

# MEMORANDUM

November 6, 2012

TO: Board Members

FROM: Terry B. Grier, Ed.D.  
Superintendent of Schools

SUBJECT: **CAREER AND TECHNICAL EDUCATION EVALUATION REPORT**

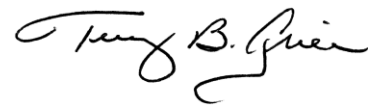
CONTACT: Carla Stevens, (713) 556-6700

Attached is the 2011–2012 evaluation report on the Career and Technical Education (CTE) program implemented in the district. This report assesses the program participation and academic performance of CTE participants from the past two years, 2010–2012, as compared to non-CTE students. This report also includes a summary of the course offerings and program components implemented in the CTE program. Approximately, 165 different CTE courses were offered at 67 schools (29 high schools and 38 middle schools) throughout the district in 2011–2012.

From spring 2011 through spring 2012, CTE 2 and CTE 3 students outperformed non-CTE students in English language arts (ELA), mathematics, science, and social studies on the Texas Assessment of Knowledge and Skills (TAKS). The higher performance by CTE students supports the belief that involvement in the CTE program can be academically-beneficial for students.

The CTE program aligns with HISD's strategic direction, which focuses on the core initiative: Rigorous Instructional Standards and Supports. Currently, the CTE program offers rigorous academic and technical curricula, career counseling, business partnerships, as well as out-of-classroom learning experiences for students. The CTE program must continue to commit to a variety of programming and opportunities for students to develop their career knowledge and skills.

Should you have any further questions, please contact my office or Carla Stevens in Research and Accountability at (713) 556-6700.

  
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TBG

TBG/CS:kt

cc: Superintendent's Direct Reports  
Chief Schools Officers  
Nancy Gregory  
Alan Summers  
Michael Love



# RESEARCH

Educational Program Report

## CAREER AND TECHNICAL EDUCATION PROGRAM SUMMARY AND STUDENT PERFORMANCE OUTCOMES, 2011-2012

DEPARTMENT OF RESEARCH AND ACCOUNTABILITY  
HOUSTON INDEPENDENT SCHOOL DISTRICT



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# CAREER AND TECHNICAL EDUCATION PROGRAM SUMMARY AND STUDENT PERFORMANCE OUTCOMES, 2011–2012

## Executive Summary

### Program Description

The Career and Technical Education program (CTE) in the Houston Independent School District (HISD) has a mission to equip students with the marketable academic and technical skills needed to compete in the global workforce and/or to continue their education at the post-secondary level after graduation. Consequently, the goals of the CTE program are: (1) to provide students with relevant and up-to-date instruction within their career pathway(s) of interest, (2) to offer an advanced curriculum that can lead to industry certifications, (3) to expose students to out-of-classroom and real-world work experiences, and (4) to implement professional development that focuses on best practices in career and technical education. By enrolling in CTE courses and participating in CTE program components, students are empowered to strengthen the economic and social foundation of the local community and beyond. The purpose of this evaluation report is to present:

- demographic characteristics of CTE participants;
- CTE program components and course offerings;
- and the test performance of CTE students in comparison to their non-CTE school peers.

### Highlights

- Students in grades six through twelve are eligible to take CTE courses. Over the past two years, HISD student enrollment in grades six through twelve has decreased from 87,826 students in 2010–2011 to 87,244 in 2011–2012. However, the CTE program experienced an increase in enrollment over the two-year period, starting with 31,898 students in 2010–2011 to 32,955 students in 2011–2012.
- From 2010–2011 to 2011–2012, the number of students enrolled in CTE 1 courses as electives slightly increased by 3.7 percent to 16,842 in 2011–2012. CTE 1 enrollment figures include students in grades six through twelve. During the same time period, the numbers of CTE 2 students decreased 10.4 percent to 12,283 in 2011–2012. The number of CTE students coded in the Tech Prep program dramatically increased 97.1 percent to 3,830 in 2011–2012. CTE 2 and CTE 3 enrollment numbers include students in grades nine through twelve.
- CTE program components included course offerings, certifications/licenses, career and technical student organizations, college credit for CTE students, career preparation, internships, job shadowing, and Tech Prep.
- One hundred and sixty-five different CTE courses were offered at 67 schools (29 high schools and 38 middle schools) throughout the district. These courses cover career concentrations identified by the Texas Education Agency. The most popular career concentrations in the district

for 2011–2012 were (1) Business Management and Administration, (2) Information Technology, and (3) Health Science.

- From spring 2011 through spring 2012, CTE 2 and CTE 3 students outperformed non-CTE students in English language arts (ELA), mathematics, science, and social studies on the Texas Assessment of Knowledge and Skills (TAKS).
- Specifically, in 2012, the percentage of CTE 3 students passing the TAKS math test was six percentage points higher than the passing rate of non-CTE students (85 percent vs. 79 percent), while the percentage of CTE 2 students who passed the TAKS math test was four percentage points higher than non-CTE students (83 percent vs. 79 percent).
- The total number of CTE graduates increased from 3,615 graduates in the spring of 2010 to 3,984 graduates in the spring of 2011. For spring 2010 and spring 2011, 40 percent of all HISD graduates were CTE students (coded 2 or coded 3).

## Recommendations

1. Continue to provide program offerings and components across the career concentrations so that CTE program students can select interests from a variety of career pathways and participate in multiple career development experiences. The amount of diverse programming available for students encourages career exploration and helps students to develop an awareness of their future career options.

## Administrative Response

The College and Career Readiness Department has reviewed the *2011–2012 Career and Technical Education (CTE) Program Summary and Student Performance Outcomes* report. The report describes and evaluates the performance of students involved with CTE on Texas Assessments of Knowledge and Skills (TAKS), graduation rates, and certifications. We are pleased to see that CTE students outperformed non-CTE students on TAKS. In addition, graduation rates and the range of certifications available to students are at an all-time high. The department has begun major reviews of the CTE programs across the district with a goal of increasing enrollment in CTE programs and work-based learning opportunities for students.

# Introduction

## Background

The Career and Technical Education program (CTE) in the Houston Independent School District (HISD) has a mission to equip students with the marketable academic and technical skills needed to compete in the global workforce and/or to continue their education at the post-secondary level after graduation. The CTE department collaborates with principals, instructional leaders, and industry professionals to design, implement, and assess core and career program offerings. To ensure continuous student achievement, basic and advanced academics as well as technical skills are integrated into the curriculum to enhance the attainment of competent proficiencies and standards. The CTE program provides students with real work opportunities exposing them to the demands of the workforce. These opportunities are made available by collaborations between HISD, local businesses, and professional organizations.

The CTE program in HISD offers a variety of career education courses that prepare students for entry into institutions of higher learning or the workforce. These courses are taught by certified CTE instructors. Sixth-grade through twelfth-grade students can enroll in elective courses that match their career interests. Students who select CTE courses as general electives are coded as CTE 1 participants.

