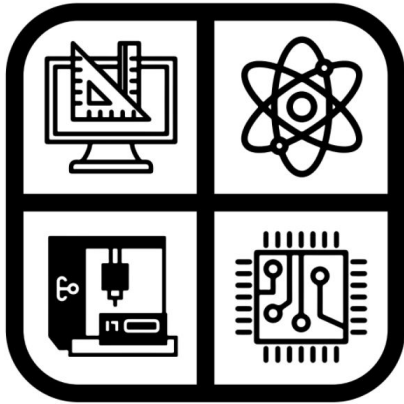
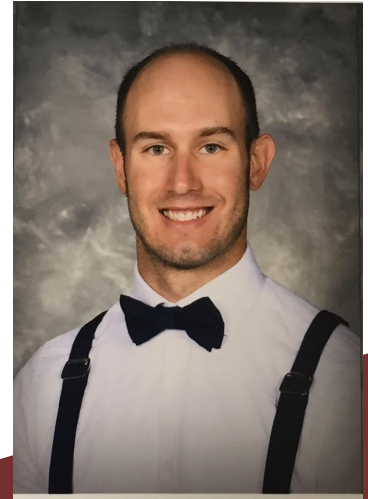


Mr. David Helmick

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THE **ENGINEERING ACADEMY**



Modern
Manufacturing
for Employment



EST. 2022

Stow Munroe-Falls High School Engineering Academy

Mr. David Helmick; Polymer Testing
and Modern Manufacturing for
Employment Instructor



Cuyahoga Falls,
Hudson, Kent, Stow,
Tallmadge, &
Woodridge

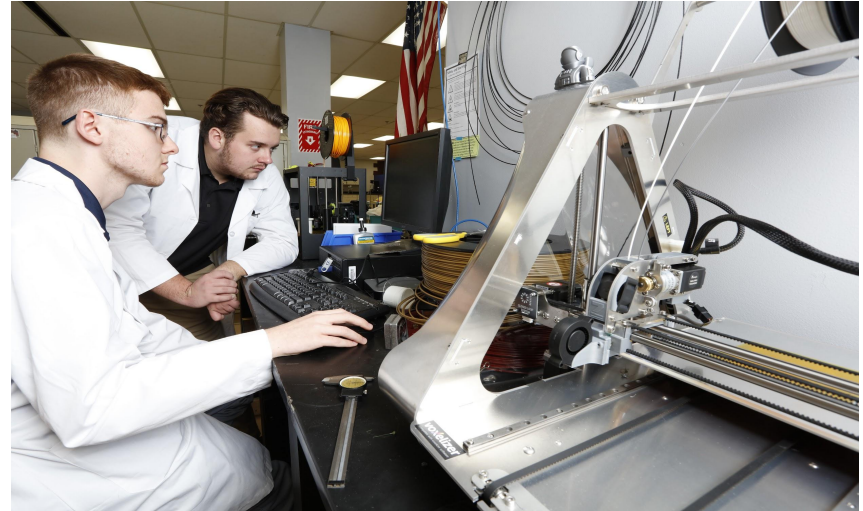


What is the Engineering Academy?

The Academy is a two year, half day morning program yielding 5 credits per year. Students experience a combination of technology courses in collegiate level labs and challenging academic classes.

All students attend two campuses:

- **Theodore Roosevelt High School for 3 semesters: Computer Aided Design, Electronics & Manufacturing Processes**
- **Stow-Munroe Falls High School for 1 semester: Polymers .**



The Polymers Lab at Stow-Munroe Falls High School

Tour of the

Polymers Lab 3D Tour

Thank you ORG
For the support!



Two wet lab stations donated by ORG



Thanks to ORG the students are able to...

Students are currently conducting a cross-linking lab, shape memory polymers using silicon, epoxy resin (ACCESS Grant) and a Polyurethane Foam Lab that we would not have normally done, but the added lab stations provide the ability to do so.

Students create a History of Rubber report, conduct a lab investigation between natural and synthetic rubber, and determine cross-link density of polymers at the lab stations.



Engineering Academy Students conducting labs at the ORG Station 1 and ORG Station 2.

