Why an Academy?

Students can gain valuable experience through specialized clubs, and the district's collaboration with industry, various universities and community colleges.

Academies...
Making a World of Difference

Find out more about this program through the Fort Bend ISD website at www.fortbendisd.com or by contacting the Elkins High School campus directly.

For more information contact:

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A Global Tomorrow

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Produced by the Community Relations Department

Academies... Making a World of Difference

Engineering Academy

Fort Bend Independent School District
ACADEMY program

Elkins High School • Engineering Academy

Overview

The Engineering Academy is a unique opportunity for high school students to explore their interest in the field of engineering. The curriculum has been designed by our Advisory Council, which is composed of leaders in the corporate community, and from various local institutions of higher learning. Our goal is to inform and excite the students about the potential of a career in engineering. Our challenge is to provide them with a valid experience on which to base this important decision. To this end, we have staffed our faculty with former engineers totaling over 40 years of real-world experience. Graduates of the academy will receive a medallion and a certificate of completion.

Application

Students are selected based on the following criteria:

1. Completed application (*www.fortbendisd.com*)
2. Handwritten essay on the student's interest in the program and what he / she has to offer
3. Grade Point Average, Standardized Test Scores
4. Attendance and discipline record
5. Teacher recommendations (2), preferably math and science

Four Year Plan

9th Grade
Principles of Manufacturing, Adv *
Principles of Arts, Audio-Visual Technology & Communications, Adv +

10th Grade
Engineering Design and Problem Solving, Honors*

11th Grade
Principles of Technology, Honors *

12th Grade
Problems & Solutions in Engineering Technologies, Honors *
Practicum in STEM, Honors

* Required for graduation from the academy
+ Meets Computer Applications credit

Courses

Principles of Manufacturing
Students interested in engineering as a career field can learn basic concepts and principles of engineering. This is an introductory treatment of various disciplines, utilizing various physics, science, and engineering modules as discovery learning centers. These include a wind tunnel, simulated structures, lasers/fiber optics, to name a few, and involve utilization of computer generated information in designing various systems.

Principles of Arts, Audio-Visual Technology & Communications
The relationship of computers and other technologies will be explored. Students will: apply computers to design, produce, and assess technology, develop computer systems, program robotics equipment , create presentations, simulations, & graphics, and learn to use data acquisition software and hardware.

Computer Engineering Design and Problem Solving
The basics of engineering geometry and design are investigated, with an emphasis on graphic communications. The engineering design process will be used to take a design from the conceptual stage to a finished product, complete with technical drawings, and present the final solution in an effective and professional manner. *Prerequisite: Principles of Manufacturing.*

Principles of Technology
This applied physics course will allow students to study matter and energy and their interactions. The concepts of force, energy, and power will be explored while applying the principles of mechanical, fluid, thermal, and electrical energy. Laboratory experience will constitute at least 40% of the class, qualifying it as a TEA-approved science elective. *Prerequisite: Principles of Manufacturing.*

Problems & Solutions in Engineering Technologies
Focus will be on the fundamentals of information and communication engineering. This unique course offering grabs the students' attention by using many examples from multimedia technology popular in today's culture. Particular emphasis is given to how modern engineers use math, science, and ingenuity to solve problems to design and build new technologies. The curriculum utilizes up-to-date web-based content as well as special software / hardware lab experiments. Additional information can be obtained from the website: *www.infinity-project.org. Prerequisite: Two technology courses from within the Engineering Academy.*

Practicum in STEM
This course provides students with the remarkable opportunity to work alongside practicing engineers. They will be assigned to various unpaid positions and benefit from the field experience of solving problems, working within a team framework, and learning the environmental and moral impact of ethics in action. Prerequisite: Completion of three or more courses within the Engineering Academy, with an 85 or higher average, and by teacher recommendation; transportation required.