High school students can develop a career concentration and take multiple CTE courses that correspond with their interests. Students who select a coherent sequence of courses are coded as CTE 2 participants and those with an interest in technical fields can enroll in the Tech Prep program (coded as CTE 3 participants). The development of a career pathway concentration that is planned from a strong coherent sequence of courses allows students the opportunity to identify career options that lead to transferable skills and knowledge. The Texas Education Agency (TEA) has identified the following career concentrations:

- Agriculture, Food and Natural Resources;
- Architecture and Construction;
- Audio/Visual (A/V) Technology and Communications;
- Business, Management and Administration;
- Education and Training;
- Finance;
- Government and Public Administration;
- Health Science;
- Hospitality and Tourism;
- Human Services;
- Information Technology;
- Public Safety, Corrections, and Security;
- Manufacturing;
- Marketing, Sales, and Service;
- Science, Technology, Engineering, and Mathematics; and
- Transportation, Distribution and Logistics.

In an effort to address the developing needs of the future workforce, the Texas Education Agency (TEA) and the Texas Higher Education Coordinating Board (THECB) have revised a plan of action, the Texas State Plan for Career and Technical Education, 2008–2013. The CTE State Plan outlines a

renewed vision for career and technical education programs where there is clear understanding that academic education and technical education are not in conflict with one another; instead, academic concepts are reinforced and utilized in technical education applications (CTE State Plan, 2007). HISD's CTE program's philosophy clearly emphasizes that a rigorous academic foundation contributes to success in school and in life; that all students should be provided equal access to opportunities that will help them succeed; and that career and technical education should complement and enhance academic preparation by enabling students to apply learned principles to a variety of family, community, and career situations.

The HISD CTE program has adopted the state plan to provide academic excellence as defined by the federal *No Child Left Behind* law. This includes the provision of quality career and guidance counseling; partnerships that benefit students and schools; rigorous academic and technical curricula supporting seamless career pathways; professional development for educators to enhance teaching and learning; ongoing data evaluation of student performance; and administrative leadership for program effectiveness and compliance.

## Methods

### Data Collection

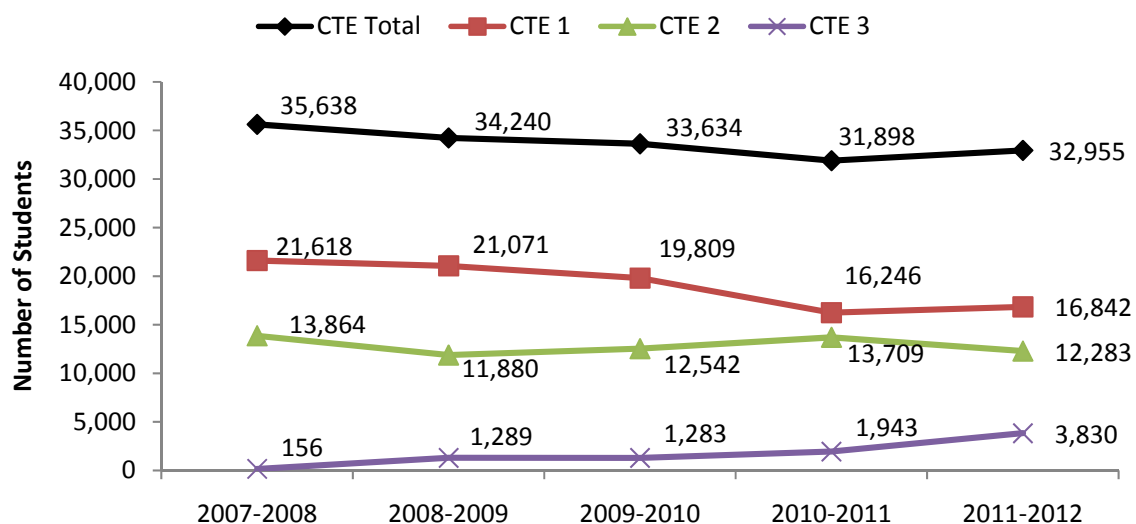
- Descriptive data, including student demographics and longitudinal enrollment figures in the CTE program, were obtained from the Public Education Information Management System (PEIMS). Within the program, students were assigned a CTE code that indicated their level of enrollment in CTE courses. Students who took one or more CTE course as electives were coded 1; students enrolled in CTE courses as part of a coherent sequential plan of study were assigned a code of 2; and students enrolled in CTE courses as part of a state approved Tech Prep plan of study received a code of 3. Enrollment numbers were collected based on total CTE participation as well as by code participation. Certification data were obtained from CTE personnel, while the Career and Technical Education website (HISD, 2010) provided details about the program and curriculum.
- Quantitative analysis was accomplished using results from the Texas Assessment of Knowledge and Skills (TAKS) database. TAKS is a criterion-referenced test, vertically aligned with the Texas Essential Knowledge and Skills (TEKS) curriculum. The English language version measures academic achievement in English language arts (ELA), mathematics, social studies, and science. The spring 2011 and spring 2012 TAKS test results are presented in this report because current 10<sup>th</sup> and 11<sup>th</sup> grade students who participated in CTE sequence programs (coded CTE 2 and CTE 3) will graduate under TAKS requirements.
- One data limitation of this report is that it does not include the State of Texas Assessments of Academic Readiness (STAAR) end-of-course (EOC) assessments results. During the spring of 2012, HISD administered the STAAR EOC assessments for the first-time to high school students. However, CTE 2 and CTE 3 students, who were 10<sup>th</sup> and 11<sup>th</sup> graders, were not given the option to take the STAAR EOC assessments because they remain under TAKS graduation requirements. Future reports will include STAAR EOC assessment results.

## Results

### What were the demographic characteristics of students enrolled in the CTE program over the past two years, 2010–2012?

- The HISD enrollment numbers and CTE student enrollment by program code are shown in **Table 1** (see page 16). These codes are based on students in grades six through twelve eligible to participate in the CTE program. Over the past two years, HISD student enrollment in grades six through twelve has slightly decreased from 87,826 students in 2010–2011 to 87,244 in 2011–2012. However, the total number of students taking CTE courses over the two-year period increased by 3.3 percent, from 31,898 students in 2010–2011 to 32,955 students in 2011–2012.
- Specifically, the number of students enrolled in CTE 1 courses as elective-takers increased from 16,246 in 2010–2011 to 16,842 in 2011–2012. However, the numbers of CTE 2 students decreased from 13,709 in 2010–2011 to 12,283 in 2011–2012. The number of CTE students coded in the Tech Prep program (code = 3) increased by 97 percent, from 1,943 students in 2010–2011 to 3,830 students in 2011–2012. This increase was a result of a concentrated effort by CTE administrators and teachers to engage more students in the Tech Program during the end of the 2010–2011 school year.
- **Figure 1** presents the five-year (2007–2008 through 2011–2012) CTE enrollment data. In general, the number of students taking any CTE courses decreased from 35,638 in 2007–2008 to 32,955 in 2011–2012. Specifically, the number of students taking CTE courses as general electives (CTE 1) and as a coherent sequence (CTE 2) has decreased over the five-year period by 22 percent and 11 percent, respectively. In contrast, the number of students enrolling in CTE 3 Tech Prep program substantially increased from 156 students in 2007–2008 to 3,830 in 2011–2012, an increase of over 2,000 percent.

**Figure 1. Trends in CTE Enrollment, 2007–2008 Through 2011–2012**



- The percentage of economically-disadvantaged students within the district for grades six through twelve remained the same from 2010–2011 to 2011–2012 (75.1 percent). The percentage of economically-disadvantaged students enrolled in CTE courses also remained relatively the same during this two-year period (75.3 percent vs. 75.4 percent). From 2010–2012, the district's percentage of special education students decreased from 10.6 percent to 10.0 percent; while the percentage of students enrolled in CTE courses who received special education services also slightly decreased from 9.3 percent to 9.0 percent (**Table 2**, page 17).
- The demographic characteristics of CTE students reflect the district's 6-12<sup>th</sup> grade enrollment within  $\pm$  2.0 percentage points for most characteristics. The CTE program serves a larger percentage of at-risk students by 5.9 percentage points, and underserves limited English proficient students by 4.7 percentage points.