Content Focus

- Students begin learning the basics of Rheometry using our ODR from Alpha Technologies donated generously from Firestone Polymers.
- Stress & Strain of polymers with our Zwick Tensile Tester.
- Morgan Press Transfer Mold Machine to make lab samples of Izod and Tensile Bars.
- Izod Impact, Durometer & Rockwell Hardness, & Resistance to Abrasion.
- Accelerated Weathering Machine

Content Needs

- New testing equipment to keep current with industry
- May 2021 - Doug Foster, Denise Kotz, & Joel Neilsen visited Stow Lab for recommendations.
 - Rubber Press seemed to provide the most diverse options
- Industry Input
 - What introductory skills/knowledge/training are most valued for students pursuing a career in the industry?
 - Hold ideas until the end.

Transition to new Program



MME



Students will learn the essential skills necessary to run and make repairs to manufacturing machines. Employability skills are also a focal point of the curriculum. Qualified students will be matched with an apprenticeship partner in their second year. These apprenticeships may be paid and will allow for further education to continue outside of the classroom, as well as connecting the students to professionals in the industry.

MME Program Overview

- Focus on employability skills
- Apprenticeship Opportunities provided through Stark State
- Students leave school their senior year to go work and get credit to do so.
- Students can earn new graduation seals to help graduate

Modern Manufacturing for Employment

offered at
Stow-Munroe Falls High School

- Hands on Curriculum
- Employability Skills
- Paid Pre-Apprenticeship Opportunity
- Work Based Learning - earn school credits to work
- Machine Tools, Mechanisms & Drives (motors & hydraulics)



CAREER OPPORTUNITIES

- Line Operator
- Machine Setter
- Maintenance or Quality Technician
- Manufacturing Journeyman

Modern Manufacturing for Employment Content

- Principles of Manufacturing
 - Mechanical Drawing & Reading
 - Design Process & CAD
- Precision and Advanced Machining
 - Measurement & Interpretation
 - Cutting, Drilling, Grinding
 - Maintenance
- Electrical and Electronic Theory
 - Motors & Power, & Pumping Systems/Hydraulics
 - Mechanical Drive Systems + Maintenance

MME looking for industry partners

- ★ MME needs companies that are interested in developmental talent.
- ★ Students may need flexible work hours
 - May start 7:30AM or 9AM or after, some part time
- ★ Monthly job evaluation form
- ★ Federal WIOA money - Workforce Innovation and Opportunity Act; which is disbursed by Summit County Job and Family Services. \$8,000

MME & Engineering Academy Advisory Committees

- Industry representatives that help provide insight, suggestions, connections, etc to the high school programs.
 - Help keep curriculum current with industry trends.
 - May help with search for equipment, supplies, job opportunities, grants/funding, etc.

Questions?

- Industry Input
 - What introductory skills/knowledge/training are most valued for students pursuing a career in the industry?

<https://forms.gle/hLuRdCwHVMzW9Xoh7>

Want to get involved?

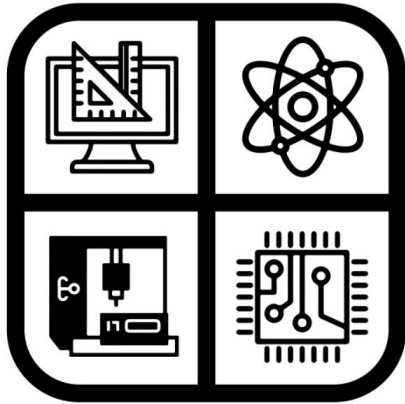
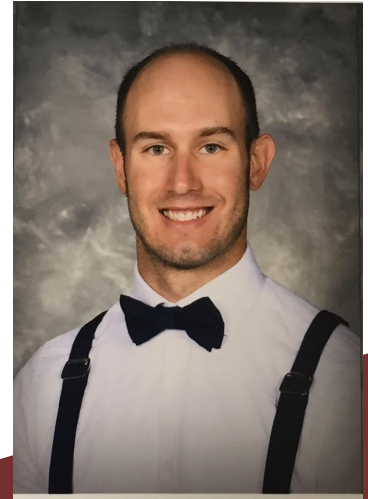


QR code for Google Form Contact Information

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