards/employability skills, Texas Department of Licensing and Regulation (TDLR) rules and regulations, use of tools, equipment, technologies and materials, and practical skills. The Texas Department of Licensing Regulation (TDLR) will grant eligibility to take the licensing exam to students who have completed all program requirements. Students are expected to clock 500 hours in Cosmetology II (for a total of 1,000 hours).

Cosmetology Design and Color Theory
Katy ISD Course Number: 8751V
Grades: 12
Credit: One
NOTE: Taken concurrently with Cosmetology II

Students will develop knowledge and skills regarding various cosmetology design elements such as form, lines, texture, structure, and illusion or depth as they relate to the art of cosmetology. Instruction includes sterilization and sanitation procedures, hair care, nail care, and skin care and meets the TDLR requirements for licensure upon passing the state examination. Analysis of career opportunities, license requirements, knowledge and skills expectations, and development of workplace skills are included.
# Family & Consumer Science Program of Study

## Courses

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Prerequisites</th>
<th>Grade</th>
<th>Certifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Human Services (8353) <strong>$15/yr course fee + student project cost</strong></td>
<td>None</td>
<td>8-10</td>
<td>N/A</td>
</tr>
<tr>
<td>Professional Communications (1520)</td>
<td>None</td>
<td>9-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Interpersonal Studies (8330)</td>
<td>None</td>
<td>10-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Dollars and Sense (8354)</td>
<td>None</td>
<td>10-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Lifetime Nutrition and Wellness (8311) <strong>$20/sem course fee</strong></td>
<td>None</td>
<td>10-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Human Growth and Development (8995)</td>
<td>None</td>
<td>10-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Child Development (8341)</td>
<td>None</td>
<td>10-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Career Preparation I (8520/8524)</td>
<td>2 Completed CTE Courses from same cluster</td>
<td>11-12</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*The Family and Community Services program of study introduces students to knowledge and skills related to social services, including child and human development and consumer sciences. CTE concentrators may learn about or practice managing social and community services or teaching family and consumer sciences. Students may follow career paths in social work or therapy for children, families, or school communities.*

*The Human Services Career Cluster® focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.*

Successful completion of the Family and Community Services program of study will fulfill requirements of the Public Service Endorsement. Approved Statewide Program of Study - September 2019
**Principles of Human Services**  
**Katy ISD Course Number:** 8353  
**Grades:** 8–10  
**Credit:** One  
**Course Fee:** $15.00/year + student project cost

Students investigate human services careers, including counseling and mental health, early childhood development, family and community, and personal care services. The course addresses a broad range of skills related to personal development and management, promotion of strong families and preparation for adult roles. Other studies address nutrition and dietary practices; food selection and preparation; budgeting and consumer-buying practices, and management of family housing needs.

---

**Professional Communications**  
**Katy ISD Course Number:** 1520  
**Grades:** 9-12  
**Credit:** One-half

Professional Communications blends written, oral, and graphic communication in a career-based environment. Careers in the global economy require individuals to be creative and have a strong background in computer and technology applications, a strong and solid academic foundation, and a proficiency in professional oral and written communication.

---

**Interpersonal Studies**  
**Katy ISD Course Number:** 8330  
**Grades:** 10-12  
**Credit:** One-half

This course examines how interpersonal and family relationships significantly affect the quality of life. Students investigate family studies and human development to enhance personal development, foster quality relationships, promote family wellness, manage multiple adult roles, and pursue careers related to counseling and mental health services.

---

**Dollars and Sense**  
**Katy ISD Course Number:** 8354  
**Grades:** 10-12  
**Credit:** One-half

Students are introduced to concepts related to managing individual and family resources, including finances, food, clothing, shelter, health care, recreation, and transportation. This course focuses on consumer practices and responsibilities, the money management process, decision-making skills, impact of technology, and preparation for human services careers.

---

**Lifetime Nutrition & Wellness**  
**Katy ISD Course Number:** 8311  
**Grades:** 10-12  
**Credit:** One-half  
**Course Fee:** $20.00/semester

This laboratory course investigates the role of nutrients in the body, principles of digestion and metabolism, nutritionally balanced diets and food safety and sanitation. Students learn about careers related to hospitality and tourism, education and training, human services and health sciences.