### What were the CTE program components and course offerings implemented in HISD in 2011–2012?

The HISD CTE program consists of several components and course offerings that give HISD students opportunities to explore career options and gain preparation for the world of work and post-secondary education. The CTE program components ensure that all CTE students develop career awareness within their selected course of study, as well as exposure to professional experiences in order to enhance their mastery, confidence, and leadership skills.

In addition to the program components, the CTE department offers a variety of programs from which students can select a career pathway of study. Career pathways provide a plan for all students, regardless of their abilities, talents, or desired levels of education. Career concentration pathways provide all students with areas of focus, along with flexibility, and a variety of ideas to pursue as they make decisions regarding course selection. By taking CTE courses, students are given opportunities to participate in hands-on training within their career pathway of interest. The CTE program components include the following (listed alphabetically):

#### *Career and Technology Student Organizations (CTSO)*

CTE students are encouraged to join student organizations that are directly related to their selected career pathway. These organizations offer students opportunities to develop leadership and teamwork skills that help prepare them for the work force and/or for college training. HISD has developed several partnerships with local, regional, and national professional organizations so that the school-level student organizations can fully participate in activities and benefit from their professional memberships. Some of these organizations include the Business Professionals of America (BPA), Future Business Leaders of America (FBLA), Family, Career and Community Leaders of America (FCCLA), Health Occupations Students of America (HOSA), SkillsUSA, and the Technology Student Association (TSA).

#### *Career Preparation, Internships, and Job Shadowing*

Within CTE, students gain valuable insight and hands-on career experiences through internships and job shadowing. Students are placed in work-based settings in order to acquire knowledge and skills within real work environments. HISD has developed partnerships with various organizations and companies that provide students with on-the-job training experiences. For example, CTE students served as interns at Texas Children's Hospital and Methodist Hospital throughout the school year. Several students attending the High School for Law Enforcement and Criminal Justice had job shadowing experiences at the Houston Emergency Center.

### *Certifications/Licenses*

Students within the CTE program have the opportunity to earn industry certifications and/or licenses within their chosen career pathways. Industry certifications serve as evidence of technical skill attainment. Earning industry certifications give students a sense of accomplishment, a highly-valued professional credential, and help them become more employable and eligible for higher starting salaries. There are over 90 professional certificates or licenses that are approved by TEA in which CTE high school students can earn. These certifications/licenses are connected to multiple industry careers such as beauticians, automotive mechanics, and several business-related fields.

### *College Credit for CTE Students*

There are three different kinds of courses that CTE students can take in order to earn college credit; dual credit courses, advanced technical credit courses, or Tech Prep courses. Students within these courses are taught and graded in the same manner as college students who would take the course. Credits from these courses count toward the Distinguished Achievement Program (DAP) graduation plan, when students earn a grade of “B” or better. All courses are open to eleventh and twelfth-grade students and are provided at no charge.

Dual credit courses are the only courses that allow students to earn both high school and college credit hours simultaneously. They are developed and taught by college-approved instructors. No prerequisite classes are required to enroll in these courses. Advanced technical credit (ATC) courses are developed at the state level, while Tech Prep credit courses are developed within HISD. Both types of courses are taught by local high-school teachers who received specialized training. College credit for ATC and Tech Prep courses are awarded once students enroll in a participating college or university. The ATC program provides an opportunity for students to receive credit at participating community colleges across Texas for taking certain enhanced technical courses during high school. ATC courses are only offered in technical or workforce areas. The teacher of the course must meet the ATC teacher requirements, go through ATC training, and teach the high school course so that it meets the content of the equivalent college course.

### *Tech Prep*

The Tech Prep program provides a way for students to start their technical careers in high school and complete their training in a local community college. The six-year program is a combination of four years of high school courses, outlined in the Recommended graduation plan, and two years in a technical training program at a participating community college. The program prepares students for high-demand technical careers. At the end of the program, Tech Prep students can earn an Associate of Applied Science degree.

### **Course Offerings**

- Approximately, 175 different CTE courses are offered at 67 HISD schools (29 high schools and 38 middle schools) throughout the district. These courses range from accounting to welding and are related to the career concentrations identified by TEA (listed on page 3). A partial listing of the CTE courses being offered in the district can be found in **Appendix A**. For the 2011–2012 school year, the enrollment numbers of CTE 2 and CTE 3 students by high schools and career concentration are provided in **Appendix B**. The CTE program provides a variety of courses for students to select elective classes and/or courses within career concentrations. The most popular career concentrations in the district for 2011–2012 were (1) Business Management and Administration, (2) Information Technology, and (3) Health Science.

A full description of all CTE classes and the school locations, where each class is available, can be found in the curriculum section at the Career and Technical Education website. These courses are taken as electives or as part of a selected career concentration. The CTE specialized career programs include the following listed alphabetically and described below.

### *Agricultural Science and Technology*

The Agricultural Science and Technology (AST) program has developed as an integral part of the CTE department in HISD. The mission of the program is to prepare students for careers, build awareness, and develop leadership for the food, fiber, and natural resource systems. Diverse course offerings make it attractive to students with varying educational goals. The AST program operates at eight high schools. These locations are Austin; Bellaire; Chavez; Lamar; Madison; Sam Houston Math, Science, and Technology Center; Worthing; and Yates. In addition, Harper Alternative School provides horticulture courses for students with disabilities. The AST program owns six farms. The farms are located near participating schools and vary in size: Madison has 35 acres, Austin and Yates share 62 acres, Bellaire, Lamar, and Lee have a total of 40 acres, and Sam Houston has 9 acres. The co-curricular activities for the AST program include membership in the student organization, Future Farmers of America (FFA), and participation in the Houston Livestock Show.

### *Automotive Youth Educational Systems (AYES)*

Within the AYES program, HISD students are taught entry-level skills in the field of automotive technology. Students take courses in a coherent sequence to increase their levels of expertise in automotive technology. The program is a collaborative initiative between HISD and automotive industry partners such as local automotive dealerships and independently-owned repair shops. These automotive partners provide job-shadowing opportunities and apprenticeships to HISD students to gain real-world, on-the-job experiences in the AYES program. The AYES program is available at Westbury High School and Waltrip HS. These schools have automotive labs that are certified by the National Automotive Technology Education Foundation (NATEF) and hold Automotive Service Excellence (ASE) certifications.

### *Business, Management, and Administration*

The Business, Management, and Administration career concentration is divided into six pathways, including management, business financial management and accounting, human resources, business analysis, marketing, administration, and information support. Within these pathways, students learn about planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations. The courses help students develop the skills and knowledge to conduct business in the workplace and/or pursue education in business fields. Courses in business, management, and administration are offered at all HISD high schools.

