



# ACADEMY OF ENGINEERING

## PARTNERS AND SPONSORS

- AT&T Foundation
- Ewing Marion Kauffman Foundation
- FIRST Robotics
- Joint Engineering Council
- KC STEM Alliance
- Metropolitan Community College - Business and Technology Campus
- National Academy Foundation
- National Action Council for Minorities in Engineering
- National Society of Black Engineers
- Project Lead The Way
- Black & Veatch
- Burns & McDonnell
- Cerner Corporation
- Custom Engineering
- Honeywell Federal Manufacturing & Technologies
- Kansas City Power & Light

FOR MORE INFORMATION  
PLEASE GO TO  
[WWW.NAF.ORG](http://WWW.NAF.ORG) OR  
[WWW.NACME.ORG](http://WWW.NACME.ORG)  
[WWW.HICKMANMILLS.ORG](http://WWW.HICKMANMILLS.ORG)



KC STEM ALLIANCE



### A PATH TO SUCCESS

## OUR VISION

Using 21st century skills, students in the Hickman Mills School District Academy of Engineering will be challenged and prepared for success in the field of engineering, post-secondary education, the global workforce, and careers yet to be invented.

## OUR COMMITMENT

**Rigor. Relevance. Relationships.**

### *Commitment to Rigor*

- Student's personalized education and career plan includes a major area of interest.
- High expectations for all students.
- Curriculum meets or exceeds state standards, college entrance requirements, and industry standards.
- Students are engaged in planning and making decisions for their future.

### *Commitment to Relevance*

- Students are motivated by applied, contextual, project-based teaching and learning.
- Students gain career experience through work-based opportunities
- Students develop skills important to success in careers, life, and society.
- Students are provided pathways to postsecondary education.

### *Commitment to Relationships*

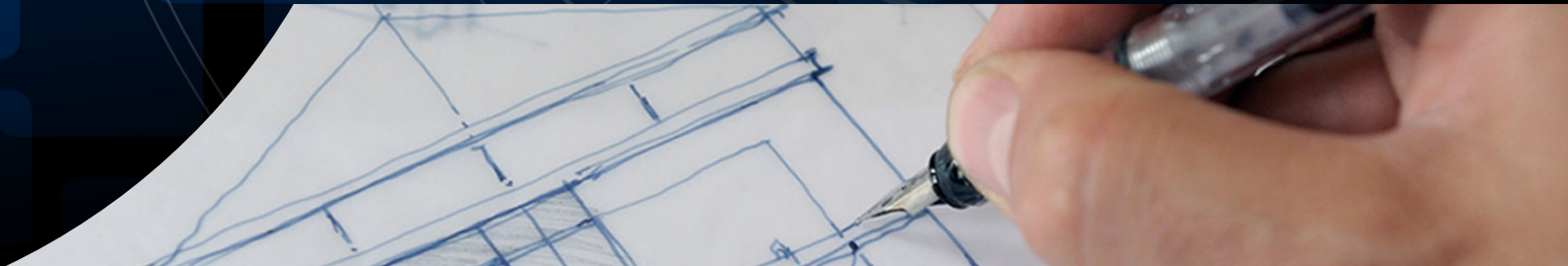
- Students are grouped together over several years with advisors and teachers.
- Business partners serve as role models, mentors, and advisors.
- Business partners provide work-based learning opportunities to our students.

## OUR MISSION

The Hickman Mills School District Academy of Engineering will provide a supportive learning community, enabling students to become self-directed learners with the skills necessary for future academic and workplace success through challenging, authentic instruction. Community and business partnerships will also provide unique, relevant opportunities for exposing students to the various aspects of the field of engineering.