---

**Human Growth and Development**  
**Katy ISD Course Number:** 8995  
**Grades:** 10-12  
**Credit:** One

This course provides the background knowledge of human development for students to enter into Instructional Practices in Education and continue in the Education and Training pathway. Students examine development and theories from prenatal care through late adulthood.

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**Child Development**  
**Katy ISD Course Number:** 8341  
**Grades:** 10-12  
**Credit:** One

This course promotes knowledge and skills related to prenatal through school-age growth and development of children with a focus on health and well-being. Students investigate childcare and education careers.

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**Career Prep I**  
**Katy ISD Course Number:** 8520/8524  
**Grades:** 11-12  
**Credit:** Two (one class period)  
**Prerequisite:** 2 CTE Courses in the same cluster  
(8520 - student is required to work 10 hours a week)  
(8524 - student is required to work 15 hours a week)

Career Preparation provides work-based learning experiences that combine classroom instruction with the student’s paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations, and portfolio development. The Career Preparation program supports strong partnerships between the school, business, and the community.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
The Networking Systems program of study explores the occupations and educational opportunities associated with designing and implementing computer and information networks, such as local area networks (LAN), wide area networks (WAN), intranets, extranets, and other data communications networks. This program of study may also include exploration into analyzing science, engineering, and other data processing problems to implement and improve computer systems.

The Information Technology (IT) Career Cluster® focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

**COURSE INFORMATION**

<table>
<thead>
<tr>
<th>COURSE NAME</th>
<th>PREREQUISITES</th>
<th>GRADE</th>
<th>CERTIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Information Technology (J8644)</td>
<td>None</td>
<td>8</td>
<td>N/A</td>
</tr>
<tr>
<td>Computer Science I (2000)</td>
<td>Algebra I</td>
<td>9-11</td>
<td>N/A</td>
</tr>
<tr>
<td>Computer Maintenance Cisco Academy (8664V)</td>
<td>None</td>
<td>11-12</td>
<td>CompTIA A+</td>
</tr>
<tr>
<td>AP Computer Science Principles (2006)</td>
<td>Algebra I</td>
<td>9-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Cisco Network Engineering I/Lab (8655V/8675V)</td>
<td>Algebra II or concurrent enrollment in Algebra II</td>
<td>11-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Cisco Network Engineering II/Lab (8656V/8676V)</td>
<td>Cisco Network Engineering I/Lab (8655V/8675V)</td>
<td>12</td>
<td>Cisco Certified Network Associate (CCNA)</td>
</tr>
</tbody>
</table>

Successful completion of the Networking Systems program of study will fulfill requirements of a Business and Industry Endorsement.

Approved Statewide Program of Study - September 2019
Principles of Information Technology
Katy ISD Course Number: J8644
Grades: 8
Credit: One

Students will develop computer literacy skills to adapt to emerging technologies used in the global marketplace. Students will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. Students will enhance reading, writing, computing, communication, and reasoning skills and apply them to the information technology environment.

Computer Science I
Katy ISD Course Number: 2000
Grades: 9-11
Credit: One
Prerequisite: Algebra I

This foundation course for computer programming emphasizes programming methodology and problem solving using packaged software and graphics. Students learn to code animation and games in various computer languages.

AP Computer Science Principles
Katy ISD Course Number: 2006
Grades: 9-12
Credit: One
Prerequisite: Algebra I

Students are introduced to the foundations of computer science with a focus on how computing powers the world. Students will learn to analyze data, create technology that has a practical impact, and gain a broader understanding of how computer science impacts people and society.

Computer Maintenance Cisco Academy
Katy ISD Course Number: 8664V
Grades: 11-12
Credit: Two
Co-requisite: Concurrent enrollment in a core course at MCTC.

Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot issues using system tools and diagnostic software. Topics include Microsoft Windows 10 and Linux operating systems, laptop repair and mobile devices, networking concepts, cloud computing, virtualization, printers, security, and advanced troubleshooting.

Cisco Network Engineering I/Lab
Katy ISD Course Number: (8655V/8675V)
Grade: 11-12
Credit: Two
Prerequisite: Algebra II or concurrent enrollment in Algebra II
Co-requisite: Concurrent enrollment in a core course at MCTC.

