Regional STEAM High School

High School Choice

8th grade Student and Family Information Session

Regional STEAM High School Choice Information Session

Agenda

- Welcome and Introductions
- STEAM is Born
- Collaboration
  - Business / Industry
  - Higher Education
- Facility
- Concentrations
- Curriculum
- Career Ready Practices
- Instructors
- Next Steps

Regional STEAM High School

- City of Syracuse, SCSD, and Onondaga County teamed up to develop the area's first-ever STEAM high school

- Former Central High School, located in downtown Syracuse at the corner of S. Salina St. and Adams St

- Will offer a rigorous academic curriculum with a focus on STEAM
- Open to students from SCSD and OCM BOCES component districts

Regional STEAM High School

Open to students from SCSD and OCM BOCES component districts

- Baldwinsville
- Cazenovia
- Chittenango
- Cincinnatus
- Cortland
- DeRuyter
- East Syracuse Minoa
- Fabius-Pompey
- Fayetteville-Manlius
- Homer
- Jamesville-Dewitt
- Lafayette
- Liverpool
- Lyncourt
- Marathon
- Marcellus
- McGraw
- North Syracuse
- Onondaga Central
- Solvay
- Tully
- West Genesee
- Westhill
- City of Syracuse

Regional STEAM High School

- State of the art facilities and equipment
- Renovated historic Lincoln Auditorium
- College course work offered in all concentrations
- Mentoring, internships and job shadows with top companies and arts organizations
- Sports, extracurricular, and after school and summer programing

Regional STEAM High School

- 9th – 12th grade pathway model
- Offering nine concentrations
- Students will apply for two concentrations
- Interviews / Showcase

Collaboration

- Top companies and arts organizations in the respective fields of STEAM are onboard!
- These industry leaders will provide us with their expertise as well as in areas of mentoring, internships and job shadows

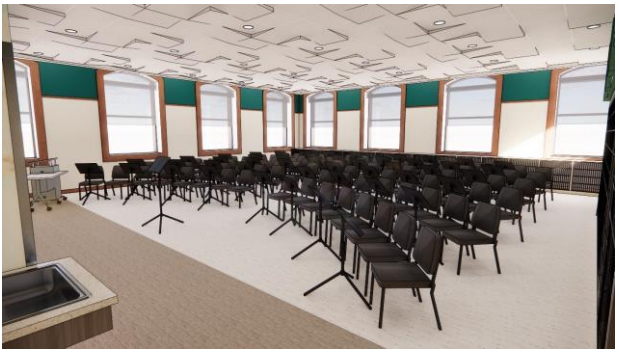
WCNY · M3 Innovation · Downtown Committee of Syracuse · Syracuse City School District · Syracuse University · UR United Radio · Chimera International · Procore · amazon · aws · JMA Wireless · redhouse · The Tech Garden · Le Moyne College · Syracuse Builders Exchange · MVCC · Blue Water · SMPTE · CNY Film Professionals · SUNY Morrisville · Microsoft · Live Nation · Syracuse Stage · ESF · Film Syracuse · Symphoria · Onondaga Community College · PTA · Oswego · OHA Onondaga Historical Association · MACNY The Manufacturers Association · VA U.S. Department of Veterans Affairs · City Dizz · ASIC American Society of Theatre Consultants · Elite Lake Erie · usitt · C&S Companies · HB Huber Breuer · Film Festival · On The One · Thales Building a future we can all trust · SUNY Polytechnic Institute · Apple · The Perkins Innovation · gearhead · University of Syracuse · Wolfspeed · Lockheed Martin · Peaceful Schools Productions · Turner · Walkair · Micron · Daldrup · CMC Dance Company · E. Smith Contractors LLC · OCMBOCES · InteEQ · Upstate · Schneider · Citi | Arts in Education · The ART Store · Studio Central · Lotte Biologics

Facility

- This project will bring back to life the former Central High School
- It still contains some of the original woodwork and ornate interior design
- Italian marble floors in the entry-way and four cast iron stair ways
- Fully renovated Lincoln Auditorium