## OUR GOALS

- Students will gather, analyze, apply, evaluate, and synthesize information and ideas from a variety of sources such as reading, listening, viewing, and electronic databases.
- Students will use technological tools to locate, select, and organize information and to produce communications and presentations.
- Students will communicate effectively with others in a variety of situations and in a variety of ways.
- Students will explain reasoning and support opinions.
- Students will work effectively with others to accomplish goals.
- Students will seek to understand multiple perspectives on issues.
- Students will identify and solve problems effectively.
- Students will demonstrate respect, accountability, empathy, and responsibility, recognition of diversity, honesty, compassion, cooperation, self-confidence, initiative, and resourcefulness.
- Students will accept and carry out the responsibilities of citizenship in a democracy.
- Students will become life-long learners.



## CURRICULUM AND INSTRUCTION

The curriculum and instruction within our academy meets or exceeds states standards and college entrance requirements, while differing from a typical high school by focusing on an Engineering theme.

- Communication Arts 1, CA1 Honors, CA2, CA2 Honors, CA3, CA4, AP Language, AP Literature, English 110/204
- Social Studies, Multicultural American History, World History, AP European History, American History, AP American History, American Government, AP American Government
- Mathematics, Pre-Algebra, Algebra I, Geometry, Honors Geometry, Algebra II, Trigonometry, Pre-Calculus, Calculus I, College Algebra
- Science, Physics First, Chemistry, Biology, Physics, AP Biology, AP Chemistry, AP Physics, Environmental Science, Anatomy and Physiology
- PLTW: Engineering by Design, Gateway to Technology, Intro to Engineering Design, Digital Electronics, Principles of Engineering, Engineering Design and Development, Civil Engineering and Architecture, Internship

## ACADEMY OF ENGINEERING

Ruskin High School and Hickman Mills Junior High School, through the National Academy Foundation (NAF), are the first in the Midwest to receive the distinction of becoming National Academy of Engineering (NAE) schools. Implementation begins during the 2011-12 school year with a number of activities including FIRST Robotics and Project Lead The Way (PLTW) pre-engineering courses.

Through the cooperation and assistance of NAF and the National Action Council for Minorities in Engineering (NACME), this program will introduce and connect Hickman Mills C-1 students to the world of engineering and provide them a path to a variety of successful engineering careers.

## ACADEMY STRUCTURE

The AoE will be set up like a “school within a school”. The structure elements will include student recruitment, cohort scheduling, and physical space for the AoE.

The academy is opened to all students from the Hickman Mills School district. Students in the AoE will be placed on an academic team, based on their desire to participate in the engineering program. The recruitment team will put an emphasis on the ACT explorer tests, which is given in the 8th grade, as well as the ACT plan test. These tests determine some of the interests that the student might have in a career. The team will also put an emphasis on the Gateway to Technology classes that the feeder schools have in place.

Students move through classes’ together encouraging cross-curricular integration and a team environment. The teachers will have a common plan in order to discuss cross-curricular projects, activities, and any other academy business.

The academy will be housed at the Hickman Mills Junior High School building for the 9th grade students. They will then move on to the Ruskin High School building for their 10th, 11th and 12th grade years.

## ACADEMY PARTNERSHIPS

The district board of education is committed to the academy and its mission and goals, and is on public record in support. Likewise, the Superintendent publicly endorses the academy and offers active support. The Hickman Mills Board of Education and the superintendent serve as academy liaisons to the Kansas City metropolitan community.

The high school principal and other administrators are knowledgeable about the academy, publicly support, and are actively involved. They contribute to a positive academy profile within the high school.



## THE LEARNING EXPERIENCE

Students in the Academy of Engineering will engage in a six week “learning experience” in between their junior and senior year. The “learning experience” can be in the form of a compensated internship, uncompensated internship, job shadowing, co-op, work project, or other form of a supervised learning experience.

The summer learning experience is not a summer job, it is an extension of the curriculum and classroom instruction supervised by actual professionals in a real-world setting.

For more information please contact  
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*“It is intended to be a small learning community with a heavy focus on mathematics, science, introduction to engineering and curriculum provided by Project Lead The Way.”*

DR. IRVING MCPHAIL, NACME PRESIDENT AND CEO