This course focuses on advanced network engineering concepts used to support large scale enterprise networks that are commonly found in the industry today. It is designed to prepare students to sit for Cisco’s CCNA certification exam. The CCNA exam is a highly sought after job certification exam and a credential that many companies are seeking. It certifies that an individual has the professional knowledge and skills needed to support a Cisco network.
The Information Technology (IT) Career Cluster® focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

Successful completion of the Cybersecurity program of study will fulfill requirements of a Business and Industry Endorsement. Approved Statewide Program of Study - September 2019.

The Cybersecurity program of study includes the occupations and educational opportunities related to planning, implementing, upgrading, or monitoring security measures for the protection of computer networks and information. This program of study may also include exploration into responding to computer security breaches and virus and administering network security measures.
**Principles of Information Technology**  
Katy ISD Course Number: J8644  
Grades: 8  
Credit: One

Students will develop computer literacy skills to adapt to emerging technologies used in the global marketplace. Students will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. Students will enhance reading, writing, computing, communication, and reasoning skills and apply them to the information technology environment.

**Computer Maintenance Cisco Academy**  
Katy ISD Course Number: 8664V  
Grade: 11-12  
Credits: Two  
Co-requisite: Concurrent enrollment in a core course at MCTC.

Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot issues using system tools and diagnostic software. Topics include Microsoft Windows 10 and Linux operating systems, laptop repair and mobile devices, networking concepts, cloud computing, virtualization, printers, security and advanced troubleshooting.

**Cisco Network Engineering I/Lab**  
Katy ISD Course Number: 8655V/8675V  
Grade: 11-12  
Credits: Two  
Prerequisite: Algebra II or concurrent enrollment in Algebra II  
Co-requisite: Concurrent enrollment in a core course at MCTC.

Students learn the basics of computer networking with a focus on network architecture, function, theory, and design. Students will build networks using enterprise level Cisco equipment and learn hands on job skills, including basic network configuration and troubleshooting. By the end of the course, students will be able to design and build LANs, configure enterprise routers and switches, implement IP addressing schemes, along with many other skills. It is assumed incoming students have little to no background knowledge in networking.

**Cyber Security I/II**  
Katy ISD Course Number: 8648V/8649V  
Grades: 12  
Credit: Two  
Prerequisite: Cisco Computer Maintenance Academy (8664V)  
Co-requisite: Concurrent enrollment in a core course at MCTC.

Develop a foundational understanding of cybersecurity and how it relates to information and network security. Students are introduced to characteristics of cybercrime, security principles and framework, technologies, and procedures to defend networks. Through interactive, multimedia content, lab activities, and multi-industry case studies, students build technical and professional skills to pursue careers in Cybersecurity.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
The Law Enforcement program of study teaches students about the development of, adherence to, and protection of various branches of law. Students may learn how to appropriately and legally respond to breaches in the law according to statutory rules and regulations as well as investigate how and why the breaches occurred.

The Law and Public Service Career Cluster® focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services. Students will examine the roles and responsibilities of police, courts, corrections, private security, and protective agencies of fire and emergency services.

Successful completion of the Law Enforcement, Investigations, Security, and Corrections program of study will fulfill requirements of the Public Service Endorsement.

Approved Statewide Program of Study - September 2019
Forensic Science  
Katy ISD Course Number: 0413  
Grades: 11-12  
Credit: One  
Prerequisite: Recommended Biology and Chemistry

This course uses a structured and scientific approach to the investigation of crimes of assault, abuse and neglect, domestic violence, accidental death, homicide, and the psychology of criminal behavior. Students learn terminology and investigative procedures related to crime scene, questioning, interviewing, criminal behavior characteristics, truth detection, and scientific procedures used to solve crimes. Using scientific methods, students collect and analyze evidence through case studies and simulated crime scenes. Students will learn the history, legal aspects, and career options for forensic science.

Law Enforcement II and Criminal Investigations  
Katy ISD Course Number: 8976V & 8984V  
Grade: 12  
Credit: One (each)  
Prerequisite: Law Enforcement I & Court Systems (8970V & 8972V)  
Co-requisite: Concurrent enrollment in a core course at MCTC.