State of the Art Equipment, Labs, and Studios

Music Room



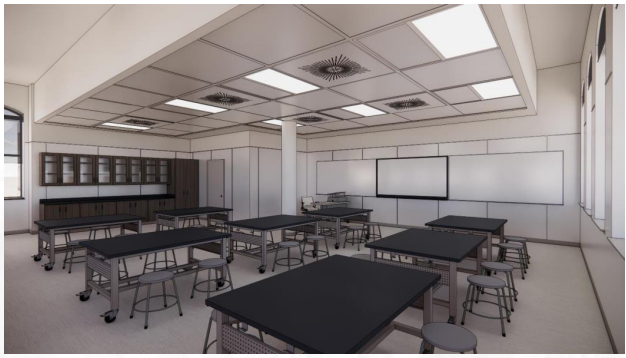
Dance Studio

Art Studio

Robotics and Automation Lab

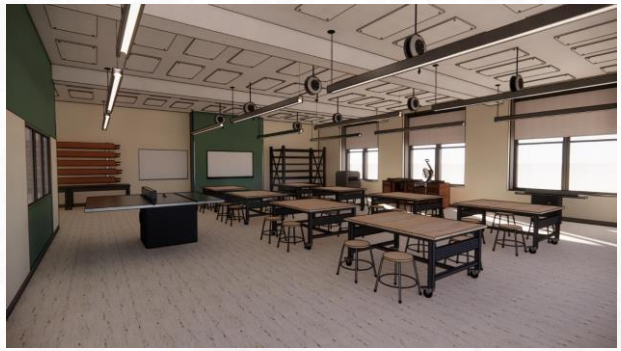
Animation and Gaming Lab

Emulated Cleanroom



Audio Visual Production

Entertainment Engineering



Main Office

Robotics and Automation Lab

Concentrations

- Animation and Game Design
- Business Entrepreneurship
- Construction Management
- Data Analytics
- Entertainment Engineering
- Performing Arts
- Robotics and Automation
- Semiconductor Manufacturing Technology
- Visual Arts

Animation and Game Design

Career Opportunities

- Webmaster and Developer
- Video Game Designer
- Animator
- Multimedia
- Application Developer
- Streaming Video and Digital Film Producer
- Art Director
- Film and Video Editor
- Graphic Artist
- Digital Media
- Photographer
- Social Media Specialist
- Pro Gaming Player
- Esports Attorney
- Public Relations
- Network Engineer

Students will have the opportunity to earn micro credentials in digital applications, such as Adobe Certified Associate (ACA), App Development with Swift Certification, Avid Pro Tools Certifications, AWS Certified Cloud Practitioner, Certified Internet Web (CIW) Certifications, and Microsoft 365 Certifications to add to interactive digital portfolios of their work.

Business Entrepreneurship

Career Opportunities

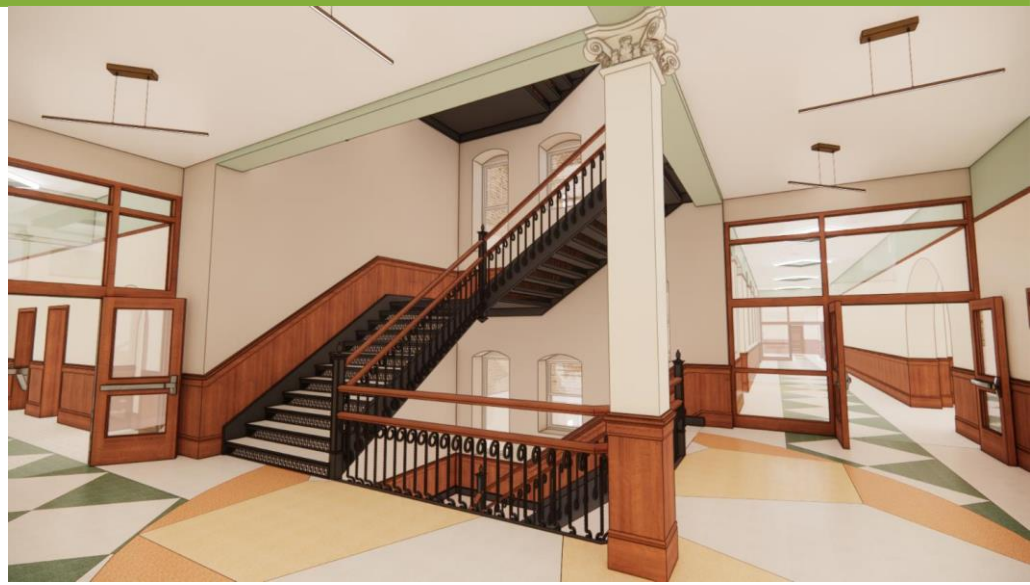
- Entrepreneur
- Intrapreneur
- Chief executive officer
- General managers
- Business and development manager
- Operations managers
- Management analysis
- Public organization manager
- Manufacturing manager
- Purchasing manager
- Small business owner

