

## Your Guide To Careers In



# Science, Technology, Engineering & Mathematics



60% of the new jobs in the U.S. produced in the coming decade will require at least some competency in the field of STEM.

*Thomas Friedman*



## Discover Your Talents

The need for qualified individuals in scientific and engineering-related fields has far outgrown the needs of the general workforce.



Each engineering job in the U.S. generates five to six additional jobs.

# Programs of Study



## Science and Mathematics (i.e. Chemist)

Those who choose careers in the Science and mathematics pathway apply essential mathematics and science content and skills in a real world context. Science and mathematics occupations include those in physical, environmental and human endeavors.

## Engineering and Technology (i.e. Mechanical Engineer)

Workers in this pathway should be able to apply mathematics, science and technology concepts to solve problems quantitatively in engineering projects involving design, development or production in various technologies.

# Career Options

Occupation	Education
Medical Scientist, except Epidemiologist	Doctoral Degree
Microbiologist	Doctoral Degree
Biochemist and Biophysicist	Doctoral Degree
Physicist	Doctoral Degree
Environmental Scientist and Specialist, including Health	Master's Degree
Hydrologist	Master's Degree
Geographer	Master's Degree
Anthropologist and Archeologist	Master's Degree
Natural Sciences Manager	Bachelor's Plus Experience
Engineering Manager	Bachelor's Plus Experience
Chemist	Bachelor's Degree
Atmospheric and Space Scientist	Bachelor's Degree
Civil Engineer	Bachelor's Degree
Petroleum Engineer	Bachelor's Degree
Aerospace Engineer	Bachelor's Degree
Biomedical Engineer	Bachelor's Degree
Agricultural Engineer	Bachelor's Degree
Cartographer and Photogrammetrist	Bachelor's Degree
Health and Safety Engineer, except Mining Safety Engineer	Bachelor's Degree
Biological Technician	Associate's Degree
Forensic Science Technician	Associate's Degree
Environmental Science and Protection Technician	Associate's Degree
Chemical Technician	Associate's Degree
Surveying and Mapping Technician	Moderate-Term On-The-Job Training

# Sample Graduation Plan (26 Credit RHSP)

9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
English I	English II	English III	English IV
Algebra I	Geometry	Algebra II	4th Year of Math
Biology	Chemistry	Physics	4th Year of Science
World Geography	World History	US History	Government/Economics

The following courses must be included in the personal graduation plan at a time deemed appropriate by the student, parent, and counselor. Please refer to the Katy I.S.D. Planning Guide for additional information.

**Communication Applications (1/2 Credit)**

**Fine Arts (1 Credit)**

**P.E. (1 Credit)**

**Language Other Than English (2 Credits)**

**Health (1/2 Credit)**

**Electives (5 Credits - May Include CTE Elective Options\*)**

\*CTE Elective Options (Note: Course Selection and Sequence Based On Individual Student Interests, Abilities, and Course Availability) See below:

<b>Program of Study</b>	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
<b>Science and Mathematics</b>	<ul style="list-style-type: none"> <li>• Concepts of Engineering &amp; Technology</li> </ul> <p><i>Also available in 8th Grade</i></p>	<ul style="list-style-type: none"> <li>• Introduction to Engineering Design</li> </ul>	<ul style="list-style-type: none"> <li>• Principles of Engineering</li> </ul>	<ul style="list-style-type: none"> <li>• Civil Engineering &amp; Architecture</li> <li>• Computer Integrated Manufacturing</li> <li>• Digital Electronics</li> <li>• Engineering Design &amp; Development</li> </ul>
<b>Engineering and Technology</b>	<ul style="list-style-type: none"> <li>• Concepts of Engineering &amp; Technology</li> </ul> <p><i>Also available in 8th Grade</i></p>	<ul style="list-style-type: none"> <li>• Introduction to Engineering Design</li> </ul>	<ul style="list-style-type: none"> <li>• Principles of Engineering</li> </ul>	<ul style="list-style-type: none"> <li>• Civil Engineering &amp; Architecture</li> <li>• Computer Integrated Manufacturing</li> <li>• Digital Electronics</li> <li>• Engineering Design &amp; Development</li> </ul>



# Advanced Technical Credit Course Crosswalk

The following CTE courses that are offered in Katy I.S.D. may qualify as Advanced Technical Credit Courses (ATC).

Katy I.S.D. CTE Courses	Jr./Community College Equivalent
<b>Civil Engineering and Architecture (8048)</b>	Civil Drafting (DFTG 2330 or DFTG 2430) OR
<b>Introduction to Engineering Design - IED (8641)</b>	Technical Drafting (DFTG 1305 or DFTG 1405) OR Basic Computer-Aided Drafting (DFTG 1309 or DFTG 1409)
<b>Computer Integrated Manufacturing (8041)</b>	Computer Integrated Manufacturing (INMT 1311 or INMT 1411)
<b>Digital Electronics (8045V)</b>	Instrumentation Test Equipment (INTC 1207 or INTC 1307)



## Tech Prep Six-Year Plan

Tech Prep Six-Year Plan in partnership with Houston Community College is available in Architectural Drafting Specialization. Please consult with teacher and/or counselor for additional information.



## For More Information

The Career & Technical Education Department  
6301 South Stadium Lane  
Katy, Texas 77492  
281-396-2633

### Resources

*Achieve Texas in Action: A College and Career Planning Guide* - Texas Education Agency  
*Occupational Outlook Handbook* - U.S. Department of Labor

*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 education programs, nor in its employment practices.*

