

Walpole High School

S.T.E.M. Academy Program Overview

SCIENCE-TECHNOLOGY-ENGINEERING-MATHEMATICS

The mission of the Walpole High School STEM Academy is to create a culture where Science, Engineering, Technology and Mathematics are celebrated and where students are inspired to turn their passion into a fulfilling career.

Vision

Walpole High School STEM Academy inspires young people to be future leaders by engaging them in real world, hands-on, mentor-based STEM activities and curriculum. We teach STEM as an integrated program and carefully connect the curriculum in each of the STEM fields throughout the duration of the Academy. Our programs build Science and Math skills, inspire innovation and creative thinking, and foster well-rounded life capabilities including resiliency, teamwork, and communication skills essential in today's hi-tech world. The curriculum includes courses (outlined below) rich in the application of content, extensive problem-solving experiences, and integrated technologies. Advanced Placement and/or Honors courses in STEM are incorporated into the curriculum in order to challenge our students throughout their high school career and to prepare them for the rigors of STEM fields of study in college and beyond.

Program Outline

Admission into the WHS STEM Academy is based on students past academic performance, dedication to advanced and independent learning, and desire to pursue STEM related careers. Students must fulfill all Walpole High School graduation requirements; STEM Academy students are also required to take four full years of rigorous STEM coursework. The Academy is carefully designed to be accessible to *all students*. A simplified high school scheduling comparison is provided below:

WHS Graduation Requirements

English: 4 Years
Mathematics: 3 Years
Science: 3 Years
Social Studies: 3 Years
Foreign Language: 1 Year
Wellness: 1 Year
Non-Core Electives: 3 Years

STEM Academy **Additional** Requirements

None
Mathematics: 4 Years (1 additional)
Science: 4 Years (1 additional)
None
None
None
Engineering/Technology: 4 Years (1 additional)

Academy Coursework & Extensions

- **Honors/Advanced Placement-level STEM enrolment as a senior** (or sooner)
- Science Curriculum: Physical Science*, Biology, Chemistry, Physics (*typical, not required)
- Mathematics Curriculum: Algebra I, Geometry, Algebra II, Calculus
- Engineering & Technology Curriculum: [Technical CAD, Product Design & Analysis, Energy Systems, Robotics]*, Engineering Design, Advanced Robotics. [*Semester Classes]
- **Successful completion of STEM extracurricular extensions including:**
 - Science Fair – Independent Project (9th Grade)
 - Computer Science Challenge – Small Group Project (10th Grade)
 - STEM Choice: M³ Challenge, Science Olympiad, Robotics – Team Project (11th Grade)
 - Senior Capstone Project (12th Grade)

Frequently Asked Questions

- Q** *Do I need to enroll in Honors-level STEM courses as a freshmen?*
- A** No. Students are required to enroll in Honors-level or Advanced Placement courses as a senior. Our students will always be encouraged to challenge themselves to take the most rigorous courses that they are comfortable with taking.
- Q** *Which courses must be Honors-level in my senior year?*
- A** Each of the STEM areas must be Honors or Advanced Placement during a student's senior year. This would include one Science course (typ. Physics or Biology), one Math course (typ. Calculus) and one Engineering/Technology course (typ. Advanced Robotics). That is a total of 3 Honors/AP courses required during senior year.
- Q** *Will I be in a closed-schedule cohort with only other STEM Academy students?*
- A** No. STEM students will be scheduled like any other, with priority given to their required STEM coursework. There will be no separate STEM cohort classes in any of the high school's curriculum areas.
- Q** *If I am not accepted into the Academy as freshmen, will I have another opportunity to apply?*
- A** Yes. Those students who are not accepted as freshmen will be *strongly encouraged* to enroll in the STEM Academy classes anyway (this is the stuff you want to take, right!). A student's success in these freshmen classes will greatly impact their consideration for admission into the Academy as a sophomore.
- Q** *When will I be notified of my application status?*
- A** You will receive a confirmation email message upon submitting your application. All applicants will be notified of their acceptance status by May 16th, 2017.
- Q** *How many students are admitted into the Academy each year?*
- A** Up to twenty freshmen will be admitted each year. Ten additional students may be accepted at the conclusion of their freshmen year for a maximum of 30 Academy students in each graduating class.
- Q** *Is the freshmen Science Fair project a scheduled class?*
- A** No. Science Fair will not be a scheduled class for students in the STEM Academy. Students will be required to work independently (and/or collaboratively) on this project as well as every extension project each year. Students are required to present their project at the regional level as well as during our annual STEM community night.
- Q** *When will I have time to meet with my STEM advisors?*
- A** Time will be scheduled monthly during the High School's 'PLC' block for the cohort to meet as a group (these meetings will be run by STEM Advisors). Students are expected to use the remaining PLC time to meet with one another and to work on their project (these meetings are organized by students).
- Q** *Will I have opportunities to explore other elective areas such as Music, Visual Arts, or Foreign Languages?*
- A** Yes, in fact students will be encouraged to do so! Several such variations have been modeled and lived by current students. The scheduled graduation requirement additions to the STEM Academy are 'typical' of a student interested in pursuing a STEM field of study. Many of these students participate in the Music program, Visual Arts, or take multiple languages without a conflict.
- Q** *Where can I find more information about the WHS STEM Academy?*
- A** Find all of our resources online at the WHS STEM Academy Website:
http://walpolewhs.ss5.sharpschool.com/academics/w_h_s_s_t_e_m_academy
- Q** *Who can I contact with specific questions about the Academy and/or the application process?*
- A** Feel free to contact Mrs. O'Malley (Science), Mr. Scott (Engineering/Technology), Mr. Braccini (Unified Department Chair), and/or Mr. Passeggio(Mathematics) with your specific curriculum questions:
- Mrs. O'Malley – momalley@walpole.k12.ma.us
 - Mr. Scott – dscott@walpole.k12.ma.us
 - Mr. Passeggio – dpasseggio@walpole.k12.ma.us
 - Mr. Braccini – jbraccini@walpole.k12.ma.us

General Questions? - STEM@walpole.k12.ma.us