### *Construction Careers*

Students interested in careers in the construction industry have several school choices within HISD. The Construction, Art, Science and Technology (CAST) Academy is offered at Furr HS. This program is supported by the Association of General Contractors (AGC) to assist with the development of the construction workforce in the Greater Houston area. There are also Construction Academies located at Austin and Yates high schools. Construction trade education helps students develop manipulative skills, safety, judgment, technical knowledge, and related occupational information. Construction courses are designed to train students through contextual instruction in the layout, design, production and processing, assembling, testing, diagnosing and maintaining industrial, commercial and residential goods and services. Students are also provided opportunities to develop and apply leadership, social, civic and business-related skills through their involvement in the Vocational and Industrial Clubs of American

(VICA), which is the student organization for young people enrolled in the Trade and Industrial programs. Basic Safety, Introduction to Construction Math, Introduction to Hand Tools, Introduction to Power Tools, Introduction to Blueprints, Basic Communications Skills, and Basic Employability Skills are among course offerings. The Houston Community College System partners with HISD to support students within the construction programs.

### *Culinary Arts Programs*

Culinary arts programs are available at Barbara Jordan, Davis, Wheatley, and Westside high schools and Harper Alternative School. The programs are designed to prepare students for career opportunities in the food service and hospitality industries. Culinary arts students train in specific culinary areas of interest, work toward receiving post-secondary credit, and enter the Chef Apprenticeship program, affiliated with the American Culinary Federation (ACF).

At Jefferson Davis High School, a hotel and restaurant management magnet program is offered along with a culinary arts component. At Davis, students interested in the tourism and hospitality industry, learn a variety of business management and culinary arts skills. Twelfth-grade students can participate in an internship program at the University of Houston. At Westbury, culinary arts students take courses related to the entrepreneurship side of culinary arts as well as food preparation lessons. HISD partnered with the Texas Restaurant Association. As a result, Westside has a fully operational Outback Restaurant.

### *DeBakey's College Preparatory School*

The DeBakey's College Preparatory School, a component of the Health Sciences Department of CTE, allows students to take four years of sequenced health science classes. All health science teachers at the DeBakey High School for Health Professions are CTE certified in order to teach the courses. The Health Science Curriculum consists of the following courses by grade level: Introduction to Health Science for ninth graders; Anatomy and Physiology for tenth graders; Health Science Rotations: Dental Science, Medical Laboratory, and Patient Care for eleventh graders; and Health Science III- Hospital Internships, Advanced Anatomy and Physiology, Rehabilitation Rotations and Business Computer Information Systems for twelfth graders. Junior and senior students intern at the Texas Medical Center to complete rotation components. At the end of four years, students are awarded a Health Science Certificate. DeBakey's College Preparatory School allows students to receive a well-rounded CTE foundation in the health sciences curriculum along with core academic classes.

### *Energy Industry Programs*

There are three energy academies in HISD. These academies offer courses in which CTE students can develop their interests in careers related to the energy industry. These academies are located at Milby High School (Milby Academy for Petroleum Exploration & Production Technology), Lamar High School (Lamar Global Energy Business Program), and Westside High School (Westside Engineering & Geosciences Academy). The energy academies are financially supported by the Independent Petroleum Association of America (IPAA) to assist with developing an energy workforce in Houston.

### *The High School for Law Enforcement & Criminal Justice (HSLECJ)*

The H.S. LE/CJ, a separate and unique magnet school, began in the spring of 1981 as a recruitment source for minority police officers. Currently, the curriculum is designed to allow students to explore careers related to law enforcement and criminal justice. Entry requirements include an 80 average in academic subjects, passing scores on standardized tests, and good conduct grades.

At the High School for Law Enforcement & Criminal Justice, students take vocational classes at each grade level to expose them to the skills and experience necessary for law enforcement and legal-related criminal justice careers. The law-legal programs are involved in law activities with professional

organizations outside of the school. By the twelfth grade, students can participate in a variety of work assignments related to their career choices.

#### *Jack Yates School of Communications*

Since 1978, the Jack Yates School of Communications has established a standard for excellence in the field of media communications. Located, on the campus of Jack Yates High School, the innovative “school-within-a-school” focuses on three specialized areas: Media Technology, Photography, and Journalism. Jack Yates is the only HISD high school to house separate television and photography studios. The journalism department provides interns for the Houston Chronicle and the “Eye On Third Ward” initiative with the Museum of Fine Arts. The Yates School has also formed a strong alliance with Texas Southern University and the University of Houston to further teach youth through photography/media and to use the depth of information for positive change as producers and consumers.

#### *Pre-Engineering Programs - Project Lead the Way (PLTW)*

For students interested in engineering, biomechanics, aeronautics, and other applied math and science arenas, PLTW is a special series of courses developed for the middle school and high school years. These courses complement math and science college preparatory programs to establish a solid background in engineering and technology. This program is sponsored by the East End Chamber of Commerce, which represents several petroleum and Houston port-related industries. The PLTW courses are available at six campuses: César Chávez, Ebbert Furr, Westbury, Phillis Wheatley, Sam Houston, and James Madison high schools.

#### *Reagan Computer Technology Magnet Program*

The Reagan High School Program for Computer Technology offers students instruction through the Academy of Finance. The Academy of Finance is a four-year program that prepares students for the banking and finance industry, advanced preparation in a junior college program, or enrollment in a full baccalaureate program. It is a comprehensive program of study designed to assist students in developing knowledge of the increasing role of technology in the world of finance. The Computer Electronics and Networking Technology program is a four-year program leading to proficiency as an A+ certified computer technician or a CISCO certified networking technician. Four years of math and science are presented as well as basic electronics, solid-state devices and circuits, microprocessor theory and interfacing, and computer maintenance and repair techniques. The Cisco Systems Networking Academy teaches the principles and practice of building and maintaining networks and prepares students for the certified CISCO Networking Associated exam. The students gain experiences on the latest microcomputer equipment with access to networks and the internet.

#### *Westbury High School Health Science Program*

The Health Science Career Cluster encompasses more than 200 career specialties and/or occupations. The Health Science program at Westbury High School focuses on careers in planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development. The students at Westbury perform their clinical rotation duties at the Memorial-Hermann Hospital and the People's Clinic.

### What were the certifications/licenses earned by students enrolled in the CTE program in 2011–2012?

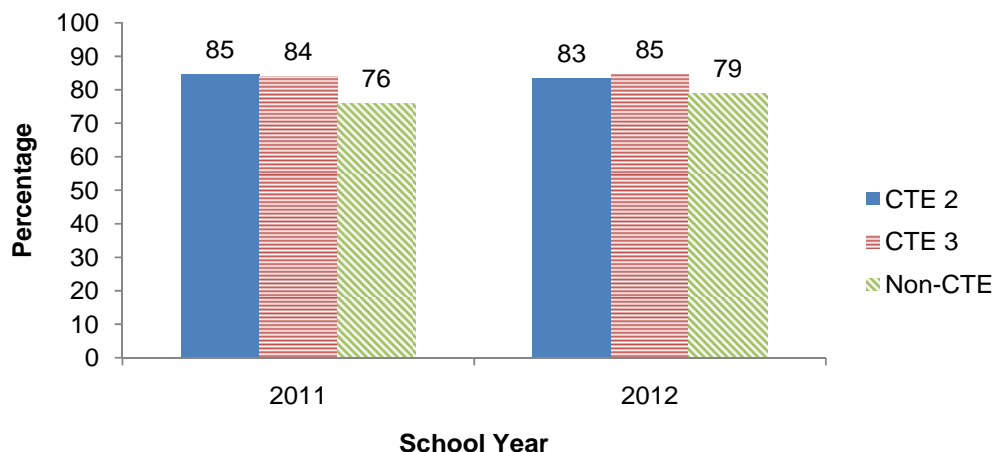
- A total of 7,170 certifications and/or licenses were earned in 49 different specialization areas (see **Table 3**, page 18). The largest number of certifications was earned in the area of financial literacy, with 1,806 students earning the EverFi Certification. CTE students are also provided opportunities to take the Office Proficiency Assessment and Certification (OPAC) tests. The OPAC on-line exams measure a student's mastery in various office skills such as keyboarding, word processing programs, and clerical tasks. CTE students passed a total of 9,240 OPAC tests (see **Table 4**, page 19).