The Business Entrepreneurship program will prepare students for careers and further education and training in the world of business. Students will learn concepts and techniques for planning entrepreneurial ventures, using design thinking and business model development.

Construction Management

Career Opportunities

- Project Manager
- Building Inspector
- Code Enforcement Officer
- Construction Manager
- Contractor
- Cost Estimator
- Field Engineer
- Heavy Equipment Operator

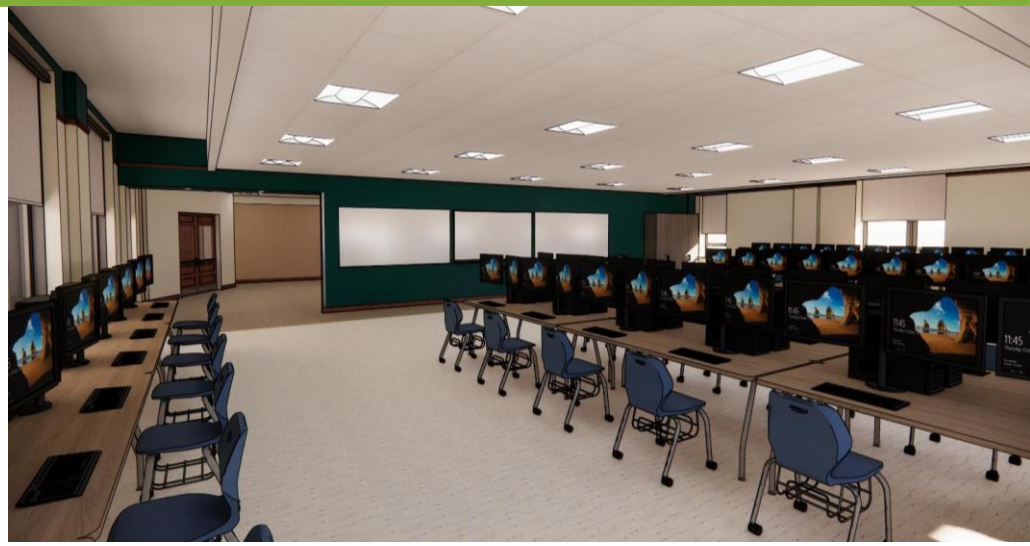


Students in our program are prepared for careers and further education and training in the construction industry, It provides a balanced focus on technical construction knowledge, such as methods, materials, systems, and layouts, as well as managerial, financial, and planning skills necessary to complete construction projects successfully.

Data Analytics

Career Opportunities

- Data Analyst
- Business Analyst
- Financial Analyst
- Data Scientist
- Data Engineer
- Operations Analyst
- Risk Analyst
- Research Analyst
- Data Journalist
- Business Intelligence Analyst
- Marketing Analyst
- Transportation Logistics Specialist