Law Enforcement II introduces the student to American crime in a historical perspective, social policy affecting crime, impact and crime trends, social characteristics of specific crimes, prevention of crime, and theories related to the causes of crime.

Criminal Investigation introduces students to the basic functions of criminal investigations and procedures and how to follow up. Students will learn terminology procedures related to criminal investigation, crime scene processing, evidence collection, fingerprinting, and courtroom presentation. Through case studies and simulated crime scenes, students will collect and analyze evidence such as fingerprint analysis, bodily fluids, hairs, fibers, shoe and tire impressions, bite marks, drugs, tool marks, firearms and ammunition, blood spatter, digital evidence, and other types of evidence.

Law Enforcement I and Court Systems and Practices  
Katy ISD Course Number: 8970V & 8972V  
Grades: 11-12  
Credit: One (each)  
Co-requisite: Concurrent enrollment in a core course at MCTC.

Law Enforcement I is a study of the history and philosophy of criminal justice and its ethical considerations, crime is defined, its nature and impact are explored. This course includes an overview of the criminal justice system, law enforcement and the court systems, a study of prosecution and defense, trial processes, corrections, and penal systems.

Court Systems & Practices is a study of the judiciary in the criminal justice system, structure of the American court system, prosecution, right to counsel, pretrial release, grand juries, adjudication processes, types and rules of evidence, and sentencing. Students will participate in mock trials.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
### COURSE INFORMATION

<table>
<thead>
<tr>
<th>COURSE NAME</th>
<th>PREREQUISITES</th>
<th>GRADE</th>
<th>CERTIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Manufacturing (8043)</td>
<td>None</td>
<td>8-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Principles of Applied Engineering (8616)</td>
<td>Algebra I</td>
<td>8-11</td>
<td>N/A</td>
</tr>
<tr>
<td>Engineering Design &amp; Presentation (8602)</td>
<td>Principles of Applied Engineering (8616)</td>
<td>9-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Manufacturing Engineering Technology I/II (8057V/8058V)</td>
<td>OR Principles of Manufacturing (8043) AND Algebra II (or concurrently enrolled in Algebra II)</td>
<td>11-12</td>
<td>AutoCAD - Autodesk Certified User (ACU) Inventor - Autodesk Certified User (ACU)</td>
</tr>
<tr>
<td>Practicum in Manufacturing (8059V)</td>
<td>Manufacturing Engineering Technology I/II (8057V/8058V)</td>
<td>12</td>
<td>Fanuc Tool, Handling Cert, Fanuc Vision Cert, Fanuc CNC Cert, Fanuc Robot Operator 1</td>
</tr>
</tbody>
</table>

The Advanced Manufacturing and Machinery Mechanics program of study focuses on the assembly, operation, maintenance, and repair of electromechanical equipment or devices. Students may work in a variety of mechanical fields, gaining knowledge and experience in robotics, refinery and pipeline systems, deep ocean exploration, or hazardous waste removal. CTE concentrators may work in a variety of fields of engineering.

The Manufacturing Career Cluster® focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

Successful completion of the Advanced Manufacturing and Machinery Mechanics program of study will fulfill requirements of the Business and Industry Endorsement. Approved Statewide Program of Study - September 2019
Principles of Manufacturing  
Katy ISD Course Number: 8043  
Grades: 8-12  
Credit: One  
Course Fee: Student project cost

This course is a hands-on study of manufacturing technology. Students reinforce, apply, and transfer academic knowledge and skills to a variety of activities, problems, and settings as students develop skills in the application, design, production, and assessment of products, services and systems, and how these skills are applied to manufacturing.

Principles of Applied Engineering  
Katy ISD Course Number: 8616  
Grades: 8-11  
Credit: One  
Pre- or Co-requisite: Algebra I

Students use a variety of computer hardware and Autodesk applications to complete assignments and projects to gain an understanding of the interrelationships between various fields of science, technology, engineering and mathematics.

Engineering Design & Presentation  
Katy ISD Course Number: 8602  
Grades: 9-12  
Credit: One  
Prerequisite: Principles of Applied Engineering (8616) and Algebra I

Engineering Design is a hands-on, project based course that engages students’ knowledge and skills of the process of design as it applies to engineering fields, using multiple software applications and tools necessary to produce and present working drawings, solid model renderings, and prototypes. Students become adept with college and industry Autodesk software to design and document solutions for course projects.