### What were the trends in TAKS performance of students enrolled in the CTE program compared to HISD students over the past two school years, 2010–2011 and 2011–2012?

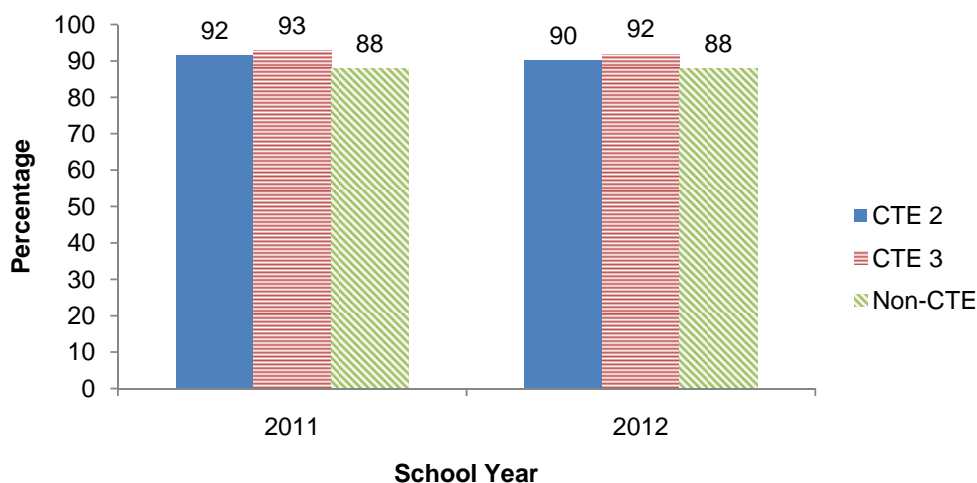
HISD students in grades six through twelve can take CTE courses as electives, however, only students in high school (grades 9–12) can enroll in CTE 2 (coherent sequences) and CTE 3 (Tech Prep). The following TAKS results are for CTE 2, CTE 3, and non-CTE students in grades 10 and 11. Future reporting will include STAAR assessment results of CTE 2 and CTE 3 students in grades 9 through 12.

- The percent of CTE 2 and CTE 3 students passing the math TAKS was higher than the percent passing for non-CTE students from 2011 to 2012 (see **Figure 2**). Although the percentage passing rates remained lower for non-CTE students compared to those of CTE 2 and CTE 3 students, non-CTE students TAKS math passing rates increased from 76 percent to 79 percent from 2011 to 2012. During the same time period, CTE 2 student performance decreased by two percentage points and CTE 3 students increased by one percentage point.
- For the spring of 2012, CTE 3 students had the highest percentage of students passing the TAKS English Language Arts (ELA) test, with 92 percent meeting the passing standard. Ninety percent of CTE 2 students met the passing standard of the 2012 TAKS ELA test, while 88 percent of non-CTE students met the ELA passing standard during the spring of 2012. The same trend was also found in spring 2011 (see **Figure 3**, page 12).

**Figure 2. English TAKS math performance for CTE 2 and CTE 3 students compared to non-CTE students, 2011–2012.**



**Figure 3. English TAKS English Language Arts (ELA) performance for CTE 2 and CTE 3 students compared to non-CTE students, 2009–2011.**



- A slightly larger percentage of CTE 3 students (86 percent) met the passing standard on the science test of the TAKS than the CTE 2 (84 percent) and non-CTE students (80 percent) in the spring of 2012. For 2011, the passing percentages were 84 percent for CTE 2 students, 86 percent for CTE 3 students, and 75 percent for non-CTE students. From 2011 to 2012, the passing percentages increased by five percentage points for non-CTE students on the TAKS science test, while CTE 2 and CTE 3 student passing rates remained relatively the same (**Table 5**, page 20).
- Regarding the 2011 and the 2012 TAKS social studies performance, the percent of students meeting the passing standard increased from the previous year for all student groups, with CTE 2 and CTE 3 students outperforming the non-CTE students (**Table 5**, page 20).

#### What were the graduation rates for students enrolled in the CTE program compared to HISD students over the past two years, 2009–2010 to 2010–2011?

The graduation counts for twelfth-grade students coded as CTE 2 (coherent sequence) and CTE 3 (Tech Prep) from the 2009–2010 to the 2010–2011 school years are presented in **Figure 4** (see page 13). Graduation rates are available for the previous school year and prior years, therefore, 2011–2012 graduation rates will be available during the 2012–2013 school year. Students who took CTE courses as general electives and coded as CTE 1 are not included.

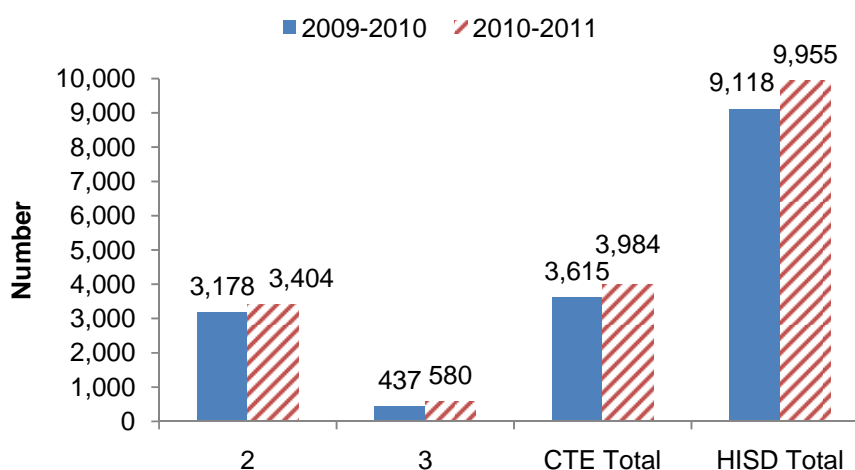
- The total number of CTE graduates increased over the two-year period, from 3,615 graduates in the spring of 2010 to 3,984 graduates in the spring of 2011 (10.2 percent). From spring 2010 to spring 2011, the number of HISD graduates increased from 9,118 to 9,955, which was 9.2 percent increase. For spring 2011, 40 percent of all HISD graduates were CTE students (coded 2 or coded 3).

- The number of CTE 2 graduates increased by 7.1 percent, from 3,178 in the spring of 2010 to 3,404 in the spring of 2011. During the same time period, the number of CTE 3 graduates also increased from 437 to 580 (32.7 percent).

Twelfth-grade students earn one of three diploma distinctions based on the level and quantity of credits acquired during high school. These three diploma types are Regular/Minimum, Recommended, and Distinguished Achievement. Students receiving special education services who complete their Individualized Education Plan at the end of their four years in high school also receive a diploma.