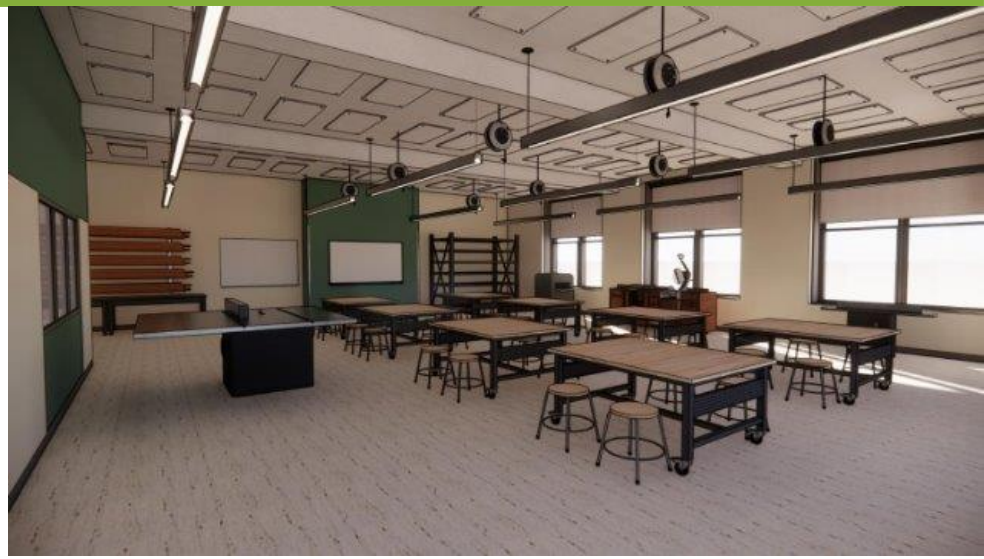


Students in this program will learn the fundamentals of data science, its currency in the job market, and its applicability to everyday life through hands-on projects with real-world datasets. Students will learn about the reasons why data is collected, and the questions data analytics is used to answer. Students will be introduced to various ways of collecting data and the effect that data collection has on the interpretation of the patterns they discover.

Entertainment Engineering

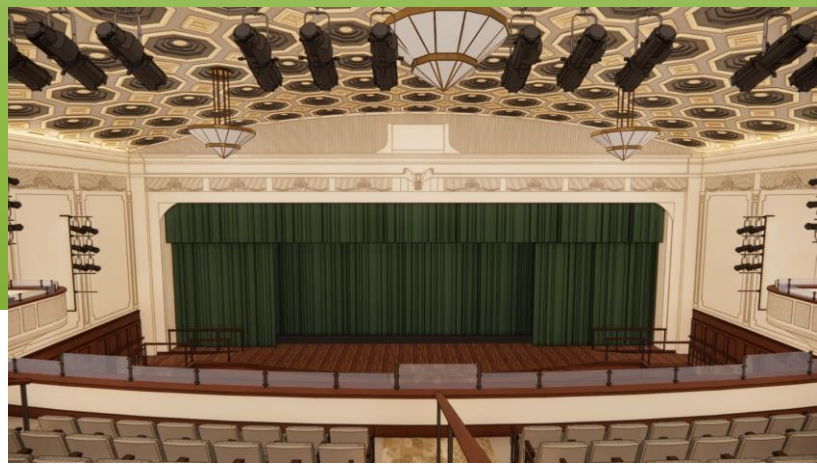
Career Opportunities

- Set Design and Construction
- Event Production
- Visual Production Engineer
- Lighting Design Engineer
- Audio and Sound Engineer
- Theater Production Manager
- House and Stage Manager
- Costume Designer
- Prop Manager



Students will learn techniques used by industry professionals. Key areas of instruction and experience include elements of design; set design/ dressing and construction; wardrobe and costume design and production; audio and lighting design and implementation; production, stage and front of house management; analysis of technical requirements.

Performing Arts



Career Opportunities

- Actor
- Dancer
- Musical theater performer
- Music therapist
- Teacher
- Theater director
- Screenwriter
- Arts administrator
- Theater stage manager
- Casting director
- Director

Focus of Study

- Band
- Chorus
- Orchestra
- Dance
- Theatre
- Music Theory
- Piano
- Digital Music

Students in our program will work in a professional environment and have opportunities to perform in the historic, fully renovated Lincoln Auditorium. Students will build their technical and expressive skills.

