






# Pathway: Engineering and Technology

## Career Cluster: Science, Technology, Engineering, Arts, and Mathematics

Recommended Course Plan	Required Core Science and Mathematics Courses	Engineering and Technology Pathway	Occupations Related to this Pathway
4 years English Language Arts 4 years Social Studies 4 years Science 4 years Mathematics 4 years World Languages 4 years Physical Education/Health 1 year Visual/Media/Performing Arts 1 year Business/Practical Arts 1 Semester Financial Literacy Freshman Advisory  Note: The career pathways are suggested courses based on career interest. Students are not locked into one pathway and may select any course as long as they have met all co-requisites and prerequisites.	Biology Algebra 1/Geometry/Algebra 2   Chemistry Geometry/Algebra2/Pre-calc   Physics Algebra 2/Pre-calc/Hon Calculus	(9,10,11) Technology and Engineering Principles Honors Future problem Solving   (10,11,12) Computer Modeling Computer Programming and Design Entrepreneurship Humanoid Robotics Interior and Structural Design Honors CPS T <sup>3</sup> Innovations and Inventions   (11,12) Advanced Interior & Structural Design AP Chemistry AP Statistics Honors STEAM: Design and Research Statistics   (12) AP Physics Honors STEAM Capstone: Research/Internship	Aeronautical Engineer, Aerospace Engineer, Agricultural Engineer, Agricultural Technician, Application Engineer, Architectural Engineer, Automotive Engineer, Biomedical Engineer, Biotechnology Engineer, CAD Technician, Chemical Engineer, Civil Engineer, Communications Engineer, Computer Engineer, Computer Programmer, Construction Engineer, Electrical Engineer, Electronics Technician, Geothermal Engineer, Industrial Engineer, Manufacturing Engineer, Manufacturing Technician, Marine Engineer, Mechanical Engineer, Metallurgist, Mining Engineer, Nuclear Engineer, Petroleum Engineer, Product/Process Engineer, Survey Technician, Systems Engineer, Transportation Engineer



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### Authentic Real-life Experiences

Mahwah High School offers a variety of co-curricular opportunities to students to expand their knowledge and understanding outside of the academic classroom. Engineering and Technology Pathway students will have the opportunity to participate in unique project-based learning opportunities that develop problem solving, technical, and teamwork skills.

#### Co-curricular Opportunities

##### **Bergen County Mathematics League**

The Mathematics League promotes the enjoyment and study of mathematics by organizing contests. Math contests give students an educationally enriching opportunity to participate in an academically oriented activity and to gain recognition for mathematical achievement. Our main goal is educational: To promote the enjoyment and study of mathematics by organizing contests.

##### **FIRST Robotics – Robo T-birds Team 1672- [www.firstinspires.com](http://www.firstinspires.com)**

*FIRST*® inspires young people to be science and technology leaders and innovators by engaging them in exciting mentor-based programs that build science, engineering, and technology skills that inspire innovation and foster well-rounded life capabilities, including self-confidence, communication, and leadership. Students may earn a varsity letter in robotics, and college scholarships are available

##### **Girls Excelling in Math and Science**

Girls Excelling in Math and Science (GEMS) aims to encourage girls in STEAM environments, including listening to accomplished female guest speakers from various STEAM-related fields, learning more about women's studies, and exploring different areas of STEAM through hands-on activities.

##### **Science Club and NJ Science League**

The NJ Science League offers interschool competition in Biology, Chemistry, Physics, Earth Science, and Environmental Science. Tests are usually held after school on the second Thursday of the months of January, February, March, and April at the different school campuses.

##### **Technology Student Association (TSA)**

Learning to Lead in a Technical World Fun, engaging competitions throughout the year!

Enhance your STEM skills. The Technology Student Association enhances personal development, leadership, and career opportunities in STEM, whereby members apply and integrate these concepts through intra-curricular activities, competitions, and related programs.



## Woodworking Club

Woodworking Club looks to build skills to promote design and fine craftsmanship. Students create projects and build furniture beyond the scope of the course.