Manufacturing Engineering Technology I/II  
Katy ISD Course Number: 8057V/8058V  
Grades: 11-12  
Credit: One (each, two in total)  
Prerequisite: Principles of Applied Engineering (8616) OR Principles of Manufacturing (8043), AND Algebra II (or concurrent enrollment in Algebra II)  
Co-requisite: Concurrent enrollment in a core course at MCTC.

Students learn theory and application, including analysis, research, design and development of systems, processes, machines, tools, and equipment in manufacturing. Students gain knowledge and understanding of hydraulics, pneumatics, mechanical fabrication, AC/DC systems, and apply those learned processes to a simulated manufacturing environment. Students are introduced to how computer aided design (CAD), computer numerical controls (CNC), and robotic technologies are utilized in manufacturing.

NOTE: Manufacturing Engineering II is an FHSPE third math credit option. Students who have earned credit for another course identified as an FHSPE third math credit option may take this course for an elective credit.

Practicum in Manufacturing Engineering  
Katy ISD Course Number: 8059V  
Grades: 12  
Credit: Two  
Prerequisite: Manufacturing Engineering I & II  
Co-requisite: Concurrent enrollment in a core course at MCTC.

The practicum is a capstone experience to give students a practical application of mechatronics, computer numerical controls (CNC), robotics technologies, and manufacturing processes. Students will focus on applying previously studied manufacturing knowledge and skills to real world and simulated manufacturing environmental issues.
The Manufacturing Technology program of study focuses on the development and use of automatic and computer-controlled machines, tools, and robots that perform work on metal or plastic. Students will learn how to set up and operate a variety of machine tools to produce precision parts and instruments. Students will also learn how to modify parts to make or repair machine tools or maintain individual machines, and how to use hand-welding or flame-cutting equipment.

The Manufacturing Career Cluster® focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

Successful completion of the Manufacturing Technology program of study will fulfill requirements of the Business and Industry Endorsement.

Approved Statewide Program of Study - September 2019
Principles of Manufacturing  
Katy ISD Course Number: 8043  
Grades: 8–12  
Credit: One  
Course Fee: Student project cost  

This course is a hands-on study of manufacturing technology. Students reinforce, apply, and transfer academic knowledge and skills to a variety of activities, problems, and settings as students develop skills in the application, design, production, and assessment of products, services and systems, and how these skills are applied to manufacturing.

Principles of Applied Engineering  
Katy ISD Course Number: 8616  
Grades: 8-10  
Credit: One  
Pre- or Co-requisite: Algebra I

Students use a variety of computer hardware and Autodesk applications to complete assignments and projects to gain an understanding of the interrelationships between various fields of science, technology, engineering, and mathematics.

Diversified Manufacturing I  
Katy ISD Course Number: 8040  
Grades: 10–12  
Credit: One  
Prerequisite: Algebra I; Geometry recommended  
Course Fee: Student project cost  

Students compare various processes and applications as they apply to manufacturing. In differentiating these processes, the student will identify raw materials and how they impact the construction of a product or design.

NOTE: Available at KHS only

Diversified Manufacturing II  
Katy ISD Course Number: 8047  
Grades: 11–12  
Credit: One  
Course Fee: Student project cost  
Prerequisite: Diversified Manufacturing I (8040)

Students compare various processes and applications as they apply to manufacturing. In differentiating these processes, the student will identify raw materials and how they impact the construction of a product or design.

NOTE: Available at KHS only
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
The Engineering program of study focuses on the design, development, and use of engines, machines, and structures. Students will learn how to apply science, mathematical methods, and empirical evidence to the innovation, design, construction, operation, and maintenance of different manufacturing systems.

The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster® focuses on planning, managing, and providing scientific research and professional and technical services, including laboratory and testing services, and research and development services.

Successful completion of the Engineering program of study will fulfill requirements of the Business and Industry or STEM Endorsement.