Robotics and Automation

Career Opportunities

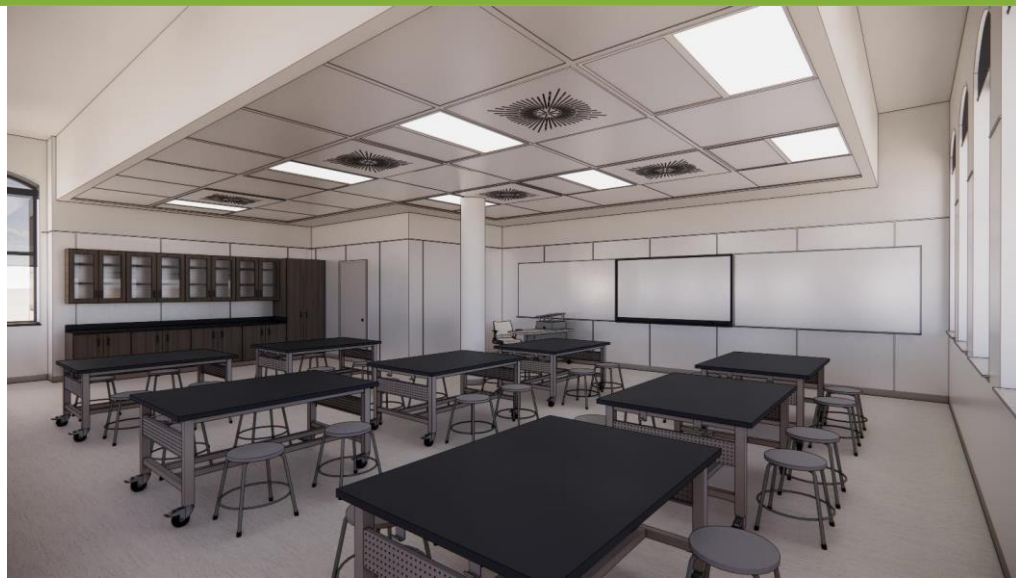
- Electromechanical Technician
- Automation Technician
- Mechanical Engineer
- Robotics Operator
- Robotics Engineer
- Aerospace Engineer
- Computer Scientist
- Software Engineer
- Machine Learning Engineer

Students will learn the fundamentals of robotic technologies, its currency in the job market, and its applicability to everyday life. Students will gain an understanding of how robotic technologies impact the environment, society, and the economy.

Semiconductor Manufacturing Technology

Career Opportunities

- Semiconductor Manufacturing
- Technician
- Semiconductor Equipment
- Technician
- Fab Manufacturing Technician
- Semiconductor Engineer
- Test Engineer
- Etch Process Engineer
- Material Handler
- Operations Manager
- General Manager



This program prepares students for careers in the semiconductor manufacturing industry. Students will be trained on state of-the-art industry standard equipment and work in a simulated clean room. The
program is orientated for students to learn monitoring, sustaining, and improving equipment.