- In the spring of 2010, the largest percentage of CTE 2 graduates (83.4 percent) and CTE 3 graduates (89.9 percent) earned the Recommended diploma distinction. These percentages were very comparable with the district, which 80.3 percent of graduates earned the Recommended diploma distinction. This trend remained the same in the spring 2011. Although the percentages of CTE 2 and CTE 3 graduates earning the Recommended diploma distinction decreased from spring 2010, the majority of CTE 2 graduates (77.9 percent) and CTE 3 graduates (83.6 percent) earned the Recommended diploma distinction (**Table 6**, page 20).

**Figure 4. Number of graduates by CTE code, CTE total, and HISD totals, spring 2010 and spring 2011**



## Discussion

The HISD CTE program offers career concentration courses and career pathways in which students are equipped with the academic and technical skills necessary to enter the workforce and/or continue their education at the post-secondary level after graduation. Exposure to a variety of CTE programs and courses allows students to explore their career options and gain mastery of career-related subject matter. Within their selected career concentrations, many CTE students are able to earn certifications and/or licenses as evidence of their mastery. Participation in CTE student organizations fosters the development of leadership and other needed skills to succeed in post-secondary training and in the workforce.

In general, CTE tenth and eleventh grade students in a coherent sequence of courses (CTE 2) and Tech Prep (CTE 3) were found to outperform their non-CTE counterparts on the 2011 and 2012 TAKS ELA, mathematics, science, and social studies tests. The higher performance by CTE students supports

the belief that involvement in the CTE program can be academically-beneficial for students (Castellano, Sundell, Overman, and Aliaga, 2012). The report also noted the total number of CTE graduates increased by 10.2 percent from 2010–2011 to 2011–2012 while the number of district graduates increased by 9.2 percent. Approximately, 40 percent of all HISD graduates were CTE students.

The CTE program aligns with HISD’s strategic direction, which focuses on the core initiative: Rigorous Instructional Standards and Supports. Currently, the CTE program offers rigorous academic and technical curricula, career counseling, business partnerships, as well as out-of-classroom learning experiences for students. The CTE program must continue to commit to a variety of programming and opportunities for students to develop their career knowledge and skills.

## References

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- Houston Independent School District. (2010). Career and Technical Education Program. Retrieved from <http://www.houstonisd.org/portal/site/CareerTech>.
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**Table 1. Student Enrollment by CTE Codes, 2010–2011 through 2011–2012**

	<b>2010–2011</b>	<b>2011–2012</b>
<b>Total HISD Student Enrollment (6<sup>th</sup>-12<sup>th</sup>)</b>	87,826	87,244
<b>Number of CTE Students Coded 1</b>	16,246	16,842
<b>Number of CTE Students Coded 2</b>	13,709	12,283
<b>Number of CTE Students Coded 3</b>	1,943	3,830
<b>Total Number of CTE Students</b>	31,898	32,955

Note: Data retrieved from TEA PEIMS, Oct. 2010 – Oct. 2011.

**Table 2. District and CTE (Codes 1, 2, and 3) Course Enrollment by Student Groups<sup>†</sup>, 2010–2011 and 2011–2012**

Subgroup	Academic Year			
	2010–2011		2011–2012	
	N	%	N	%
<b>Total HISD Student Enrollment (6<sup>th</sup>-12<sup>th</sup>)</b>	87,826	100.00	87,244	100.00
Gender				
Female	43,064	49.0	42,771	49.0
Male	44,762	51.0	44,473	51.0
Ethnicity				
American Indian	241	<1.0	240	<1.0
Asian	2,861	3.3	3,028	3.5
African-American	25,005	28.5	23,504	26.9
Hispanic	51,569	58.7	51,886	59.5
White	7,413	8.4	7,836	9.0
Two or More <sup>†</sup>	558	<1.0	613	<1.0
Economically Disadvantaged	65,973	75.1	65,502	75.1
At Risk	54,519	62.1	50,631	58.0
Special Education	9,282	10.6	8,770	10.0
Limited English Proficiency	12,665	14.4	11,390	13.1
Gifted & Talented (G/T)	12,757	14.5	13,523	15.5
<b>Total CTE Student Enrollment</b>	31,898	100.0	32,955	100.0
Gender				
Female	15,801	49.5	16,157	49.0
Male	16,097	50.5	16,798	51.0
Ethnicity				
American Indian	101	<1.0	108	<1.0
Asian	864	2.7	981	3.0
African-American	9,945	31.2	9,592	29.1
Hispanic	18,414	57.7	19,898	60.4
White	2,299	7.2	2,140	6.5
Two or More <sup>†</sup>	174	<1.0	169	<1.0
Economically Disadvantaged	24,027	75.3	24,839	75.4
At Risk	21,206	66.5	21,049	63.9
Special Education	2,971	9.3	2,955	9.0
Limited English Proficiency	2,591	8.1	2,762	8.4
Gifted & Talented (G/T)	4,036	12.7	4,347	13.4

Note: Data retrieved from TEA PEIMS, October 2010 – October 2011.

<sup>†</sup> District enrollment numbers reflect only students in grades 6 through 12, grades where students are eligible to enroll in CTE courses.

<sup>††</sup> Two or More Ethnicity Classification added to PEIMS in October 2010.

**Table 3. Certifications /Licenses Earned by CTE 2 and CTE 3 Students, 2011–2012**

<b>Certification</b>	<b>N</b>	<b>Certification</b>	<b>N</b>
A*S*K* Fundamental Marketing Concepts	2	NATEF Electrical/Electronic Systems (A6)	17
A+ Certification	5	NATEF Engine Performance (A8)	14
ACA (Photoshop)	67	NATEF Heating and Air Condition (A7)	17
ASE Brakes (A5)	12	NATEF Suspension and Steering (A4)	44
ASE Certified Oil Change Mechanic	237	NCCER CORE Introductory Craft Skills	53
ASE Refrigerant Recovery & Recycling	14	NCCER Plumbing - Level 1	14
ASPA Certified Screen Printer	19	Operator Certification	3
Autodesk Certified User AutoCAD	11	OSHA Ten Hour Safety Certification	1,642
Autodesk Certified User- Autodesk Inventor	23	Pet First Aid and CPR (America Red Cross)	4
Automated External Defibrillator	238	Plumbing Assessment	1
Basic Telecommunication	41	Private Pilot: Airplane	1
CareerSafe Online Safety Awareness	5	ServSafe© Certification	67
Certified Customer Service Specialist	11	Shampoo-Conditioning Specialty Certificate	82
Cisco Certified Network Associate (CCNA)	0	Teen Community Emergency Response Team	96
Cosmetology Assessment	3		
Cosmetology Operators License	2		
CPR Lay Responder Adult and Child	564		
CPR Lay Responder Infant	158		
EverFi Certified	1,806		
FireFighter II	1		
First aid Certification	555		
First Responder Certification	165		
Floriculture Assessment	4		
IC3	42		
Microsoft Office Expert - Excel	1		
Microsoft Office Expert - Word	1		
MOS - Access	2		
MOS - Excel	74		
MOS - Outlook	65		
MOS - Powerpoint	345		
MOS - Word	556		
MTA Networking	15		
MTA Windows OS	4		
NATEF Automotive Technician	10		
NATEF Brakes (A5)	57		
		<b>TOTAL</b>	<b>7,170</b>

