



# WALL HIGH SCHOOL PRE-ENGINEERING ACADEMY | EST. 2013 |

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## MISSION OF THE PRE-ENGINEERING ACADEMY

The Wall Township Pre-Engineering academy, with its innovative and rigorous project-based, iSTEM (integrative Science, Technology, Engineering, and Mathematics) curriculum, will increase technological literacy as well as better prepare students for their post-secondary education and, ultimately, a career in the field of engineering or technology/science related field.

## ACADEMIC RIGOR

Students must meet all high school graduation requirements as set forth by the New Jersey Education Department, as well as any further requirements set forth by the Wall Township School District. In addition, the academy will require students to take specific courses in the subject areas of math and science. These courses must be taken on an honors track, ending with the Advanced Placement (AP) level for each. Academy students will also take a four-year sequence of engineering courses.

## ENGINEERING COURSES

The required engineering courses have been designed to expose students to as many fields of engineering as possible. These courses integrate the math and science principles covered in the required courses while also giving students experience in a real-world engineering environment through short and long-term case studies. Each course is designed to build upon the previous one to reinforce the skills set learned. The program culminates with a capstone course where students work in groups to address, design and implement a solution to a problem throughout an entire school year. Students will conduct literary reviews and research, document their progress through engineering portfolios, and present their work several times throughout the year. This course is similar to capstone courses found at the college and university level.

## SAMPLE STUDENT SCHEDULE

**NOTE:** The schedule below is for informational purposes only. Each student works with their counselor to develop a schedule tailored to their own needs/personal goals and every academy student's schedule is different.

9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
English 9	English 10	English 11	English 12
World History	US History 1	US History 2/AP US History	Elective
Phys Ed/Health	Phys Ed/Health	Phys Ed/Health	Phys Ed/Health
Algebra II (H)*	Pre-Calculus (H)	AP Calculus AB	AP Calculus BC
World Language	World Language	World Language	World Lang/Elective
Biology (H)	Chemistry (H)	Physics (H)	AP Science (Bio/Chem/Phys/Enviro)
Engineering Design 1**	Engineering Design 2**	Robotics**	Engineering Capstone (H)**
Elective/Band	Elective/Band	Elective/Band	Elective/Band

\* Academy students can enter the math track with either Geometry (H) or Algebra II (H)

\*\* Required Engineering courses

## STUDENTS IN THE PRE-ENGINEERING ACADEMY

- Tailor their elective choices to focus on the Engineering field
- Develop a career plan designed to keep them focused and help them make connections between what they learn in school and success in the adult world
- Participate in professional development activities focusing on employer-desirable soft skills
- Have access to shadowing and internship experiences in the industry with local engineering firms
- Can network with current college engineering students and engineering professionals
- Will receive preferential course scheduling ensuring that all students are able to complete required academy courses and program requirements
- Build camaraderie among students with similar interests
- Establish their professional presence before graduation