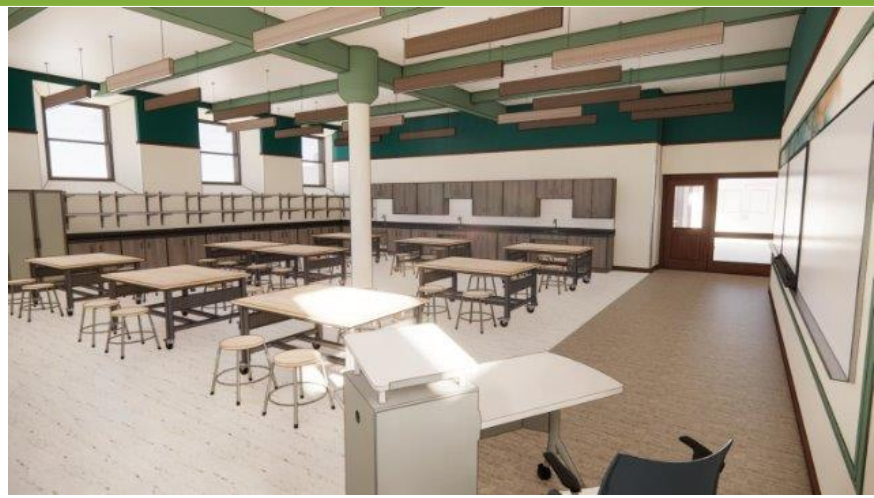
Visual Arts

Career Opportunities

- Architect
- Archivist
- Art Consultant
- Art Editor
- Art Gallery
- Director Artist
- Cartoonist
- Cinematographer
- Graphic designer
- Photographer
- Sculptor
- Interior designer
- Design assistant
- Fashion designer
- Set designer

Focus of Study

- 2D Art
- Digital Art
- Photography
- Art History
- Portfolio Preparation



Students in this program learn skills in 2 Dimensional and 3-Dimensional art. They will explore development of various mediums, concepts, and philosophies which include drawing, painting and other creative 2D media, ceramics, sculpture, printmaking and other 3D media.

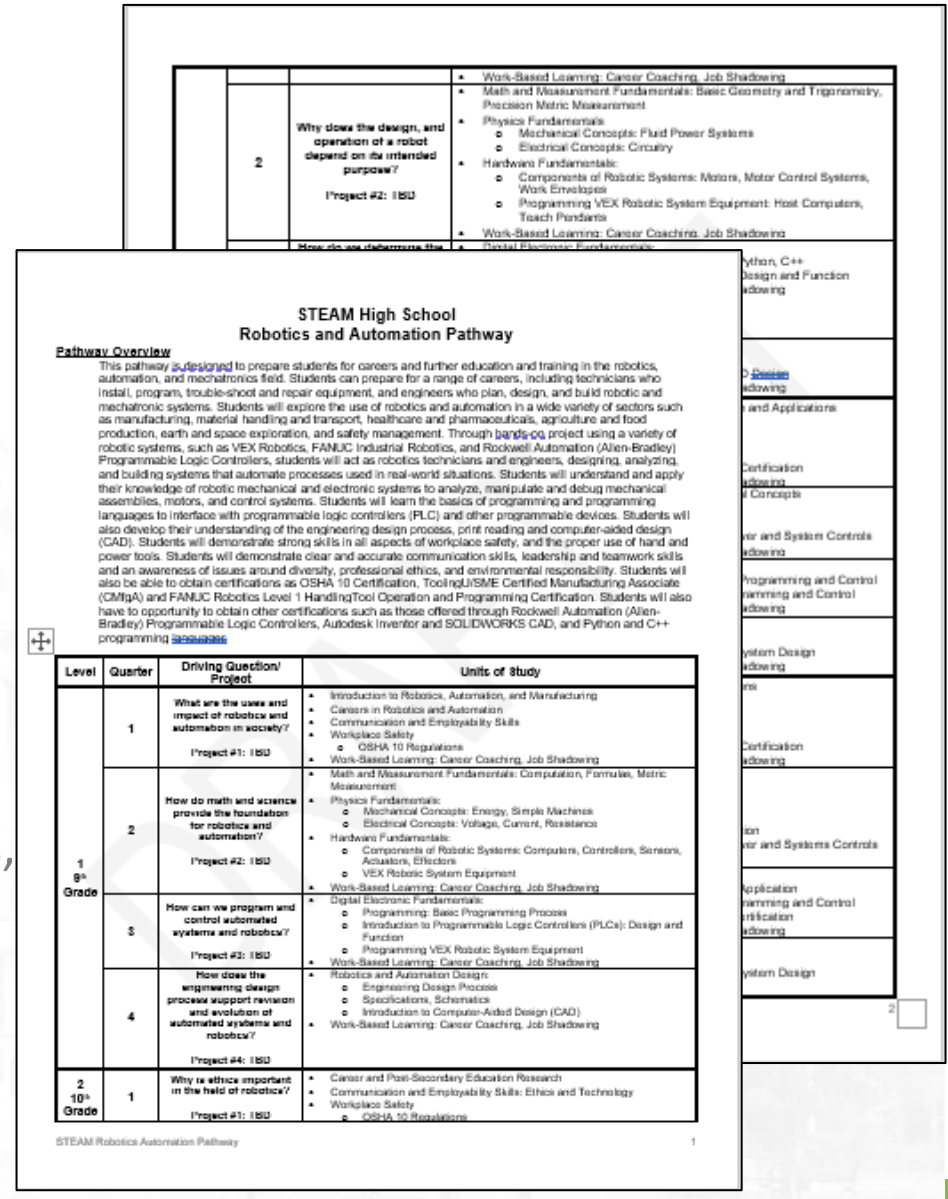
Curriculum: Starting with the End in Mind