**Table 4. Office Proficiency Assessment and Certifications (OPAC) Earned by CTE 2 and CTE 3 Students, 2011–2012**

<b>Certification</b>	<b>N</b>	<b>Certification</b>	<b>N</b>
10-key	395	Microsoft® Excel [Basic]	101
Alphabetic Filing	470	Microsoft® Excel [Intermediate]	32
Applying Policies	16	Microsoft® Outlook	7
Bank Deposit	451	Microsoft® PowerPoint	131
Bank Reconciliation	210	Microsoft® Windows	17
Basic Math	1,019	Microsoft® Word [Basic]	290
Composing Minutes	9	Microsoft® Word [Intermediate]	23
Customer Service: Telephone	518	Numeric Filing	443
Data Entry 1 - Vender	398	Petty Cash	164
Data Entry 2 - Inventory	375	Proofreading 1	208
Data Entry 3 - Invoice	221	Proofreading 2	129
Database	5	Proofreading Practice	76
Editing/Formatting from a Rough Draft	3	Reading Comprehension	270
Editing/Formatting from Rough Draft Adv	2	Record Locating	272
Formatting a Letter	51	Sentence Clarity	351
Keyboarding	491	Spelling	879
Keyboarding 2	382	Spreadsheet	8
Legal Keyboarding	51	Telephone Order Entry	168
Legal Proofreading	12	Windows	94
Legal Terminology	1	Windows Vista	153
Medical Keyboarding	37	Windows XP	258
Medical Proofreading	4		
Medical Terminology	45		
		<b>TOTAL</b>	<b>9,240</b>

**Table 5. CTE 2, CTE 3, and Non-CTE English TAKS Performance, Spring 2011–2012**

<b>Academic Year</b>				
	<b>2011</b>		<b>2012</b>	
	<b># Tested</b>	<b>% Passing</b>	<b># Tested</b>	<b>% Passing</b>
<b>Mathematics</b>				
CTE 2	6,117	86	5,588	83
CTE 3	850	84	1,898	85
Non-CTE	12,850	76	12,010	79
<b>ELA</b>				
CTE 2	6,198	92	5,657	90
CTE 3	842	93	1,904	92
Non-CTE	12,996	88	12,171	88
<b>Science</b>				
CTE 2	6,109	84	5,598	84
CTE 3	855	86	1,900	86
Non-CTE	12,817	75	12,020	80
<b>Social Studies</b>				
CTE 2	6,109	97	5,525	97
CTE 3	855	96	1,891	97
Non-CTE	12,689	94	11,915	95

Note: Data retrieved from TEA TAKS, 2011–2012

**Table 6. Percent of CTE Graduates by Diploma Type, 2008–2010**

<b>CTE Code</b>	<b>Type of Diploma</b>	<b>2010</b>		<b>2011</b>	
		<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<b>2</b>	Completion of Individualized Education Plan	116	3.7	121	3.6
	Regular/Minimum Recommended	200	6.3	440	12.9
	Distinguished Achievement	2,650	83.4	2,651	77.9
		212	6.7	192	5.6
	<b>Total</b>	<b>3,178</b>	<b>100.0</b>	<b>3,404</b>	<b>100.0</b>
<b>3</b>	Completion of Individualized Education Plan	3	0.7	18	3.1
	Regular/Minimum Recommended	24	5.5	58	10.0
	Distinguished Achievement	393	89.9	485	83.6
		17	3.9	19	3.3
	<b>Total</b>	<b>437</b>	<b>100.0</b>	<b>580</b>	<b>100.0</b>
<b>HISD</b>	Completion of Individualized Education Plan	508	5.6	458	4.6
	Regular/Minimum Recommended	755	8.3	1,423	14.3
	Distinguished Achievement	7,320	80.3	7,545	75.8
		535	5.9	529	5.3
	<b>Total</b>	<b>9,118</b>	<b>100.0</b>	<b>9,955</b>	<b>100.0</b>

**APPENDIX A**  
**Career Concentrations and Related Courses\*, 2011–2012**

Career Concentration	Sample of Related Courses
Agriculture, Food & Natural Resources	Animal Science Applied Agricultural Science And Technology Floral Design And Interior Landscape Development
Architecture & Construction	Introduction to Construction Careers Piping Trades/Plumbing I Mill and Cabinetmaking I
Audio/Visual Technology and Communications	Advertising Design I Media Technology I Textile and Apparel Design
Business, Management and Administration	Administrative Procedures I Business Communications; Business Law
Education and Training	Child Development Child Care and Guidance, Management, and Services I
Finance	Accounting I Banking and Financial Systems
Health Science	Health Science Technology Medical Terminology; Pharmacology
Hospitality and Tourism	Culinary Arts I Hospitality Services I Hotel Management
Human Services	Consumer and Family Economics Introduction to Cosmetology Personal and Family Development
Information Technology	Business Computer Information Systems I Introduction to Computer Maintenance Keyboarding
Law, Public Safety, Corrections and Security	Courts and Criminal Procedure Criminal Investigation Emergency Communications
Manufacturing	Metal Trades I Technology Systems Welding I
Marketing, Sales and Service	Advertising Entrepreneurship Marketing Dynamics Professional Selling
Science, Technology, Engineering and Mathematics	Technical Introduction to Computer-Aided Drafting Introduction to Electrical/Electronic Careers Introduction To Engineering Design
Transportation, Distribution and Logistics	Automotive Technician I Introduction To Transportation Service Careers

\* Complete listing of courses can be found at <http://www.houstonisd.org/portal/site/CareerTech>.

**APPENDIX B**  
**Enrollment in CTE Courses by High Schools with Codes 2 and 3, 2012**

	<b>Total</b>	<b>AG</b>	<b>% AG</b>	<b>AC</b>	<b>% AC</b>	<b>AV</b>	<b>% AV</b>	<b>BS</b>	<b>% BS</b>	<b>CP</b>	<b>% CP</b>
<b>District Totals</b>	20,392	625	3.1	392	1.9	1,279	6.3	5,344	26.2	211	1.0
<b>School Name</b>											
Austin HS	2,160	170	7.9	161	7.5	65	3.0	724	33.5	17	0.8
Bellaire HS	1,072	98	9.1					512	47.8		
Challenge HS	12							3	25.0	9	75.0
Chavez HS	230	35	15.2	3	1.3	7	3.0	33	14.3	2	0.9
Davis HS	213					6	2.8	9	4.2		
DeBakey HS	1,034							163	15.8		
East Early College HS	58							11	19.0		
Eastwood Academy	248					55	22.2	72	29.0		
Furr HS	98			13	13.3			37	37.8	3	3.1
High School LECJ	978					73	7.5	246	25.2		
Houston Math/Sci./Tech. Center	316	3	0.9	5	1.6	9	2.8	90	28.5	4	1.3
Jones HS	192										
Jordan HS	1,755			29	1.7	330	18.8	325	18.5	28	1.6
Kashmere HS	166							68	41.0	6	3.6
Lamar HS	2,260	307	13.6	60	2.7	125	5.5	562	24.9	9	0.4
Madison HS	423	12	2.8			9	2.1	125	29.6		
Milby HS	773			58	7.5	68	8.8	127	16.4		
North Houston Early College HS	49							49	100.0		
Reagan HS	922					116	12.6	230	24.9	47	5.1
Scarborough HS	407			51	12.5	74	18.2	218	53.6		
Sharpstown HS	34							12	35.3	1	2.9
Sharpstown MS	1										
Sterling HS	297					7	2.4	30	10.1		
Waltrip HS	2,120							537	25.3	55	2.6
Washington HS	321					26	8.1	105	32.7	10	3.1
Westbury HS	2,249					59	2.6	779	34.6	20	0.9
Westside HS	1,218					138	11.3	98	8.0		
Wheatley HS	508			12	2.4			146	28.7		
Worthing HS	1							1	100.0		
Yates HS	277					112	40.4	32	11.6		

AG= Agriculture; AC= Architecture/Construction; AV= Arts, A/V Technology and Communications, BS= Business, Management and Administration; CP= Career Preparation I.

