

DUTCH FORK HIGH SCHOOL

STEM

science • technology • engineering • math



dutch fork high school



mission statement

The purpose of STEM is to accelerate the traditional curriculum, promote inquiry-style learning across the curriculum, develop literacy in STEM disciplines, and provide unique opportunities in and out of the classroom.

about us

The STEM (Science, Technology, Engineering, and Math) program at Dutch Fork High School is an honors magnet program that accelerates and enriches learning experiences for students who are academically gifted and have an interest in STEM-related majors and careers.

Since the beginning of our program in 2005, it has been a local answer to the national STEM initiative. STEM accelerates learning experiences which enable students to pursue AP courses, research, and potential career experiences in fields of interest. A major focus is the integration of STEM studies across the curriculum.

The STEM curriculum is designed to accommodate a variety of student interests and abilities. Upon completion of the STEM program, students are highly qualified for admission in rigorous and competitive university programs. Students who meet the requirements will be recognized at graduation as STEM Scholars or STEM Scholars with Honors and receive the STEM program designation for recommendations and applications for colleges and scholarships.

In the STEM program students are a part of a community of learners who are involved in STEM-related field trips and participate in school events planned for STEM students.

Students may earn the designation STEM Scholar with Honors. with additional requirements. Recognition currently includes a medal to be worn at graduation.

AP Capstone & Research

The AP Capstone Program allows students to analyze topics through different lenses, plan and conduct investigations, and collaborate to solve real-world problems while making cross-curricular connections. As a part of this national program, students pose and design research questions and implement solutions or experiments. In order to defend and support these positions, students participate in symposiums, fairs, and conferences.

Additional research and capstone opportunities are available in select STEM credit courses such as Clean Energy Innovations HN, Engineering Design & Development HN, Computer Programming 2 HN, and Biomedical Innovations and Research HN.

quality credit

The STEM Quality Credit is designed to help students grow outside the classroom, both personally and as members of the community. STEM students should be passionately committed to a cause or activity throughout their STEM career.

Actual activities will vary, but students should be active participants in their chosen area and must be able to clearly articulate the impact of the activity on their personal growth and community involvement. Some activities from past students include Robotics team, Leader in ROTC, Girl Scouts, athletics, volunteer work and Mock Trial.

Each spring STEM students reflect upon their chosen specialties including what they did and how their involvement changed them. One goal of the quality credit is to help STEM students build their personal statements for college applications through these experiences, increasing their competitiveness in a global economy.

course offerings

STEM Physical Science HN

STEM Biology 1 HN

STEM Chemistry 1 HN

Chemistry 2 HN

Physics 1 HN

Anatomy & Physiology HN

Marine Science HN

AP Biology

AP Chemistry

AP Physics 1,2,C

AP Environmental Science

Agricultural and Biosystems Science HN

Animal Science HN

Biosystems Mechanics & Engineering HN

*Environmental and Natural Resource Management
HN*

Intro to Veterinary Science HN

Wildlife Management HN

Principles of Biomedical Science HN

Human Body Systems HN

Medical Interventions & Research HN

Biomedical Innovations & Research HN

SCIENCE



ENGINEERING

Siemens Engineering Design HN

Siemens Manufacturing and Automation

Siemens Mechatronics

Siemens Engineering Research & Development

Principles of Engineering HN

Civil & Architectural Engineering HN

*Engineering Design & Development HN**

Clean Energy 1,2,3,4 HN*

Aerospace Engineering HN





course offerings

TECHNOLOGY

Computer Programming 1 HN STEM
AP Computer Science Principles
AP Computer Science A
Intermediate Computer Programming HN
Game Design HN
Aerospace Science 3,4 HN
Cyber Security Fundamentals HN
Advanced Cyber Security HN
Networking Fundamentals HN
Advanced Networking 2 HN
Biosystems Technology 1,2 HN
Media Technology 1,2,3,4 HN
Foundations of Animation HN
Advanced Animation HN
Artificial Intelligence
Mobile Applications Development



MATH

STEM Algebra 1 HN
STEM Geometry HN
STEM Algebra 2 HN
STEM Pre-Calculus HN
STEM AP Statistics
AP Calculus AB
AP Calculus BC
Vector Calculus (USC)

additional course offerings

STEM English 1 HN
STEM English 2 HN
STEM English 3 HN
STEM AP Human Geography
AP Psychology
AP Seminar
AP Research
AP Micro/Macro/Gov
AP Comparative Government

SCIENCE



TECHNOLOGY



ENGINEERING



MATH



sample freshman schedule

Required courses:

- Biology 1 Honors STEM
- English Honors STEM
- Math Honors STEM, appropriate level
- AP Human Geography STEM
- *Begin with one or two from:* (students will eventually take both courses)
 - Computer Programming 1 Honors STEM
 - Siemens Engineering Design Honors STEM

Other electives typical for freshman year:

- Physics Honors STEM
- Chemistry Honors STEM
- Orchestra / Band / Chorus / Fine Arts
- Foreign Language
- Physical Education or ROTC
- Study Hall

Admission Requirements and How to Apply

The application process begins with the submission of the application. To qualify for the STEM program, a student must be enrolled in honors level courses in the 8th grade or moving into honors courses in the 9th grade, with academic performance and MAP scores indicative of potential success in the STEM program. Students will be required to use and access technology daily at school and home.

www.lexrich5.org/dfhsmagnet

student testimonials



Dr. Sabra Neal,
Georgia Tech

“STEM is an excellent program that provides the key ingredients to a successful career in tech. The knowledge and support of the STEM teachers have followed me beyond graduation and for that I will forever be thankful.”



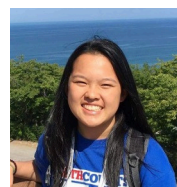
Caitlin Kunchur,
Stanford

“Starting off in the STEM program and experiencing a challenging curriculum freshman year prepared me for my future courses and helped me to develop a balance between school and extracurricular activities. I was also surrounded by teachers who are always willing to help me succeed.”



Dr. Daniel Ott,
Harvard

“The STEM program was critical in jumpstarting my interest in the sciences, and the academic rigor of the coursework prepared me for a challenging undergraduate curriculum. The community of “stemmies” became my closest friends in high school and motivated me to push myself as far as I could.”



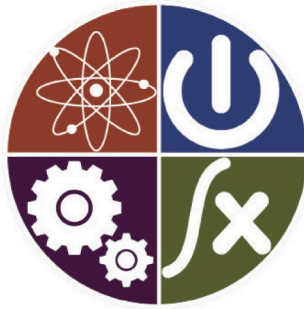
Kathleen Chen,
Duke

“The STEM program creates a great community where students push each other to success. The program taught me the importance of a competitive yet collaborative environment and helped set me up for success at university.”

post-secondary plans

STEM students have been accepted into prestigious universities including:

- | | |
|--------------------------------------|--------------------------------|
| - Boston University | - New York University |
| - California Institute of Technology | - Notre Dame |
| - Carnegie Mellon University | - Princeton University |
| - Clemson University | - St. George's University |
| - Cornell University | - Stanford University |
| - Duke University | - Tulane University |
| - Emory University | - University of Chicago |
| - Furman University | - University of North Carolina |
| - Georgia Institute of Technology | - University of Pennsylvania |
| - Harvard University | - University of South Carolina |
| - John Hopkins | - Vanderbilt University |
| - Massachusetts Inst. of Technology | - Yale University |



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