Development

- Ongoing input/support from industry and higher education partners
- Teachers write and revise (with support)

Content

- Aligned to industry standards
- Incorporates career ready practices
- Opportunity to earn national credentials, college credit, and college degrees



STEAM High School
Robotics and Automation Pathway

Pathway Overview

This pathway is designed to prepare students for careers and further education and training in the robotics, automation, and mechatronics field. Students can prepare for a range of careers, including technicians who install, program, trouble-shoot and repair equipment, and engineers who plan, design, and build robotic and mechatronic systems. Students will explore the use of robotics and automation in a wide variety of sectors such as manufacturing, material handling and transport, healthcare and pharmaceuticals, agriculture and food production, earth and space exploration, and safety management. Through hands-on project using a variety of robotic systems, such as VEX Robotics, FANUC Industrial Robotics, and Rockwell Automation (Allen-Bradley) Programmable Logic Controllers, students will act as robotics technicians and engineers, designing, analyzing, and building systems that automate processes used in real-world situations. Students will understand and apply their knowledge of robotic mechanical and electronic systems to analyze, manipulate and debug mechanical assemblies, motors, and control systems. Students will learn the basics of programming and programming languages to interface with programmable logic controllers (PLC) and other programmable devices. Students will also develop their understanding of the engineering design process, print reading and computer-aided design (CAD). Students will demonstrate strong skills in all aspects of workplace safety, and the proper use of hand and power tools. Students will demonstrate clear and accurate communication skills, leadership and teamwork skills and an awareness of issues around diversity, professional ethics, and environmental responsibility. Students will also be able to obtain certifications as OSHA 10 Certification, ToolingU/SME Certified Manufacturing Associate (CMfgA) and FANUC Robotics Level 1 HandlingTool Operation and Programming Certification. Students will also have to opportunity to obtain other certifications such as those offered through Rockwell Automation (Allen-Bradley) Programmable Logic Controllers, Autodesk Inventor and SOLIDWORKS CAD, and Python and C++ programming languages

Level	Quarter	Driving Question/ Project	Units of Study
1 8th Grade	1	What are the uses and impact of robotics and automation in society? Project #1: TBD	• Introduction to Robotics, Automation, and Manufacturing • Careers in Robotics and Automation • Communication and Employability Skills • Workplace Safety ○ OSHA 10 Regulations • Work-Based Learning: Career Coaching, Job Shadowing

	2	How do math and science provide the foundation for robotics and automation?
		Project #2: TBD
			• Math and Measurement Fundamentals: Computation, Formulas, Metric Measurement
			• Physics Fundamentals:
			  ○ Mechanical Concepts: Energy, Simple Machines
			  ○ Electrical Concepts: Voltage, Current, Resistance
			• Hardware Fundamentals:
			  ○ Components of Robotic Systems: Computers, Controllers, Sensors, Actuators, Effectors
			  ○ VEX Robotic System Equipment
			• Work-Based Learning: Career Coaching, Job Shadowing

	3	How can we program and control automated systems and robotics?
		Project #3: TBD
			• Digital Electronic Fundamentals:
			  ○ Programming: Basic Programming Process
			  ○ Introduction to Programmable Logic Controllers (PLCs): Design and Function
			  ○ Programming VEX Robotic System Equipment
			• Work-Based Learning: Career Coaching, Job Shadowing