Note: Enrollment percentages are calculated based on campus totals and campus course participation (across rows).

**APPENDIX B (continued)**  
**Enrollment in CTE Courses by High Schools with Codes 2 and 3, 2012**

	<b>Total</b>	<b>CR</b>	<b>% CR</b>	<b>ED</b>	<b>% ED</b>	<b>FN</b>	<b>% FN</b>	<b>GV</b>	<b>% GV</b>	<b>HS</b>	<b>% HS</b>
<b>District Totals</b>	20,392	1	0.0	21	0.1	606	3.0	94	0.5	2,482	12.2
<b>School Name</b>											
Austin HS	2,160			21	1.0	101	4.7			47	2.2
Bellaire HS	1,072					42	3.9			52	4.9
Challenge HS	12										
Chavez HS	230					11	4.8			85	37.0
Davis HS	213					4	1.9			1	0.5
DeBakey HS	1,034									871	84.2
East Early College HS	58										
Eastwood Academy	248					11	4.4				
Furr HS	98									7	7.1
High School LECJ	978					61	6.2	94	9.6	73	7.5
Houston Math/Sci./Tech. Center	316									58	18.4
Jones HS	192										
Jordan HS	1,755					43	2.5			82	4.7
Kashmere HS	166									20	12.0
Lamar HS	2,260	1	.04			95	4.2			53	2.3
Madison HS	423					8	1.9				
Milby HS	773									132	17.1
North Houston Early College HS	49										
Reagan HS	922					64	6.9			105	11.4
Scarborough HS	407										
Sharpstown HS	34									5	14.7
Sharpstown MS	1										
Sterling HS	297										
Waltrip HS	2,120									229	10.8
Washington HS	321					8	2.5			65	20.2
Westbury HS	2,249					77	3.4			226	10.0
Westside HS	1,218					53	4.4			313	25.7
Wheatley HS	508									58	11.4
Worthing HS	1										
Yates HS	277					28	10.1				

CR=Career Preparation II; ED= Education and Training; FN= Finance; GV=Government and Public Administration; HS= Health Science.

Note: Enrollment percentages are calculated based on campus totals and campus course participation (across rows).

**APPENDIX B (cont.)**  
**Enrollment in CTE Courses by High Schools with Codes 2 and 3, 2012**

	<b>Total</b>	<b>HT</b>	<b>% HT</b>	<b>HU</b>	<b>% HU</b>	<b>IT</b>	<b>% IT</b>	<b>LW</b>	<b>% LW</b>	<b>MN</b>	<b>% MN</b>
<b>District Totals</b>	20,392	840	4.1	998	4.9	3,000	14.7	671	3.3	167	0.8
<b>School Name</b>											
Austin HS	2,160	24	1.1	25	1.2	168	7.8				
Bellaire HS	1,072	81	7.6	19	1.8	142	13.2				
Challenge HS	12										
Chavez HS	230	3	1.3			6	2.6				
Davis HS	213	138	64.8	39	18.3	15	7.0				
DeBakey HS	1,034										
East Early College HS	58							7	12.1		
Eastwood Academy	248					110	44.4				
Furr HS	98			19	19.4						
High School LECJ	978					39	4.0	392	40.1		
Houston Math/Sci./Tech. Center	316			47	14.9	17	5.4	13	4.1		
Jones HS	192					24	12.5				
Jordan HS	1,755	61	3.5	182	10.4	107	6.1	53	3.0		
Kashmere HS	166					67	40.4				
Lamar HS	2,260	299	13.2			532	23.5			20	0.9
Madison HS	423	8	1.9	28	6.6	45	10.6			45	10.6
Milby HS	773			44	5.7	128	16.6			102	13.2
North Houston Early College HS	49										
Reagan HS	922					223	24.2				
Scarborough HS	407					64	15.7				
Sharpstown HS	34					16	47.1				
Sharpstown MS	1					1	100.0				
Sterling HS	297			113	38.0	37	12.5				
Waltrip HS	2,120	120	5.7	82	3.9	439	20.7	191	9.0		
Washington HS	321					47	14.6				
Westbury HS	2,249	16	0.7	316	14.1	390	17.3				
Westside HS	1,218	70	5.7	46	3.8	302	24.8	15	1.2		
Wheatley HS	508	20	3.9	16	3.1	81	15.9				
Worthing HS	1										
Yates HS	277										

HT= Hospitality and Tourism; HU= Human Services; IT= Information Technology; LW= Law, Public Safety, Corrections, and Security; MN= Manufacturing.

Note: Enrollment percentages are calculated based on campus totals and campus course participation (across rows).

**APPENDIX B (cont.)**  
**Enrollment in CTE Courses by High Schools with Codes 2 and 3, 2012**

	<b>Total</b>	<b>MK</b>	<b>% MK</b>	<b>PS</b>	<b>% PS</b>	<b>SC</b>	<b>% SC</b>	<b>TD</b>	<b>% TD</b>
<b>District Totals</b>	20,392	836	4.1	56	0.3	1,537	7.5	1,230	6.0
<b>School Name</b>									
Austin HS	2,160	92	4.3			173	8.0	372	17.2
Bellaire HS	1,072	33	3.1	12	1.1			79	7.4
Challenge HS	12								
Chavez HS	230					45	19.6		
Davis HS	213					1	0.5		
DeBakey HS	1,034								
East Early College HS	58	20	34.5			20	34.5		
Eastwood Academy	248								
Furr HS	98					19	19.4		
High School LECJ	978								
Houston Math/Sci./Tech. Center	316							70	22.2
Jones HS	192					168	87.5		
Jordan HS	1,755	161	9.2	44	2.5	220	12.5	90	5.1
Kashmere HS	166					5	3.0		
Lamar HS	2,260	75	3.3			122	5.4		
Madison HS	423	80	18.9			18	4.3	45	10.6
Milby HS	773	49	6.3			65	8.4		
North Houston Early College HS	49								
Reagan HS	922	69	7.5					68	7.4
Scarborough	407								
Sharpstown HS	34								
Sharpstown MS	1								
Sterling HS	297	9	3.0					101	34.0
Waltrip HS	2,120	139	6.6			244	11.5	84	4.0
Washington HS	321					60	18.7		
Westbury HS	2,249	19	0.8			126	5.6	221	9.8
Westside HS	1,218	11	0.9			172	14.1		
Wheatley HS	508	47	9.3			79	15.6	49	9.6
Worthing HS	1								
Yates HS	277	32	11.6						

MK= Marketing, Sales, and Service; PS= Problems and Solutions; SC= Science, Technology, Engineering, and Mathematics;  
TD= Transportation, Distribution and Logistics.

Note: Enrollment percentages are calculated based on campus totals and campus course participation (across rows).