Major Entrance Requirements

- Two Units of English
- Two Units of Math (must include Geometry or Algebra 2)
- Two Units of Science (must include Biology)
- One Unit of Physical Education

Application Process

- Apply online through Horry County Schools or the AAST website.
- Thoroughly complete the application before the deadline.
- If accepted, return the acceptance confirmation by the district deadline.

Vision

Realize the Possibilities

Mission

AAST is a Cognia whole school STEM certified school committed to preparing its students to be college and career-ready global citizens by fostering creativity, innovation, systematic problem-solving, and critical thinking through participation in rigorous and authentically collaborative academic and career experiences.

AAST

a stem school ~ realize the possibilities

What is STEM?

STEM stands for Science, Technology, Engineering, and Mathematics. STEM is a philosophy of education embracing teaching skills and subjects in a way that resembles real life. STEM is about discovering and creating ingenious ways of problem solving, integrating principles, or presenting information. Instead of teaching courses in independent subject compartments, lessons are well rounded, project and inquiry based, with a focus on interdisciplinary learning. STEM education prepares students to explore and advance in their chosen STEM related career pathway to ensure they are college and career ready. Education is no longer about memorizing facts. STEM is about learning how to think critically, evaluate information, apply knowledge, and problem- solve to compete in the 21st century workforce.

Pre-Engineering Instructor

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Guidance Counselors

Wanda Randall - NMB, GSF, LHS, AHS, MBH
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Administration

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Mariah Reiss - Assistant Principal
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HCS Horry County Schools

Pre-Engineering

AdvancED STEM CERTIFIED

The Academy for the Arts, Science, and Technology

895 International Drive
Myrtle Beach, SC 29579
aast.horrycountyschools.net
www.horrycountyschools.net

What is Pre-Engineering?

The Pre-Engineering major is designed to expose students to a wide variety of engineering disciplines while developing skills needed to be successful in college and a career in engineering. Digital curriculums and engineering modules are used to introduce students to many different types of engineering. Students are allowed to pursue their particular areas of interest through off campus experiences such as shadowing for juniors and internships as seniors. Seniors engage in a year long mastery project that allows them to practice and demonstrate what they have learned about their chosen engineering field. Students will work towards mastery achievement of all Academy academic and employability/life skill competencies during both junior and senior years.

Areas of Study

- Architectural Engineering
- Mechanical Engineering
- Civil Engineering
- Electrical Engineering
- Environmental Engineering

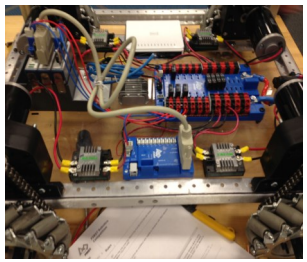
- Computer Engineering
- Aeronautical Engineering
- Chemical Engineering
- Structural Engineering
- Computer Aided Drafting
- FIRST Robotic

Major Courses Junior Year
Core Engineering 1 and 2

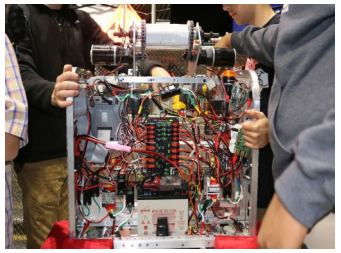
The junior year of Pre-Engineering explores the world of engineering through many lenses. Students will work on various engineering modules, shadow professionals to gather information about career fields in engineering, communicate their findings to the class, and work with robotics kits and curriculum for preparation for a variety of competitions. 3D Solid Modeling software will be utilized to prepare students for CSWA (Certificate of SolidWorks Associate) .Students will also participate in several off campus STEM experiences to enhance and explore different aspects of a career in engineering.

Senior Year-
Core Engineering 3 and 4

Seniors will focus on robotics competitions, internships, and the senior exhibition of mastery project. Each student will submit a detailed proposal identifying and describing all components of their mastery project. Students will be placed in an internship for 6 to 16 weeks. For the final stage of mastery, students will create a formal presentation to communicate their findings to the class and a panel of business partners, parents, and guests. Seniors will also generate a portfolio documenting all progress electronically as well as keeping a binder of all works. The portfolio will serve as evidence of progress and justification of competencies demonstrated through assignments.



Opportunities



- Junior job shadowing
- Senior internships
- Industry guest speakers
- Career research and exploration
- Local, regional, and national competitions
- Inquiry and project based instruction
- Use of industry standard software
- Senior exhibition of mastery
- Industry standard certification-SolidWorks

Job Shadowing

Juniors will be required to shadow at least once per interim, twice per 9 weeks. After each shadowing experience students will communicate their finding via a written essay and formal presentation to the class. Students may shadow more than the minimum requirement but must present after each experience.

AP Capstone Opportunity

Students may choose to pair AP Capstone Seminar and Research with Pre Engineering Students must take AP Capstone Seminar in their junior year followed by AP Capstone Research their senior year.