Approved Statewide Program of Study - September 2019
Principles of Applied Engineering  
Katy ISD Course Number: 8616  
Grades: 8-11  
Credit: One  
Pre- or Co-requisite: Algebra I  

Students use a variety of computer hardware and Autodesk applications to complete assignments and projects to gain an understanding of the interrelationships between various fields of science, technology, engineering, and mathematics.

Engineering Design and Presentation  
Katy ISD Course Number: 8602  
Grades: 9-12  
Credit: One  
Prerequisite: Principles of Applied Engineering (8616) and Algebra I  

Engineering Design is a hands-on, project based course that engages students' knowledge and skills of the process of design as it applies to engineering fields, using multiple software applications and tools necessary to produce and present working drawings, solid model renderings, and prototypes. Students become adept with college and industry Autodesk software to design and document solutions for course projects.

Engineering Science  
Katy ISD Course Number: 8615  
Grades: 10-12  
Credit: One  
Prerequisite: Engineering Design and Presentation (8602), Algebra I, and Biology, Chemistry, IPC or Physics  

Students use activities and projects in learning how engineers and technicians use math, science, and technology in an engineering problem-solving process in their professions. This course explores a variety of engineering and technology careers, investigating various technology systems, and manufacturing processes.

Engineering Design and Problem Solving  
Katy ISD Course Number: 8654  
Grades: 11-12  
Credit: One  
Prerequisite: (2) Science, Technology, Engineering, and Mathematics courses.  

This research based course is for students to use the creative process of problem solving by identifying real-world needs and then devise solutions. The solution may be a product, technique, structure, or process depending on the problem. The engineering design process would be used in the solution process with an awareness on social and ethical implications.

Practicum of STEM  
Katy ISD Course Number: 8660V  
Grades: 12  
Credit: Two  
Prerequisite: Engineering Science (8615)  
Co-requisite: Enrollment in a core course at MCTC.  

This project-based course is designed for students to apply STEM concepts and principles in a classroom and workplace environment. Students will focus on planning, managing, and providing scientific research and professional standards and services, as required by business and industry. Students use software in project development and design, and may have the opportunity to participate in field experience.
## COURSE INFORMATION

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<thead>
<tr>
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<th>PREREQUISITES</th>
<th>GRADE</th>
<th>CERTIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science I (2000)</td>
<td>Algebra I</td>
<td>9-12</td>
<td>N/A</td>
</tr>
<tr>
<td>AP Computer Science Principles (2006)</td>
<td>Algebra I</td>
<td>9-12</td>
<td>N/A</td>
</tr>
<tr>
<td>AP Computer Science A (2008/0271)</td>
<td>Algebra II or Geometry KAP</td>
<td>9-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Computer Science - Mobile Applications (2025)</td>
<td>Algebra I &amp; Computer Science I (2000)</td>
<td>10-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Computer Science III - Data Structures KAP (2010)</td>
<td>AP Computer Science A (2008/2071)</td>
<td>10-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Computer Science - Independent Study KAP (2013)</td>
<td>CS III - Data Structures KAP (2010)</td>
<td>10-12</td>
<td>N/A</td>
</tr>
<tr>
<td>Career Prep I (8520/8524)</td>
<td>2 CTE courses from same CTE career cluster</td>
<td>11-12</td>
<td>N/A</td>
</tr>
</tbody>
</table>

The programming and Software Development program of study explores the occupations and education opportunities associated with researching, designing, developing, and testing operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computer applications. This program of study may also include exploration into creating, modifying, and testing the codes, forms, and script that allow computer applications to run.

The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster focuses on planning, managing, and providing, scientific research and professional and technical services, including laboratory and testing services, and research and development services.

Successful completion of the Programming and Software Development program of study will fulfill requirements of STEM Endorsement.

Approved Statewide Program of Study - September 2019
Computer Science I
Katy ISD Course Number: 2000
Grades: 9-12
Credit: One
Prerequisite: Algebra I

This foundation course for computer programming emphasizes programming methodology and problem solving using packaged software and graphics. Students learn to code animation and games in various computer languages.

Advanced Placement Computer Science Katy ISD Course Number: 2006
Grades: 9-12
Credit: One
Prerequisite: Algebra I

Students are introduced to the foundations of computer science with a focus on how computing powers the world. Students will learn to analyze data, create technology that has a practical impact, and gain a broader understanding of how computer science impacts people and society.