	4	How does the engineering design process support revision and evolution of automated systems and robotics?
		Project #4: TBD
			• Robotics and Automation Design:
			  ○ Engineering Design Process
			  ○ Specifications, Schematics
			  ○ Introduction to Computer-Aided Design (CAD)
			• Work-Based Learning: Career Coaching, Job Shadowing

2 10th Grade	1	Why is ethics important in the field of robotics? Project #1: TBD	• Career and Post-Secondary Education Research • Communication and Employability Skills: Ethics and Technology • Workplace Safety ○ OSHA 10 Regulations

STEAM Robotics Automation Pathway 1

Career Ready Practices

Common Career Technical Core

- National standards, recognized by industry
- Skills to prepare students for college and career
- Learned and refined throughout each CTE program

Syracuse City School District Career and Technical Education

CAREER READY PRACTICES

Instructors

How do we recruit and prepare our instructors?

- Strong partnerships (industry, community, higher education) are essential resources for recruitment
- Critical to collaborate with NYSED and higher education
- Professional development
- 26-day Intensive SREB training with ongoing coaching

What the Data Tells Us

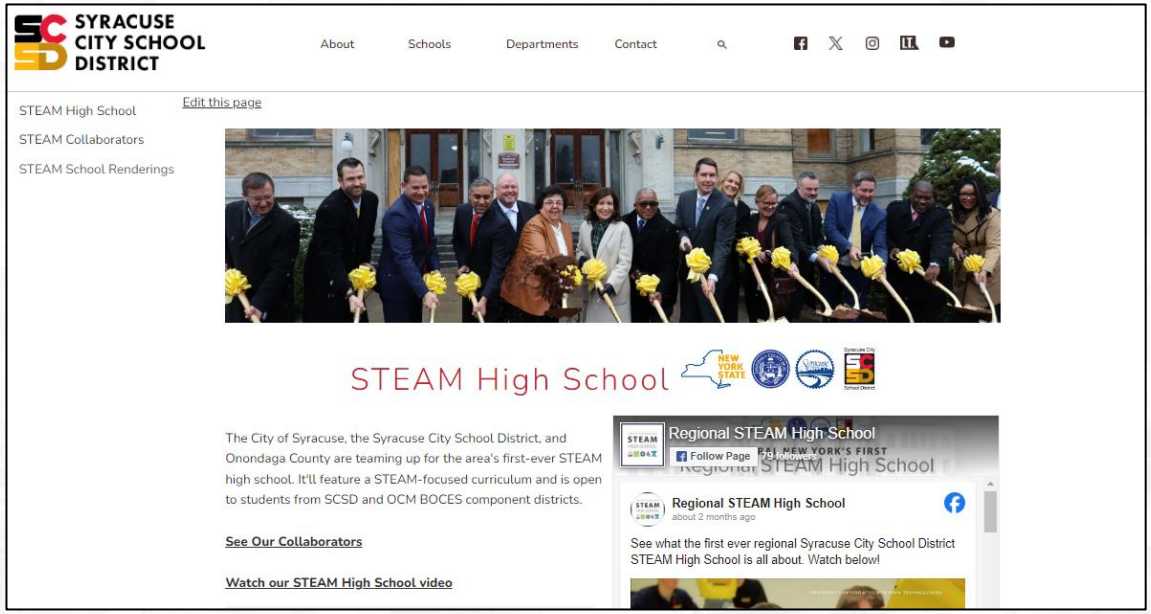
Students enrolled in CTE Pathways

- Increased engagement
- Better attendance
- Higher GPA
- Higher graduation rates
- Career and college ready graduates

Learn More About the STEAM

Syracuse City School District Web Page

- From the home page, hover over **Schools** and select **STEAM**
- Information on each concentration, collaborators, and the school



Next Steps

High School Choice Timeline

- High School Choice form mailed home
- Return to middle school counselor by January 15, 2025

- CTE Interest forms will be completed in their school
- CTE teams supports students in the High School Choice process
- Interview / Showcase

Thank you!

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