AP Computer Science A
Katy ISD Course Number: 2008/0271*
Grades: 9-12
Credit: Two
Pre-/Co-requisite: Algebra II or Geometry KAP

Successful completion of this course awards one advanced math credit and one language other than English credit. AP Computer Science A emphasizes programming methodology, procedural abstraction, in-depth study of algorithms, data structures and data abstractions and is taught in Java. Students enrolled in an AP course are expected to take the corresponding Advanced Placement exam.

NOTE: The advanced math credit will be awarded with the student’s earned, numeric grade and corresponding grade points. The language other than English credit will be awarded with the student’s earned, numeric grade but no grade points are calculated in the GPA.

Computer Science III - Data Structures KAP Katy ISD Course Catalog: 2010
Credit: One
Prerequisite: AP Computer Science A (2008/0271*)

Using advanced problem solving skills and computer science topics, this course provides a stronger foundation for students interested in technology-related careers, including business and engineering.

Computer Science - Independent Study KAP
Katy ISD Course Number: 2013
Credit: One
Prerequisite: CS III Data Structures KAP (2010)

This course extends the understanding of what was learned in AP Computer Science A of programming through study of various contemporary programming techniques.

Computer Science - Mobile Applications
Katy ISD Course Number: 2025
Grades: 10-12
Credit: One
Prerequisite: Algebra I; Computer Science I (2000)

Students gain an understanding of the principles of mobile application development through the study of development platforms, programming languages, and software design standards. The student will design, implement and deliver meaningful projects using mobile computing devices. Students collaborate with one another, their instructor, and various electronic communities to solve problems. Data analysis and software development concepts are used to access, analyze, and evaluate information needed to program mobile devices. Students select the technology appropriate for the task, create solutions, and evaluate the results while practicing digital citizenship.

Career Preparation I
Katy ISD Course Number: 8520 or 8524
Grades: 11-12
Credit: Two
Prerequisite: 2 CTE Courses in the same cluster (8520 - Student is required to work 10 hours/week) (8524 - Student is required to work 15 hours/week)

Career Preparation provides work-based learning experiences that combine classroom instruction with the student’s paid employment experience to develop a variety of employability and job-specific skills, including interviewing techniques, communication skills, financial and budget activities, human relations, and portfolio development. The Career Preparation program supports strong partnerships between the school, businesses, and the community.

NOTE: These courses and the job placement must span the entire school year. Students must provide their own transportation.
Students completing two or more courses for two or more credits within a program of study earn concentrator status.

Students finishing three or more courses for four or more credits with one course from level 3 or 4 within a program of study earn completer status.
The Automotive program of study teaches students how to repair and refinish automobiles and service various types of vehicles. Students may learn to collect payment for services or supplies and perform typical vehicle maintenance procedures such as lubrication, oil changes, installation of antifreeze, or replacement of accessories like wiper blades or tires.

The Transportation, Distribution, and Logistics Career Cluster® focuses on careers in planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water. It also includes related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

Successful completion of the Automotive program of study will fulfill requirements of the Business and Industry Endorsement. Approved Statewide Program of Study - September 2019
Auto Tech I - Maintenance & Light Repair  
Katy ISD Course Number: 8700V  
Grades: 11-12  
Credit: Two  
Course Fee: See fee schedule  
Co-requisite: Concurrent enrollment in a core course at MCTC.

Students enrolled in Auto Tech receive training in the proper use of various tools, equipment, and information systems currently used in the automobile repair industry, along with training in service and repair of all of the major vehicle systems.

Auto Tech II – Automotive Service  
Katy ISD Course Number: 8710V  
Grades: 12  
Credit: Two  
Prerequisite: Auto Tech I (8700V)  
Co-requisite: Concurrent enrollment in a core course at MCTC.

Auto Tech II includes advanced level training in the service and repair of all the major vehicle systems. Students will be required to furnish work style clothing, footwear, and safety glasses that meet program standards.
It is the policy of Katy ISD not to discriminate on the basis of sex, disability, race, religion, color, gender, age, or national origin in its educational programs and/or activities including career and technical programs, nor in its employment practices.